Karnataka State Council for Science and Technology

Indian Institute of Science Campus, Bengaluru - 560 012

Telephone: 080-23341652, 23348848, 23348849 ♦ Telefax: 080-23348840

Email: office@kscst.iisc.ernet.in, office@kscst.org.in ♦ Website: www.kscst.iisc.ernet.in, www.kscst.org.in

Dr. S. G. Sreekanteswara Swamy
Executive Secretary

28th March 2018

Ref: 7.1.01/SPP/08

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

Dear Sir,

Sub : Sanction of Student Project - 41st Series: Year 2017-2018
Your Project Proposal Reference No. : 41S_BE_2106

Ref : Your Project Proposal entitled " **REAL TIME FREE PARKING SLOTS TRACKING USING IoT TECHNOLOGY**

I am happy to inform that your project proposal referred above, has been approved by the Secretary, KSCST for "Student Project Programme - 41st Series" and has been sanctioned with a budgetary break-up as detailed below:

Student / s	Ms. Neetha Pal K and others	**Budget**	**Amount (Rs)**
		Materials/Consumables	3,500.00
Guide/s	Prof. Prerana Chaithra	Labor	-
		Travel	-
Department	Information Science And Engineering	Miscellaneous	500.00
		Report	500.00
		TOTAL	4,500.00
	RUPEES FOUR THOUSAND FIVE HUNDRED		

The following are the guidelines to carryout the project work :

a) The project should be performed based on the objectives of the proposal sent by you.

b) The project should be completed in all respects and one copy of the hardbound report along with softcopy of the full report in a CD (.pdf format) should be submitted to KSCST.

c) Any change in the project title and objectives, etc., or students is liable to rejection of the project and the amount sanctioned needs to be returned to KSCST.

d) Please quote your **project sanction reference number printed above** in all your future correspondences.

e) **Important:** After completing the project, 2 to 3 page write-up (synopsis) needs to be sent by e-mail [spp@kscst.iisc.ernet.in] and should include following :

1) Title of the project
2) Name of the College & Department
3) Name of the students & Guide(s)
4) Keywords

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6) Introduction / background
(with specific reference to the project, work done earlier, etc) - about 20 lines

6) Objectives (about 10 lines)
7) Methodology (about 20 lines)
(materials, methods, details of work carried out, including drawings, diagrams etc)
8) Results and Conclusions
(about 20 lines with specific reference to work carried out)
9) Scope for future work (about 20 lines).

(Note: The write-up (Synopsis) should be sent with the approval of project guide. The softcopy of the write-up, in MS Word format, should be sent by e-mail (spp@kscst.iisc.ernet.in). In your e-mail, please also include project proposal reference number and title of the project.)

e) Projects selected for Seminar / Exhibition will be awarded.

The sanctioned amount will be sent separately by our Accounts Department.

The sponsored projects evaluation will be held in the Nodal Centre and the details of the nodal centre will be intimated shortly by e-mail / Website announcement.

Please visit our website for further announcements / information and for any clarifications please email to spp@kscst.iisc.ernet.in

Thanking you and with best regards,

Yours sincerely,

(S.G.S. Swamy)

Prof. Prerana Chaitra, 15
23/4/18

Copy to:

1) The Head of the Department of
Information Science And Engineering
Sapthagiri College Of Engineering,
#14/5, Chickasandra,
Hesaraghatta Main Road,
Bengaluru – 560 057.

2) Prof. Prerana Chaithra
Department of Information Science And Engineering
Sapthagiri College Of Engineering,
#14/5, Chickasandra,
Hesaraghatta Main Road,
Bengaluru – 560 057.

3) The Finance Officer, KSCST, Bangalore

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2017-18

KSCST

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

Indian Institute of Science campus, Bengaluru

FORMAT FOR STUDENT PROJECT PROPOSAL FOR OF STUDENT PROJECT PROGRAMME

(Hand written proposals will not be accepted, please fill all the details in this MS word file as per the following format. Kindly take a photocopy of completely filled project proposal and Demand Draft for filling up the Google Forms.)

