"2D PATH FINDING GAME"

A PRE SYNOPSIS SUBMITTED TO

Department of Computer Science & Engineering
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(Affiliated to VTU, Belagavi)

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For the partial fulfillment of mini- project as part of Computer Graphics and Visualization Laboratory (17CSL68)

Under the guidance of

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Signature(s): Student 1:_____ Student 2:_____

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- **Objectives**
  - The aim of our mini project is to implement the path finding game. The Path finding game containing a rectangular maze of any shape and size in which the horizontal and vertical lines represent the walls of the maze. Maze can be implemented as in 2D, 3D or more higher dimensions. This game is very popular as puzzle solving. Hence it can be used as an effecting tool for logical reasoning and mental aptitude.
  - Our Project Title is "2D Path Finding Game". Under this Project Title, we are building a maze of any shape and size and search for a path through it. So, our goal is to create a Perfect Maze. More specifically, the maze we are building is a 2-Dimensional of fixed shape and size, in which the horizontal and vertical walls are connected in such a way, so that the point can move from given starting point to the ending point through the spaces formed by connecting walls, but point should never cross the wall.
- **Mechanism**
  - *Flow chart:*

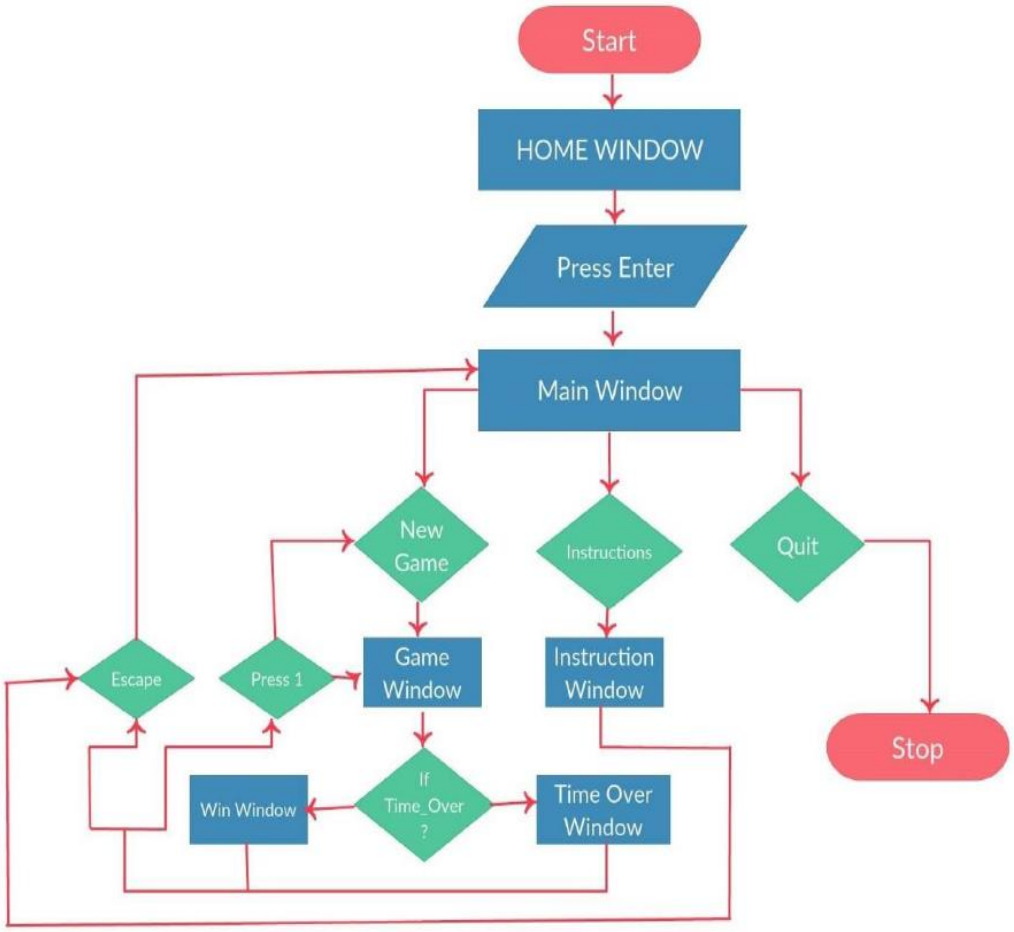

Fig 1: Flow Chart

- The main working of Path Finding Game is to find out the path from given place to another place by using the movement of point. We use the special key button for the movement of point. The left-key button is used for movement of point along the X-axis as the value decreases. The right-key button is used for movement of point along the X-axis as the value increases. The up-key button is used for movement of point along the Y-axis as the value increases. The down-key button is used for movement of point along the Y-axis as the value decreases. There is also be given the time limitation, so it is necessary to find out the path within a given time interval.

Hardware/ Software Configuration

- *PC/ Laptop configuration:*
  - System: Intel® Core ™ i5-8250U CPU @ 1.80GHz, 64 Bit-OS
  - Windows 7, 8 or 10
  - 8 GB RAM
  - Integrated graphics cards Intel HD 4000
- *Software used:* Dev-Cpp 5.11 TDM-GCC 4.9.2
- *Graphic Library:* Glut Library

Plan of action

- 19 March – Synopsis Submission
- 01 April to 02 April – Download and Install Dev-Cpp 5.11 Software and configure the libraries to C++ Project.
- 03 April to 07 April - Designing Welcome Window
- 08 April to 11 April - Designing Game Window
- 12 April to 21 April - Designing the Maze
- 22 April to 28 April - Movement of Pointer and Setting up Timer
- 29 April to 03 May - Implementing additional features.
- 04 May to 07 May - Checking for Bugs, Implementing Corrective Measures to remove them. Applying Final Modifications and Submission of Project.
- 08 May to 15 May - Report & Documentation

Expected outcome of the project and conclusion

- Able to implement a 2D Path Finding game with the help of openGL and glut Library.
- Able to implement a maze along with a pointer which can be controlled using various keyboard keys.
- Able to implement a countdown timer to make game more interesting.
- Enabled us to improve accuracy, problem solving skills while providing a fun and interactive experience to the player.
- Motivated us to create a platform which can be used as an effecting tool for logical reasoning and mental aptitude.
- Able to apply the concepts of computer graphics.
- Using OpenGL functions, user can create geometrical objects and can use translation, rotation, scaling with respect to the co-ordinate system.

- **References:**

1. Donald Hearn & Pauline Baker: Computer Graphics with OpenGL Version,3rd / 4th Edition, Pearson Education, 2011
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3. James F Kurose and Keith W Ross, Computer Networking, A Top-Down Approach, Sixth edition, Pearson,2017
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