

#### SAPTHAGIRI COLLEGE OF ENGINEERING ISO 9001:2015 & ISO 14001:2015 Certified Institute Accredited By NAAC with "A" Grade, Accredited By NBA #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560 057

Academic Year: EVEN/2021- 2022

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Batch No.	USN	Name
1	1SG18CS019	BHUVAN GOWDA BS
	1SG18CS022	DARSHAN S
2	1SG19CS019	CHANDANA G
	1SG19CS032	HARSHINI GIRISH MITRA
3	1SG19CS052	LAVANYA C
	1SG19CS018	CHANDAN V M
4	1SG19CS027	DEEPTHI.B.S
	1SG19CS035	HARSHITHA.V
5	1SG19CS023	CHITHRA P
	1SG19CS041	K N BHAVYA
6	1SG19CS008	ANJALI G S
	1SG19CS016	BHAVYA VAISHNAVI
7	1SG19CS013	ARHAM SABA
	1SG19CS060	MAYANK RAJ
8	1SG19CS042	KAJAL DAHIYA
	1SG19CS043	KAMINENI PRAVALIKA
9	1SG19CS020	CHANDRALA P DESPANDE
	1SG19CS022	CHETHANA R KARIGER
10	1SG19CS046	KAVYA P
	1SG19CS039	ЈҮОТНІ В
11	1SG19CS057	MANDHARA B G
	1SG19CS056	MANASA R
12	1SG19CS006	AMOGHA NATEKAR J
	1SG19CS017	BHUMIKA.M
13	1SG19CS009	ANKUR KUMAR
	1SG19CS011	ANURAG SINGH
14	1SG19CS058	MANJESH B N
	1SG19CS053	LIKITH GOWDA A P
15	1SG19CS005	AMAN KUMAR
	1SG19CS050	KSHITIJ KUMAR
16	1SG19CS049	KOKILA N
	1SG19CS061	MEGHA ARUN TALEKAR
17	1SG19CS051	KUMAR SWAPNIL
	1SG19CS055	MANAS MISHRA
18	1SG19CS010	ANUBHAW ANAND
	1SG17CS050	MD WAJAHAT RAZA

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	1SG20CS403	BHARATH G
	1SG20CS400	AMULYA S.K
20	1SG19CS031	HARSHA H J
	1SG19CS024	DEEKSHITH.B.V
21	1SG19CS030	ETUKULAPATI MEGHANA
	1SG19CS037	IIFA SHARIF
22	1SG19CS028	DHANYA M SHETTY
	1SG19CS034	HARSHITHA S
23	1SG19CS029	DIKSHA BHARDWAJ
	1SG19CS047	KESHAV CHANDRA RAY
24	1SG19CS001	ABHAY SMARAN HALEMANE
	1SG19CS004	ADHARSH BHANU SHARMA
25	1SG19CS040	K G LAKSHMI NARAYAN
	1SG19CS015	BHANURANJAN S B
26	1SG19CS026	DEEPAK RAJ
	1SG19CS044	KARAN RAJ
27	1SG20CS402	ANUSHA M.L
	1SG20CS401	ANNAPURNA KINI
28	1SG19CS012	ANUSHA DV
29	1SG19CS048	KISHOR S JAKKALI
	1SG19CS045	KARTHIK.K
30	1SG19CS003	ABHILASH S
	1SG19CS021	CHARAN S
31	1SG19CS025	DEEKSHITH GD
	1SG19CS033	HARSHITHA S
32	1SG19CS059	MANJUNATH BHARADWAJ V
	1SG19CS054	LIKITH KRISHNA S.G
33	1SG19CS007	ANISH BHAT
	1SG19CS002	ABHIJITH YADAV
34	1SG19CS063	MONISH V
	1SG19CS062	MONISH KUMAR.P
35	1SG19CS014	ASISH SINGH

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road Bengaturu - 560 057

Orofessor & Head of the Department Computer Science Engineering Sapthagiri College of Engineering Bangalore - 57





#### ISO 9001:2015 & ISO 14001:2015 Certified Institute

### Accredited By NAAC with "A" Grade, Accredited By NBA

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#### Academic Year: EVEN/2021- 2022 6TH B