Stream A

1.	**Name of the College : SAPTHAGIRI COLLEGE OF ENGINEERING**
2.	**Project Title : Real time free parking slots tracking using IoT technology**
3.	**Branch: Information Science & Engineering**
4.	**Theme (as per KSCST poster) : SPP**
5.	**Name(s) of project guide(s) :** **1. Name: Prof. Prerana Chaithra** **Email id : preranachaithra15@gmail.com** **Contact No.: 9886715998**
6.	**Name of Team Members (Strictly not more than four students in a batch):** (Please paste the latest passport size photograph adjacent to your respective names) **Name: Neeta Pai K** **USN No.:1SG14IS054** **Name: Ankita Ganapati Bhat** **USN No.:1SG14IS009** **Name: Anusha S** **USN No.:1SG14IS012**
7.	**Team Leader of the Project :** **Name: Neeta Pai K** **USN No.:1SG14IS054**
8.	**Processing Fee Details (Demand Draft should be drawn from Canara Bank / State Bank of India only):** **(processing fee of Rs. 1000/- drawn in favour of Secretary, KSCST, Bangalore – 12)** **Bank name:** **Note :**Please write Team leader name, Project Title and Name of the College on the backside of the DD.

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9.	**Date of commencement of the Project : 15/02/2018**
10.	**Probable date of completion of the project : 20/05/2018**
11.	**Scope / Objectives of the project:** 1. To create flawless parking management system 2. To solve the parking problem by using automated parking system
12.	**Methodology:** 1) Understood the domain first **2)** Embedded C is used for implementation
13.	**Expected Outcome of the project :** Gives the idea interfacing to Wifi module Improve parking facilities of metropolitan cities
14.	**Is the project proposed relevant to the Industry or Institution? :** **Yes / No : no** **If Yes, Please provide details of the Industry / institution and contact details :** **(Note:** Preference will be given to those projects relevant to the industry / institution. Hence be specific in giving detailed information). Is the industry extending support - technology / funds / use the final product, please specify.
15.	**Can the product or process developed in the project be taken up for filing a Patent?** **Yes / No : no** **Prior Art search done?** **Yes/No :** **Note:** If Yes, you may contact Patent Information Centre of KSCST for more details Email : patent@kscst.iisc.ernet.in`
16.	**Budget details (break-up details should be given) :**

Budget	Amount
a) Materials / Consumables	4500.00
b) Labor	0.00

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		c) Travel	0.00
		d) Report	0.00
		e) Miscellaneous	0.0
		Total	4500.00
17.	**Any other technical details (Please specify) :**		
18.	**SPP Coordinator (Identified by the college) :** **Note:**To be identified by the principal of the institution. The project proposals must be submitted to KSCST through SPP coordinator designated by the Principal. **Name: Prof. Ravishankar M N** **Email id : ravishankarmn@sapthagiri.edu.in** **Contact No.: 9916592006**		

(Name &Signature of Project Guide with Seal)
Prof.Prerana Chaithra

(Name &Signature of HOD with Seal)
Dr. H R Ranganatha

Dr H.R. Ranganatha
Prof. & H.O.D
Dept.of Information Science & Engg.
Sapthagiri College of Engineering
14/5 Chikkasandra, Hesaraghatta Main Road
BENGALURU-560 057

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"REAL TIME FREE PARKING SLOTS TRACKING USING IoT TECHNOLOGY"

SAPTHAGIRI COLLEGE OF ENGINEERING

INFORMATION SCIENCE AND ENGINEERING

REFERENCE NO.:41S_BE_2106

GROUP MEMBERS:

NAME	USN	E-mail ID	Phone No.
NEETHA PAI K.	1SG14IS054	neethapai65@gmail.com	8152942188
ANKITA GANAPATI BHAT	1SG14IS009	ankitabhat878@gmail.com	7760508612
ANUSHA S.	1SG14IS012	anurao096@gmail.com	9740367241

GUIDE DETAILS:

Prof. PRERANA CHAITHRA

Associate Professor

Information Science and Engineering

9886715998

preranachaithra15@gmail.com

KEYWORDS: Internet of Things, IR Proximity Sensors, Arduino UNO, ESP8266 Wi-Fi Chip, LED, AWS Technology

INTRODUCTION:

Consistent efforts are being made in the field of IoT in order to maximize the productivity and reliability of urban infrastructure. Problems such as, traffic congestion, limited car parking facilities and road safety are being addressed by IoT. Finding a parking space in most metropolitan areas, especially during the rush hours, is difficult for drivers. The difficulty arises from not knowing where the available spaces may be at that time: even if known, many vehicles may pursue very limited parking spaces to cause serious traffic congestion. This project presents a customized design of an Internet of Things (IoT) enabled parking system to solve the parking problem in city. A real time web link is provided that allows an end user to check the availability of parking space.

OBJECTIVES:

- To create a flawless parking management system with the help of sensor systems and IoT technology.
- To solve the parking problem by using an automated parking system.

