VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A COMPUTER GRAPHICS Mini Project Report

On

"SPACE INVADERS"

Submitted in Partial fulfillment of the Requirements for the VI semester of the Degree of

Bachelor of Engineering

In

Computer Science & Engineering

By

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

Certificate that the COMPUTER GRAPHICS Mini Project work entitled **"SPACE INVADERS"** has been carried out by **DEEPAK JADON(1CE19CS027)** and **FOZAIL AHMED(1CE19CS031),** bonafide students of City Engineering College in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum during the year **2021-2022**. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The COMPUTER GRAPHICS Mini Project Report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said Degree.

Nandini S B	**Dr. Sowmya Naik**	**Dr. Thippeswamy H N**
Prof, Dept. Of CSE	Head, Dept. Of CSE	Principal

External Viva

Name of the examiners	Signature with date
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ABSTRACT

We have developed a game known as “SPACE INVADERS” . The principle behind the working of the project is that, based on the Collision Detection. This is a game project, where there is a aircraft loaded with weapons. We make use of the gun to target the enemy before the heap crosses the safe line .Each shot with accuracy give the points to player. Score is displayed as well as overall high score .Game has different options to choose from like play, options, exit and choose the difficulty levels.

This project includes a dynamic star background which can be turned on/off in the options . The Object Theme where the user can choose how he can view the aircraft and enemy spaceships , the two object themes include solid polygons and hollow bright . These object themes are developed using OpenGL polygon functions to create the shapes of the aircraft and enemy spaceships .

The aircraft can be controlled using the left and right arrow keys to move about the screen , and the up arrow is used to shoot the enemy spaceships . The enemy spaceships has three health levels , red , green , yellow , and these health levels decrease on every accurate hit from our aircraft.

As the difficulty level is set by the user , factors like the health of our aircraft , strength of ray bullet , damage taken by enemy spaceships etc. is varied as we set the difficulty level . We can pause the game using the ESC key. The high score will be maintained on top of the screen , along with the wave count and accuracy parameter. While in game, on pressing F2 key we are able to obtain OpenGL information which includes graphics details and we can control the FPS.

We make use of C with OpenGl for entire coding purpose along with some features of Windows. The OpenGl Utility is a Programming Interface. The toolkit supports much functionality like multiple window rendering, callback event driven processing using sophisticated input devices etc.

ACKNOWLEDGEMENT

While presenting this COMPUTER GRAPHICS project on "**SPACE INVADERS",** we feel that it is our duty to acknowledge the help rendered to us by various persons.

Firstly we thank god for showering his blessings on us. We are grateful to our institution City Engineering College for providing us a congenial atmosphere to carry out the project successfully.

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Our hearty thanks to all those have contributed bits, bytes and words to accomplish this project.

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