Batch No.	USN	NEETU VIJAYANANDA
1	1SG19CS069	
	1SG19CS071	NISARGA R K
2	1SG19CS070	NIDHI N SATTIGERI
	1SG19CS070	POOJITHA G
3	1SG19CS074	SAHANA G NAIK
	1SG19CS087	PRASHANTH
4	1SG20CS409	SUCHITH
	1SG20CS411	VAISHNAVI V KULAKARNI
5	1SG19CS117	YASHASWINI N
	1SG19CS124	PREETHAM
	1SG20CS410	LOHITH
6	1SG20CS407	SURAKSHA M S
	1SG19CS111	POOJA N M
7	1SG19CS073	VISHAL R
	1SG19CS123	UMESH R G
8	1SG19CS116	PRANEET V K
	1SG19CS077	N VENU MAADHAV
9	1SG19CS065	PRANEET V K
	1SG19CS120	VIDHYAKRISHNA
10	1SG19CS122	VINUTHA D S
11	1SG19CS113	SUVIDHA MANJUNATH NAIK
11	1SG19CS115	THEJASHREE P
12	1SG19CS093	SANJANA PATIL
12	1SG19CS108	SRUSHTI KS
13	1SG19CS086	ROHITH S
13	1SG19CS089	SRISHA NAG C S
14	1SG19CS099	SHOURYA RANJAN
	1SG19CS118	VANSHAJ RAJ
15	1SG19CS125	YASHRAJ GUPTA
	1SG19CS126	SAJAD AHMAD
16	1SG19CS098	SHIVANI KUMARI
	1SG19CS107	SRISHTI SUMAN

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17	1SG19CS104	SOUMYA
	1SG19CS100	SHREYASI PATRA
18	1SG19CS083	RAKSHITH BS
19	1SG19CS068	NAYANIKA SUR
20	1SG19CS072	PADMINI SHARMA
21	1SG19CS095	SHEJAL SINGH
21	1SG19CS066	NAVDEEP TANWAR
22	1SG19CS081	RAHUL KUMAR
22	1SG19CS075	PRABHAKAR B K
23	1SG19CS076	PRAMOD
23	1SG19CS080	PRIYESH RAJ
24	1SG19CS078	PRANSHU PRIYAM
24	1SG19CS082	RAJAT YADAV
25	1SG19CS109	SUBHANSHU JHA
23	1SG19CS101	SHUBHAM RAJ
26	1SG18CS071	PRAJWAL P
20	1SG18CS058	MUDEGOWDAR VINAY
27	1SG19CS114	THEJASHREE B P
21	1SG19CS121	VIDYASHREE S
29	1SG20CS408	NANDINI N
29	1SG20CS406	HARSHITHA.M H
30	1SG19CS091	SANCHITHA K
30	1SG19CS090	SANCHANA HT
31	1SG19CS110	SUNIL A
31	1SG19CS097	SHIV PRASAD
32	1SG19CS103	SNEHA N
32	1SG19CS092	SANDHYA S
33	1SG19CS112	SUSHIL KUMAR G N
33	1SG19CS119	VARUN S
34	1SG19CS088	SAHITYA MODI
34	1SG19CS064	MUSKAN
35	1SG19CS094	SANTHOSH K
	1SG19CS089	SAMBRAM SHETTY
36	1SG19CS105	SRIRAM MISHRA H K
	1SG19CS084	RAKSHITH K P
37	1SG19CS085	RITHVIK PRASHANTH
31	1SG19CS096	SHEKHAR

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## Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Graphical implementation of Solar System using Open GL"carried out by BHUVAN GOWDA BS (ISG18CS019) DARSHAN S (ISG18CS022), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor

Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

Signature with Date

Shobha.le

Sapthagiri College of Engineering 14/5, Chilikkasandra, Hasaracha

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## Department of Computer Science and Engineering



This is to certify that the Mini Project Work entitled "Graphics Editor" carried out by HARSHINI GIRISH MITRA(1SG19CS032) and CHANDANA G (1SG19CS019)bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra **Associate Professor** 

the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOL Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Shobball
2. Chenther

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hasaraghatta Main

Bengaluru - 560 057

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#### Department of Computer Science and Engineering (Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Traffic Signal control using Open GL" carried out by CHANDAN V M (1SG19CS018), LAVANYA C (1SG19CS052), bonafide students of Sapthagiri College of Engineering,in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of th Mrs. Chaithra Associate Professor

an 12/2 Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Shobha. E

Sapthagiri College of Engineering 14/5, Chikkesandra, Hesaraghatta Main Road Bengaluru - 560 057

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# Department of Computer Science and Engineering

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### Certificate

This is to certify that the Mini Project Work entitled "Graphical implementation of Rocket Launching using Open GL" carried out by DEEPTHI B S (1SG19CS027) and HARSHITHA V (1SG19CS035), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra

Mrs. Chaithra
Associate Professor

Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

1. Chartha

Signature with Date

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Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hasanan

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#### Certificate

This is to certify that the Mini Project Work entitled "Graphical implementation of Singly Linked List using Open GL" carried out by CHITHRA P (1SG19CS023) K N BHAVYA (1SG19CS041),bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor

Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chartha Principal Principal Sapthagiri College of Engineering Sapthagiri College of Engineering 14/5, Chikkasendra, Hesaraghatta 88/4/19 Pengaluru - 800

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#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Bus Stop Simulation "carried out by Anjali G S(1SG19CS008), Bhavya Vaishnavi(1SG19CS016) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Shopha n

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

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# Department of Computer Science and Engineering

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# Certificate

This is to certify that the Mini Project Work entitled "Olympic Logo using OpenGL" carried out by ARHAM SABA (ISG19CS013), MAYANK RAJ (ISG19CS060) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra

