VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

A PROJECT REPORT ON

M2M: A SIMPLE MATLAB-TO-MAPREDUCE TRANSLATOR FOR BIG-DATA

SUBMITTED IN PARTIAL FULFILLMENT FOR THE AWARD OF DEGREE OF,

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE AND ENGINEERING

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CERTIFICATE

This is to certify that the Project entitled "M2M: A Simple Matlab-to-MapReduce Translator for Big-Data" has been successfully completed by

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the bonafide students of Department of Information Science and Engineering, Alva's Institute of Engineering and Technology in partial fulfilment for the award of BACHELOR OF ENGINEERING in DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING affiliated by VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the year 2015–2016. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

18/04/16 | 18/4 |

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ABSTRACT

Matlab is a high level language. It has numerous built-in commands and math functions. Commands help in mathematical calculations and performing numerical methods. MapReduce is a popular parallel model first introduced by Goov. MapReduce is used to process large amount of data. It is a popular parallel model. It has got two major parts Map and Reduce. MapReduce is a very popular parallel programming model for Big Data platforms, and has become an effective method for processing massive data by using a cluster of computers.

X-to-MapReduce (X is a programming language) translator is a possible solution to help traditional programmers easily deploy an application to systems in which Hadoop resides, through translating sequential codes to MapReduce codes. Recently, some SQL-to-MapReduce translators emerge to translate SQL-like queries to MapReduce codes and have good performance in systems which Hadoop resides. However, SQL-to-MapReduce translators mainly focus on SQL-like queries, but not on numerical computation.

Matlab is a high-level language and interactive environment for numerical computation, visualization, and programming, which is very popular in engineering. The proposed system is to develop a simple Matlab-to-MapReduce translator for Big Data, called M2M, for basic numerical computations. M2M can translate a Matlab code with up to 100 commands to MapReduce code in few seconds, which may cost a proficient Hadoop MapReduce programmer some days on coding so many commands. In addition, M2M can also recognize the dependency between complex commands, which is always confusing during hand coding. We implemented M2M with evaluation for Matlab commands on a cluster.