SAPTHAGIRICOLLEGE OF ENGINEERING

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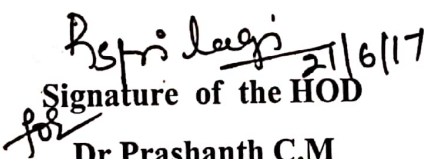## Department of Computer Science and Engineering

Certificate

Certified that the project work entitled "A New Approach for Transactions in a NoSQL Cloud Database System called M-Key Transaction Model" carried out by **Shreenivas S Govindaraja (1SG11CS077), Sridhar V Deshpande(1SG11CS082), Sangayya P Hiremath(1SG13CS413), Vinay P Bankapur(1SG11CS094),** bonafide students of **this institute,** in partial fulfillment for the award of **Bachelor of Engineering** in **Computer Science and Engineering** of **Visvesvaraya Technological University, Belgaum** during the academic year **2016-17.** It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project progress report has been approved as it satisfies the academic requirements in respect of Project work (10CS85 prescribed for the said degree.

Signature of the Guide

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Assistant Professor

Signature of the HOD

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ABSTRACT

A NoSQL cloud database system that is built across thousands of cloud nodes and capable of storing and processing of Big Data. NoSQL systems have rapidly been used in large scale applications that need high accessibility and efficiency but with weaker constancy. In contrast, such systems lack support for standard transactions which provide stronger constancy. Our project proposes a new multi-key transactional model which provides a NoSQL system with standard transaction support and stronger level of data integrity. The strategy is to substitute current NoSQL architecture with an extra layer that manages transactions. This proposed model is configurable where constancy, availability and efficiency can be adjusted based on application requirements. Our proposed model is validated through a prototype system using CouchDB. The design of a new Multi-Key transaction model for NoSQL systems that maintains consistency and durability properties of transactions in order to ensure stronger constancy and development of a loosely-coupled architecture that separates the transactional logic from underlying data thus ensures transparency and abstraction. The prototype system is developed using real NoSQL system, CouchDB, which is evaluated using the YCSB+T(Yahoo! Cloud Servir Benchmark) benchmark.