Associate Professor

Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal Sapthagiri College of Engineering 5, Chikkasandra, Hesaraghatta Main Ros

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Car Parking using Selection Sort Algorithm" carried out by Kajal Dahiya(1SG19CS042), Kamineni Pravalika(1SG19CS043) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor

Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

L lista 102/202 Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Charles Charles no V

Sapthagirl College of Engineering

14/5, Chikkasendra, Hesaraghatta Mais Road

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# Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Working of Satellite" carried out by CHANDRALA P DESHPANDE (1SG19CS020), CHETHANA R KARIGER (1SG19CS022) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra

Associate Professor

Signature of the Guide Mrs. Swetha B.N Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & HOD

US 18 07002

EXTERNAL EXAMINATION

Name of the Examiners

Capthagiri College of Engineering Alfs, Chikkasandra, Hesaraghatta Main Road Bengaluru - 560 057

Signature with Date

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi.)
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#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "LINE BLENDING WITH COLORS" carried out by JYOTHI B(1SG19CS039), KAVYA P(1SG19CS046) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide
Mrs. Chaithra
Associate Professor

Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

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EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Charlina Charlina K

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

18/1/2

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# Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Designing a Steam Engine" carried out by MANASA R (ISG19CS056) and MANDHARA B G (ISG19CS057), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Mrs. Chaithra

**Associate Professor** 

Mrs. Swetha B.N

**Assistant Professor** 

118/00/20 Signature of the HOD

Dr. Kamalakshi Naganna

Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Principal

Sapthagiri College of Engineering 1/5, Chikkasandra, Hesarad

Signature with Date

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#### Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "3D Rotating Fan using Open GL" carried out by AMOGHA NATEKAR J (ISG19CS006) & BHUMIKA M (ISG19CS017), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Mrs. Chaithra **Associate Professor** 

Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

les 18/07

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Charlina

Sapthagirl College of Engineering 14/5, Chikkasandra, Hasaraghatta Main Ros Bengaluru - 560 057

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road. Bengaluru-560057

# Department of Computer Science and Engineering

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### Certificate

This is to certify that the Mini Project Work entitled "Tower of Hanoi using Open GL" carried out by ANURAG SINGH (ISG19CS011) & ANKUR SINGH (ISG19CS009), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide

Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOL Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Shobha.k

Principal Sapthagiri College of Engineeri

14/5, Chikkasandra, Hesaraghatta Main Road Bengaluru - 560 057

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
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#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Graphical implementation of Flowing Fountain using Open GL" carried out by LIKIT GOWDA AP(ISG19CS053), MANJESH B N(ISG19CS058), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of Computer Graphics Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Prof. Chaitra Associate Professor Signature of the Guide Prof. Swetha B N Assistant Professor

Signature of the HOD

Dr. Kamalakshi Naganna
Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

shobba. K

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

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# Department of Computer Science and Engineering

Accredited by NBA



This is to certify that the Mini Project Work entitled "MOVING CUBE WITH HAND DETECTION" carried out by AMAN KUMAR(ISG19CS005) and KSHITIJ KUMAR(ISG19CS050) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Mrs. Chaithra

Signature of the Guide

Mrs. Swetha BN

Signature of the HOD

Dr. Kamalakshi Naganna

Associate Professor

Assistant Professor

Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chaitha

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Maln Road

Bengaluru - 580 057

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(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Graphical implementation of Page replacement algorithms" carried out by KOKILA N (ISG19CS049) and MEGHA ARUN TALEKAR (ISG19CS061), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD

Dr. Kamalakshi Naganna
Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Charline Chobha. K

Principal

pthagiri College of Engineer

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(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Airplane takeoff" carried out by KUMAR SWAPNIL (1SG19CS051) & MANAS MISHRA (1SG19CS055) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra

Associate Professor

of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

US2109/2012

**EXTERNAL EXAMINATION** 

Name of the Examiners

1. Shobbark

Principal Sapthagiri College of Engineering

14/5, Chikkasandra, Hesaraghatta Main Ross Bengaluru - 560 057

Signature with Date

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Tic-Tac-Toe Game using Open GL" carried out by ANUBHAW ANAND(1SG19CS010), MD WAJAHAT RAZA(1SG17CS050) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor

Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HO Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Sapthagirl College of Engineering

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade
#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "AIRSHOW WITH TRICOLOUR(INDIA FLAG)" carried out by AMULYA SK (ISG20CS400) BHARATH G (ISG20CS403) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD

Dr. Kamalakshi Naganna

Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Shobha.K

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Mes 10/22

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, Accredited by NBA #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

#### Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Graphical Implementation of Transformers usning OpenGL"carried out by DEEKSHITH B V(1SG19CS024), HARSHA H J(1SG19CS031) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor, of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University. Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of Graphical Implementation of Transformers usning OpenGL (18CSL67) prescribed for the said Degree.