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- To inform the drivers in advance about the availability of parking spaces at and around their intended destination.
- To facilitate effective utilization of resources.
- To provide better quality of services for parking vehicles.

METHODOLOGY:

- We understood the domain first
- Literature survey was conducted
- System architecture used is Event Driven architecture
- System design and detailed system design were done
- Embedded C was used for implementation
- Testing was done (unit test, integration and system tests)

Details are as follows:

MODULES :

1.IR Proximity SensorA proximity sensor is a sensor that emits infrared radiation which is able to detect the presence of the nearby objects without any physical contact.The IR Proximity sensors sense the presence or absence of vehicles and sends this data to the Arduino board.

2.Arduino UNO Arduino UNO is a widely used open source microcontroller board based on the ATmega328 microcontroller.Arduino board processes the data and sends the result as the status of individual parking slots to the WiFi microchip.

3.ESP8266 Wi-Fi Module ESP8266 is a low cost Wi-Fi microchip with full TCP/IP stacks and microcontroller capability.The WiFi microchip uses the data connection from the WiFi router and sends the final result of the availability of parking slot to the Amazon Cloud Server.

4.Amazon Cloud Server Amazon Web Services (AWS) is a subsidiary of Amazon.com that provides on-demand cloud computing platforms to individuals, companies and governments, on a paid subscription basis. The user gets the real time information from the this cloud server.

We have worked on system design and detailed design by knowing main userdefined functions, packages used and built in functions.

We also have refered paper such as:

AbhirupKhanna-IOT based smart parking system-----Recent times the concept of smart cities have gained grate popularity. In 2016.

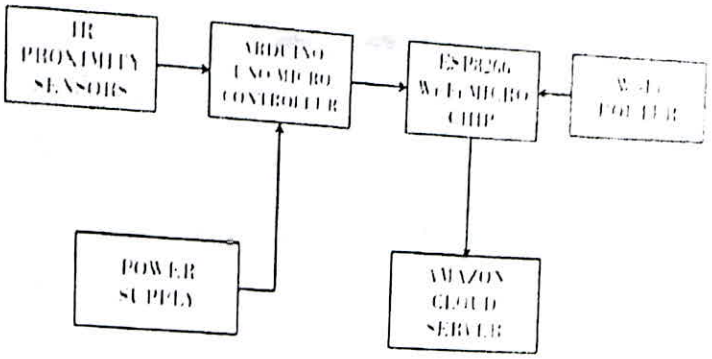
Mr. Basavaraju S R ,'Carmatic Smart Parking System using IoT '.in 2015

D. J. Bonde "Carmated car parking system commanded by android application" Jan-2012,pp 79-92.

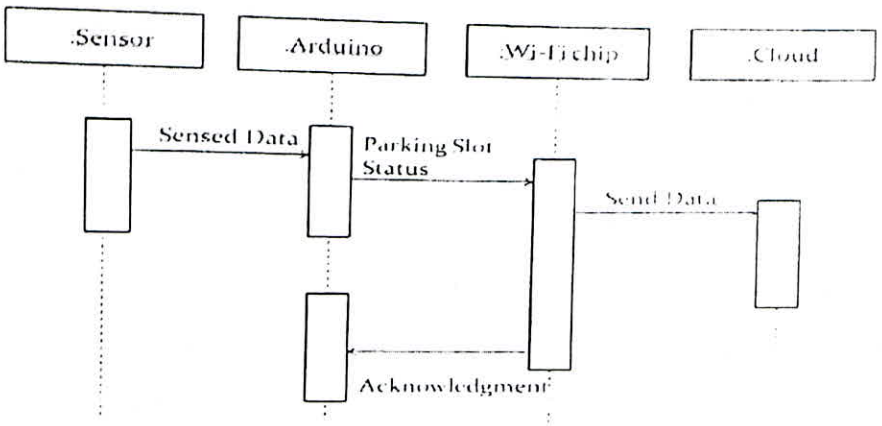
M.A.R. Sarkar, A.A. Rokoni, M.O. Reza, M.F. Ismail, "Smart Parking system with image processing facility", I.J. Intelligent Systems and Applications, 2012, vol. 3, pp. 41-47.

DIAGRAMS:

SYSTEM DESIGN:



SEQUENCE DIAGRAM:



RESULT AND CONCLUSION:

This project gives the idea of interfacing to Wi-Fi module which sends the data to internet cloud and we can see the real-time parking data using web link generated from cloud. The proposed system provides real time information regarding availability of parking slots in a parking area. Users from remote locations could track the free parking slot by the use of mobile application. This paper is indented to improve the parking facilities of metropolitan cities and thereby aiming to enhance the quality of life of people. Based on the simulation study, we conclude that the proposed real time parking system can reduce the traffic congestion and noise pollution at the parking area.

