VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590 018

A CG Mini-Project Report
On

"SIMULTANEOUS LOCALIZATION AND MAPPING"

Submitted in partial fulfillment of the requirements for the 6th semester of
Bachelor of Engineering in Computer Science and Engineering
of Visvesvaraya Technological University, Belagavi

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

Certified that the mini project work entitled **"SIMULTANEOUS LOCALIZATION AND MAPPING"** has been successfully carried out by **SAGNIK DAS** bearing USN **1RN16CS086** and **YASH VORA** bearing USN **1RN16C123** bonafide students of **RNS Institute of Technology** in partial fulfillment of the requirements for the **6th semester** of **Bachelor of Engineering** in **Computer Science and Engineering** of **Visvesvaraya Technological University**, Belgaum, during academic year 2018-2019. 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 CG laboratory requirements of 6th semester BE, CSE.

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Name of the Examiners **Signature with Date**

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ACKNOWLEDGMENT

Any achievement, be it scholastic or otherwise does not depend solely on the individual efforts but on the guidance, encouragement and cooperation of intellectuals, elders and friends. A number of personalities, in their own capacities have helped us in carrying out this project work. We would like to take this opportunity to thank them all.

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Date :

Place : Bangalore

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ABSTRACT

The main aim is to understand the key ideas and Implementation of Computer Graphics using OpenGL for representing “SIMULTANEOUS LOCALIZATION AND MAPPING”. It is necessary to display the object in the user’s point of view. The aim is to draw attention of users toward computer graphics. It can be used to show how efficient this particular software is. To display the motion view of the objective.

This project aims to demonstrate SLAM algorithm used in autonomous vehicles using OpenGL. Trajectory shows the trajectory of the autonomous vehicle in world-coordinate system. There are 4 menu options. For selecting Trajectory, Interest Points Interest Lines and Quit option. The Interest Points takes point coordinated and plots them on the map. The Draw Interest Lines options draws a line from vehicle’s origin to respective Interest Points. The benefits of the project are Simplicity, Usability and Flexibility.

The applications of the project are that the project has the strength to generate 3D-Map for given the vehicle position and observed landmarks. The 3D-Map generated is dynamic in nature and can simulate actions of SLAM algorithm used on any vehicular model.

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