Signature of the Guid Prof. Chaithra

Associate Professor

Signature of Prof. Swetha BN **Assistant Professor**  Signature of the HOD Dr. Kamalakshi Naganna

Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Sapthagirl College of Engineering 14/5, Chikkasandra, Hasaraghatta Main Road

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Lift Over Bridge using Open GL" carried out by ETUKULAPATI MEGHANA (ISG19CS030) and IIFA SHARIF(ISG19CS037), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Mrs. Chaithra **Associate Professor**  Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Bangaluru - 560 057

Signature with Date

Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road

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### Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitle" Graphical Implementation Of Electric Power Generation Through Wind Mill Using Open GL"carried out by DHANYA M SHETTY (1SG19CS028), HARSHITHA S(1SG19CS034), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory Mini Project (18CSMP67) prescribed for the said Degree.

Mrs. Chaithra

Associate Professor

Signature of the Guide Mrs. Swetha B N

**Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

W 16/07/202

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chartha Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraphatte Main Room

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade
#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Multilight" carried out by DIKSHA BHARDWAJ (1SG19CS029) & KESHAV CHANDRA RAY (1SG19CS047) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra

Mrs. Chaithra
Associate Professor

Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD

Dr. Kamalakshi Naganna
Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

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Principal
Principal
Engineering
Sapthagiri College of Engineering
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Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

Accredited by NBA



This is to certify that the Mini Project Work entitled "Graphical simulation of a Ship using Open GL" carried out by Abhay Smaran Halemane (1SG19CS001) and Adharsh Bhanu Sharma (1SG19CS004), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide

Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chailthea Shophae. 10

Sapthagirl College of Engineering 14/5, Chikkasandra, Hesaraghatta Maln Road Bengeluru - 560 057

Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
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#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

### Department of Computer Science and Engineering

Accredited by NBA



#### Certificate

This is to certify that the Mini Project Work entitled "A Simple Village Scape using OpenGL" carried out by K G Lakshmi Narayan(18G19CS040) and Bhanuranjan S Bellakki(18G19CS015), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra

Mrs. Chaithra
Associate Professor

Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

1. Shobby le

Signature with Date

PHANIPAL

Sapthagiri College of Engineering

Bengaluru - 560 057

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(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



## Certificate

This is to certify that the Mini Project Work entitled "Atom Simulator using Open GL"carried out by DEEPAK RAJ (1SG19CS026) & KARAN RAJ (1SG19CS044), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with ni Project (18CSL67) prescribed for the said Degree.

Signature of the Guide

Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B.N Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal Sapthagirl College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Ros. Bengaluru - 560 057

1. Charthan

Affiliated to VTU Belagavi, Approved by AICTE, NEW DELHI ISO 9001-2015 & ISO14001-2015 Certified Institute, Accrideate by NAAC with 'A' Grade 14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru–560057.

# Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

Certified that the Mini Project Work entitled "3D home using Open GL" carried out by Annapurna Kini(1SG20CS401) & Anusha M L(1SG20CS402), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-22. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The miniproject report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide

Prof. Chaithra Associate Professor Signature of the Guide

Prof. Swetha B.N Assistant Professor Signature of the HOD

Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Shobba.10

Principal

Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road Bengaluru - 560 057 Signature with Date

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi.)
ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade
#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Catch Me" carried out by ANUSHA D V (1SG19CS012), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of Mobile Application Development Laboratory with Mini Project(18CSMP68) prescribed for the said Degree.

Signature of the Guide Mrs. CHAITHRA Associate Professor

Signature of the Guide Mrs.SWETHA B N Assistant Professor Signature of the HOD

Dr. KAMALAKSHI NAGANNA

Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Shobback

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

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( Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, NewDelhi.) ISO9001-2015&14001-2015Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

Accredited by NBA



This is to certify that the Mini Project Work entitled "Graphical Implementation of Page Replacement Algorithms" carried out by K.KARTHIK (ISG19CS045) and KISHORE S J (ISG19CS048), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degreein Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during theacademic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated inthe report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs.Chaithra **Associate Professor** 

Signature Mrs. Swetha B.N **Assistant Professor**  Dr. Kamalakshi Naganna Professor&Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghaita Main Road Bengaluru - 560 057

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, Accredited by NBA #14/5, Chikkasandra, Hesaraghatta Main Road,

Bengaluru-560057

## Department of Computer Science and Engineering

(According to NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Graphical implementation of Sorting using Open GL"carried out by ABHILASH S (ISG19CS003) and CHARAN S (ISG19CS021), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Prof. Chaithra Associate Professor

Signature of the Guide Prof. Swetha B.N Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

p lil 25/07

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal Sapthagirl College of Engineering

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road. Bengaluru-560057

## Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "3D Taj Mahal Model using Open GL" carried out by DEEKSHITH GD (1SG19CS025) & HARSHITHA S (1SG19CS033), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra **Associate Professor** 

Signature of the Guide Mrs. Swetha B.N **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