FUTURESCOPE:

- An android application can be developed with parking reservation system using the parking slots real-time information.
- Online booking of parking slots can be facilitated.
- It could be scalable for more number of parking slots.
- In large scale, RFID technology can be used for wireless connection of components.

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We request you to please furnish the following details to Dr. B.E. Rangaswamy, Dean, R&D and Professor & HoD, Dept. of Biotechnology (Contact No.: 9844622611 and Email: biet41ksest@gmail.com) Registration Committee Coordinator Dr. Poornima B., HoD, Dept. of Information Science and Engineering (Contact No.: 9844756458 and Email: poornimateju@gmail.com), Mr. Patil N.S. and (Contact No.: 9886840401 and Email: patilbathi@gmail.com) and Mrs. Shilpa M. Yadawad (Contact No. 9916570350 and Email-id: shilpamy07@gmail.com) Department of Information Science and Engineering of Bapuji Institute of Engineering and Technology (not later than **20th of July 2018**).

- Number of persons participating in the Seminar and Exhibition with their title of project, name of student, name of the Project Guide, Department, schedule of Travel etc., (i.e., date and time of arrival at Davanagere).
- Power, water, space and other requirements for the exhibits.
- Area required for displaying your project, charts and photographs.
- Area required for model exhibits.
- Accommodation facilities required for the faculty and students.
- Arrangements and help required for handling of exhibits.
- Any other specific requirement in connection with Exhibition.

Kindly ensure that the exhibits are installed in the stalls allotted to you well in advance i.e., before 6.00pm of 9th of August 2018 or before 9.00am on 10th August 2018.

For project related queries, you may please contact Mr. Keshava K. N., Project Associate, KSCST, 080-23600978, 9731282977.

Please ensure that the synopsis of the projects (softcopy), as per the format given in project sanction letter (in MS-Word), are sent to spp@kscst.iisc.ernet.in. Further, we also request you to send the hard copy of the project reports along with softcopy of the full report in a CD (PDF format) immediately.

Details of the programme and invitation will be sent to you shortly.

Thanking you and with best regards,

Yours Sincerely,

(S.G.S. Swamy)

Encl: List of Projects selected from your college.

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KSCST PROJECTS

UTILIZATION CERTIFICATE

KSCST Student project program 41st series- 2017-18

Sl No	Title of the project	Amount	Certified that KSCST has provided partial financial support of **RS 29,000/-** towards Biofuel and SPP student project program 41st series Sum of Rs**29,000/-** only has been utilize for the purpose Biofuel and SPP student project program for which it was sanction
1	Investigation on Performance and pollution level on n-butanol blended petrol fuelled IC engine (10% to 50% blending)	11000/-	
2	Real time free parking slots tracking using IOT technology	4500/-	
3	Women Security System	5000/-	
4	Design and Lab scale ultrasound batch reactor for the production of biodiesel from the slaughter waste	8500/-	

Certified that I have satisfied myself that condition on which the grant in aid sanctioned has been duly/are be fulfilled and that I have excise the following check to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of check exercised

1. Cash book
2. Vouchers

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Sl. No	Project proposal ref no	Title of the project	Dept./Guide	Amount Sanction by KSCST	Amount utilized by the college	Balance if any to be refunded to KSCST
1	41S_B_BE_062	Investigation on Performance and pollution level on n-butanol blended petrol fuelled IC engine (10% to 50% blending)	ME/ Prof. Raghuthama Rao	11000/-	11000/-	0
2	41S_B_BE_2016	Real time free parking slots tracking using IOT technology	ISE/ Prof. Prerana Chaitra	4500/-	4500/-	0
3	41S_B_BE_0470	Women Security System	EC/ Dr. Ashwatha Kumar S	5000/-	12,000	0
4	41S_B_BE_076	Design and Lab scale ultrasound batch reactor for the production of biodiesel from the slaughter waste	BT/ Prof. Kavya V M Prof. Shobha G Prof. Soumya C	8500/-	8,500/-	0

MAS & CO. CHARTERED ACCOUNTANTS VERIFIED BANGALORE 26/2/20

Signature of the Principal with seal

Date:

Signature of Auditor with seal

Date:

Principal
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Bangalore-560 057

KSCST PROJECTS

UTILIZATION CERTIFICATE