Sapthagiri College of Engineer 14/5, Chikkasandra, Hesaraghaffa Math Ress. Bengalung 452 045

Signature with Date

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, Accredited by NBA

#14/5, Chikkasandra, Hesaraghatta Main Road,

Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



## Certificate

This is to certify that the Mini Project Work entitled "Stack and Queue Implementation Using Open GL" carried out by LIKITH KRISHNA S G (ISG19CS054) and MANJUNATH BHARADWAJ (ISG19CS059).bonafide students of Sapthagiri College of Engineering, in partial fulfilment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the port. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Prof. Chaithra

Associate Professor

Prof. Swetha B.N Assistant Professor

Ell 19/02/202 Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road Bengaluru - 560 057

Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
1SO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade
#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

# Department of Computer Science and Engineering

Accredited by NBA



This is to certify that the Mini Project Work entitled "Graphical simulation of a Ship using Open GL" carried out by ANISH BHAT(1SG19CS007) and ABHIJITH Yadav L(1SG19CS002), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B.N Assistant Professor Signature of the HOD
Dr. Kamalakshi Naganna
Professor& Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

Signature with Date

1. Chailtra 2. Shobhait

Principal
Sapthagiri College of Engineerin
14/5, Chikkasandra, Hesaraghatta Med

28 7/22

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Atom Simulation using Open GL" carried out by MONISH.V(1SG19CS063) & MONISH KUMAR.P(1SG19CS062), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Chaithra Associate Professor Signature of the Guide Mrs. Swetha B N Assistant Professor Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

US 19/00/202

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Cheuttur

Principal
Principal
Sapthagiri College of Engineering

#### 2021-2022

# SAPTHAGIRI COLLEGE OF ENGINEERING

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



# Certificate

This is to certify that the Mini Project Work entitled "3D Bike Simulation using Open GL" carried out by ASHISH SINGH (ISG19CS014), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the

Mrs. Chaithra Associate Professor Mrs. Swetha B.N

Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

14/5, Chikkasandra, Hesaradi

Signature with Date

Sapthagirl College of Engineerl

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### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Simulation Of Train On Open GL" carried out by NEETL MIJAYANANDA (ISG19CS069), NISARGA R K (ISG19CS071), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Leboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Cheultur 2. Shobby t

Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "3-D Car Park using Open GL" carried out by NIDIII N SATTIGERI (ISG19CS070) and POOJITHA G (ISG19CS074), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K **Assistant Professor** 

Mrs. Kavitha B **Assistant Professor** 

US14/07 Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chartha 2. Shobblet

Sapthagiri College of Engineering 14/5, Chikkasandra, Hasaraghatta Malo Roa Bengaluru - 560 057

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#### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING Accredited by NBA



This is to Certified that the Miniproject work entitled "Amusement Park" carried out by bonafide students of 6th Semester, Sahana Gajanan Naik (1SG19CS087), Prashanth (1SG19CS074) bonafide students Sapthagiri College of Engineering, Bengaluru in partial fulfillment of the award of Bachelor of Engineering in Computer Science & Engineering of the Visvesvaraya Technological University, Belagavi during the year 2021-22. It is certified that all corrections/suggestions indicated for Final Assessment have been incorporated in the Report deposited in the departmental library. The activity point report has been approved as it satisfies the academic requirements in respect of Computer Graphics Laboratory with Miniproject prescribed for the said Degree.

Signature of the Guide Mrs.Shobha.k Assistant Professor

Name of the Examiners

Signature of the Guide Mrs.Kavitha.B Assistant Professor

**External Examination** 

Signature of the HOD Dr.Kamalakshi Naganna Professor & Head

Signature with Date

Saptha irie ollege of L. 14/5, Chikkaaandra, Hesaraghatta Main Road Bengaluru - 560 057

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.)
ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade,
#14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "3D Model of Golgumbaz" carried out by PRASHANTH B S(18G20CS409) and SUCHITH K(1SG20CS411), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

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Principal Sapthagiri College of Engli

Bengaluru - 560 057

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

#### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Dynamic Sorting Algorithm Visualization" carried out by VAISHNAVI VIJAY KULKARNI(ISG19CS117) and YASHASWINI N(ISG19CS124), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

. Chailtera Shobher. K

Principal

Sapthagiri College of Engineering 14/5, Chikkasandra, Hasaraghatta Main Road

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(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



s is to certify that the Mini Project Work entitled "Galvanic Cell Visualizer" LOHITH K(1SG20CS407) and PREETHAM P(1SG20CS410), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesyaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

gnature of the Guide Mrs. Shobha K Assistant Professor

Coultry Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal

Sapthagiri College of Engineering Chikkasandra, Hesaraghatta Main Rose Bengaluru - 560 057

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, Accredited by NBA
#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

his is to certify that the Mini Project Work entitled "Hare and Tortoise Story on OpenGL" carried out by OOJA N M (ISG19CS073). SURAKSHA M S(ISG19CS111), bonafide students of Sapthagiri College Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science degree of Visvesvaraya Technological University, Belagavi during the academic year 2021-22. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project for that been approved as it satisfies the academic requirements in respect of CGLaboratory with Mini ject (18CSL67) prescribed for the said Degree.

Signature of the Guide Prof. Shobha K

Signature of the Guide Prof.Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

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Signature with Date

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Shobla. K

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghalta Maio Roed

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(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057



#### Department of Computer Science and Engineering

(Accredited by NBA)

### Certificate

This is to certify that the Mini Project Work entitled "DATA COMMUNICATION" carried out by UMESH R G (1SG19CS116) and VISHAL R (1SG19CS123), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide

Mrs. Shobha K

Assistant Professor

Signature of the Guide

Mrs. Kavitha B

**Assistant Professor** 

Signature of the HOD

lis 13/07/2012

Dr. Kamalakshi Naganna

Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal

Sapthagiri College of Engine

Bengaluru - 560 057

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### Department of Computer Science and Engineering

(Accredited by NBA)

### Certificate

This is to certify that the Mini Project Work entitled "Point to point drawing program" carried out by N VENU MAADHAV (ISG19CS065) & PRANEET V K (ISG19CS077), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University. Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

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(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

#### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "3D Bicycle Simulation using Open GL "carried out by VIDHYAKRISHNA (1SG19CS120) and VINUTHA D S (1SG19CS122), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

Signature with Date

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Principal
Sapthagiri College of Engineering
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(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

## Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Scenario with different Seasons" carried out by SUVIDHA MANJUNATH NAIK(ISGI9CS113) AND THEJASHREE P(ISGI9CS115),bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2022-2023. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K **Assistant Professor** 

Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

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Signature of the H Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Chailhia Chailhia

apthagirl College of Engineering 14/5, Chikkasandra, Hasaraghatta Mala Road

Bengaluru - 560 05

Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

Department of Computer Science and Engineering



### Certificate

This is to certify that the Mini Project Work entitled "Graphical implementation of Sorting using Open GL" carried out by SANJANA PATIL(1SG19CS093), SRUSHTI K S(1SG19CS108) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2020-2021. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Courts Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

. Shopha b

Signature with Date

Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Maln Road

Bengaluru - 560 057

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### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Simulation of Solar Eclipse using Open GL"carried out by ROHITH.S (ISG19CS086) AND SRISHA NAG CS(ISG19CS086) ,bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Mrs. Kavitha B **Assistant Professor**  Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chaithra 2. Shobba. K

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### Department of Computer Science and Engineering

(Accredited by NBA)



#### Certificate

This is to certify that the Mini Project Work entitled "Working of Blockchain using Open GL" carried out by VANSHAJ RAJ (ISG19CS118) and SHOURYA RANJAN (ISG19CS099), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha.K **Assistant Professor** 

Signature of the Guide Mrs. Kavitha.B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal

Sapthagiri College of Engineering 14/5, Chikkasandra, Hess

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#### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "3D Bike Simulation using Open GL" carried out by SAJAD AHMAD (1SG19CS126) & YASHRAJ GUPTA (1SG19CS125), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagaviduring the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Mrs. Kavitha B **Assistant Professor**  Signature of the HOL Dr.Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Shobha-k

Sapthagiri College of Engineering

Bengaluru - 560 057

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### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "3D Room Designing using Open GL" carried out by SRISHTI SUMAN(ISG19CS107) & SHIVANI KUMARI(ISG19CS098), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagaviduring the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide rs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor Signature of the HOD Dr.Kamalakshi Naganna Professor & Head

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EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal
Sapthagiri College of Engineering 14/5, Chikkesandra, Hesaraghatta Main Road
Bengaluru - 560 057

107772

Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Rubik's cube using Open GL" carried out by SOUMYA (ISG19CS104) and SHREYASI PATRA (ISG19CS100), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha.K Assistant Professor

Signature of the Guide Mrs. Kavitha,B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

Signature with Date

Principal

14/5, Chikkasandra, Hesaraghatta Main Road

Bangaluru - 550 057

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057



### Department of Computer Science and Engineering

(Accredited by NBA)

### Certificate

This is to certify that the Mini Project Work entitled "Point to point drawing program" carried out by Rakshith BS (ISG19CS083), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

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EXTERNAL EXAMINATION

Name of the Examiners

1. Charltna 2. Shobha.K

Signature with Date

Principal Sapthagirl College of Engineering 14/5, Chikkasandra, Hes

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Graphical implementation of Airplane Take-off using Open GL" carried out by NAYANIKA SUR (ISG19C S068), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K **Assistant Professor** 

Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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EXTERNAL EXAMINATION

Name of the Examiners

1. Chaittra

Shobkaik

Signature with Date

Sapthagiri College of Engineering

Sandra, Hesaraghatta Main Road Bengaluru - 560 057

(Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001 2015 Certified, Accredited by NAAC with 'A' Grade,

#14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Certificate

### Department of Computer Science and Engineering

(Accredited by NBA)



mis is to certify that the Mini Project Work entitled "FUTURE SAPTHAGIRI UNIVERSITY" carried out by PADMINI SHARMA (18G19CS072) AND SHEJAL SINGH (18G19CS095), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of Computer Graphics Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

ignature of the Guide Mrs. Shobha K Assistant Professor

Signature of the Guide Mrs. Kavitha B Assistant Professor

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Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

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**EXTERNAL EXAMINATION** 

Name of the Examiners

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Principal

Sapthagiri College of Engineering 14/5, Chikkesandra, Hesaraghatta Mata Dad

Bengaluru - 560 05

Signature with Date

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Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057



### Department of Computer Science and Engineering

Accredited by NBA

### Certificate

This is to certify that the Mini Project Work entitled "Sailing Ship" carried out by NAVDEEP TANWAR (ISG19CS066) and RAHUL KUMAR (ISG19CS081), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha.K

Assistant Professor

Signature of the Guide Mrs. Kavitha.B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Sapthagiri College of Engineering

14/5, Chikkasandra, Hesaraghatta

Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
18O 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade
#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057



# Department of Computer Science and Engineering

Accredited by NBA

## Certificate

This is to certify that the Mini Project Work entitled "Sailing Ship" carried out by NAVDEEP TANWAR (ISG19CS066) and RAHUL KUMAR (ISG19CS081), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobba.K Assistant Professor Signature of the Guide Mrs. Kavitha.B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

hobbart

Signature with Date

19552

(Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Visualization of Rain Water collection using Open KATTIMANI(1SG19CS075) PRABHAKAR BHIMANNA carried by GL" out PRAMOD(1SG19CS076), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K **Assistant Professor** 

Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

1. Chartha 2. Shobha, r

Signature with Date

Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Maln Road Bengaluru - 560 057

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, Accredited by NBA #14/5, Chikkasandra, Hesaraghatta Main Road, Bengalura-560057

### Department of Computer Science and Engineering

ACCREDITED BY NBA



This is to certify that the Mini Project Work entitled "CLIENT-SERVER COMMUNICETION" carried out by PRANSHI PRIVANM (18G19CS078), PRIVESH RAJ (18G19CS080) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha,K Assistant Professor

Signature of the Guide Mrs. Kavitha.B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

1. Chartha 2. Shobbark

Signature with Date

Principal

14/5, Chikkasandra, Hesaraghatta Main Road

(Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

## Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "SPACESHUTTLE 3D MODEL" carried out by RAJAT YADAV (1SG19CS082), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of Computer Graphics Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K **Assistant Professor** 

Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

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EXTERNAL EXAMINATION

Name of the Examiners

1. Shobher K

Signature with Date

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road Bengaluru - 580 057

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
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#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

## Department of Computer Science and Engineering



This is to certify that the Mini Project Work entitled "Flowing Fountain using OpenGL" carried out by SHUBHAM RAJ (18G19CS101), SUBHANSHU JHA (18G19CS109) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Associate Professor Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

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**EXTERNAL EXAMINATION** 

Name of the Examiners

Signature with Date

1. Charles 2. Chobba. K

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 580 057

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
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#14/5, Chikkasandra, Hesaraghatta Main Road,
Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Crow Story Animation" carried out by MUDEGOWDAR VINAY (ISG18CS058), PRAJWAL P (ISG18CS071), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shoba K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor Signature of the HOD

Dr. Kamalakshi Naganna

Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chartha 2. Shobha. K

Principal
Sapthagiri College of Engineerik
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

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(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



"Railway Station Scenario" carried out by Mini Project Work entitled This is to certify that the VIDYASHREE S(1SG19CS121) and THEJASHREE B P(1SG19CS114) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

autha

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

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**EXTERNAL EXAMINATION** 

Name of the Examiners

Signature with Date

Charles

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hesarachast Bengaluru - 58

(Affiliated to VTU, Belagavi Approved by AICTE, New Delhi.)
ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade,
#14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Parachute Application using Open GL" carried out by HARSHITHA M H (1SG20CS406), NANDINI N(1SG20CS408) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University. Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

Signature with Date

0 11 4

1. Shobher K 2. Charlton

Principal

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, New York

23/122

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.)
ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, Accredited by NBA #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Lunar Phases Of Moon using Open GL" carried out SANCHANA HT (ISG19CS090) and SANCHITHA K(ISG19CS091), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSMP68) prescribed for the said Degree.

Signapure of the Guide Prof. Shobha K Assistant Professor

Signature of the Guide Prof. Kavitha B Assistant Professor

les 15/07/2002 Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Chaittra Shobha, K

Sapthagiri College of Engineering

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "CITY TIMELAPSE" carried out by SHIV PRASAD(1SG19CS097) & SUNIL A(1SG19CS110), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Signature of the Guide Mrs. Kavitha B Assistant Professor

els 19 02 202 Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

**EXTERNAL EXAMINATION** 

Name of the Examiners

Chaldre b

Signature with Date

Principal

Saathagiri College of Engineerin 14/5, Chikkasandra, Hesaraghatta Main Rd Bengaluru - 560 057

Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road. Bengaluru-560057

## Department of Computer Science and Engineering

(Accredited by NBA)



## Certificate

This is to certify that the Mini Project Work entitled "Airplane crashing using Open GL" carried out by sneha N(18G19C8103), Sandhya S(18G19C8092) bonafide students of Sapthagiri College of Engineering, n partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2020-2021. It s certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (1805) 67 prescribed for the said Degree.

Signature of the Guide Mrs. Shohha K sistant Professor

Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HO Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal Sapthagiri College of Engineering Z 14/5, Chikkasandra, Hesaraghatta Mein Road Bengaluru - 560 052

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057



### Department of Computer Science and Engineering

(Accredited by NBA)

### Certificate

This is to certify that the Mini Project Work entitled "EDUCATION SYSTEM USING OPENGL" carried out by SUSHIL KUMAR G N (ISG19CS112) AND VARUN S RAJU (ISG19CS119), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

1. <u>Charltier</u> 2. <u>Shobha</u> K

Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Maha Panad

Bangaluru - 560 05

Signature with Date

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#### Department of Computer Science and Engineering

(Accredited by NBA)



This is to certify that the Mini Project Work entitled "Rocket Launch With Satellite Using Open GL" carried out by MUSKAN (ISGI9CS064) & SAHITYA MODI (ISGI9CS088), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor Signature of the Guide Mrs. Kavitha B Assistant Professor Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Charthan 2. Shobha 10

Sapthagiri College of Engineering

Bengaluca - Sec. 657

(Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi.) ISO 9801-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057



## Department of Computer Science and Engineering

(Accredited by NBA)

## Certificate

This is to certify that the Mini Project Work entitled "ANALOG AND DIGITAL CLOCK" carried out by SANTHOSH K (1SG19CS094), bonafide student of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K **Assistant Professor** 

Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Principal Sapthagiri College of Engineering

14/5, Chikkasandra, Hesaraghatta Maln Bengaluru - 560 057

(Affiliated to VTU, Belagavi & Approved to AICTE, New Delhi) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057

Department of Computer Science and Engineering



# Certificate

This is to certify that the Mini Project Work entitled "City Real Life Simulation Using OpenGL" carried out by SAMBRAM SHETTY (ISG19CS089) & SRIRAM MISHRA H K (ISG19CS105), bonafide students of Sapthagiri College of Engineering, in partial fulfilment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shoba K **Assistant Professor** 

Signature of the Guide Mrs. Kavitha B **Assistant Professor** 

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Signature of the HOD Dr. Kamlakshi Naganna Professor & Head

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#### EXTERNAL EXAMINATION

Name of the Examiners

Signature of the Examiners

1. Chaittra

Principal

apthagiri College of Engineering 14/5, Chikkasandra, Hesam-Bengaluru - 500

Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade #14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

# Department of Computer Science and Engineering

(Accredited by NBA)



### Certificate

This is to certify that the Mini Project Work entitled "Airplane crashing using Open GL" carried out by Sneha N(18G19CS103), Sandhya S(18G19CS092) bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2020-2021. It is certified that all corrections/suggestions indicated have been incorporated in the report. The mini project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor& Head

EXTERNAL EXAMINATION

Name of the Examiners

Chailtma Shohkon k

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road

(Affiliated to VTU, Belagavi& Approved by AICTE, New Delhi.) ISO 9001-2015 & 14001-2015 Certified, Accredited by NAAC with 'A' Grade, #14/5, Chikkasandra, Hesaraghatta Main Road Bangalore-560057



### Department of Computer Science and Engineering

(Accredited by NBA)

### Certificate

This is to certify that the Mini Project Work entitled "AQUARIUM" carried out by SHEKHAR ( 15(,19(,50%), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Buchelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CS1.67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Signature of the Guide Mrs. Kavitha B Assistant Professor

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

1. Charles 2. Shobba K

Principal Sapthagiri College of Engineering

14/5, Chikkasandra, Hasar Bengalutu - .

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#### Department of Computer Science and Engineering

(Accredited by NBA)

### Certificate

This is to certify that the Mini Project Work entitled "RAIN SNOW AND HAIL EFFECTS" carried out by RAKSHITH K PANCHALINGALU (ISG19CS084), RITHVIK PRASHANTH (ISG19CS085), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022. It is certified that all corrections/suggestions indicated have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of CG Laboratory with Mini Project (18CSL67) prescribed for the said Degree.

Signature of the Guide Mrs. Shobha K Assistant Professor

Mrs. Kavitha B **Assistant Professor** 

Signature of the HOD Dr. Kamalakshi Naganna Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners

Signature with Date

Charles Chooking R

Principal

Sapthagiri College of Engineering