Course Project Documentation
Project Report
INTERSTELLAR TIC TAC TOE

TEAM ID-390

SAIKIRAN BOBDE(Leader) :14D07002

SAILU GAINI :140110099

DIVANSHU PALIWAL :140040039

DEVENDRA MALAV :140110069

Submitted for CS 101 (Prof. KAVI ARYA)

Table of Contents

1.Introduction

1.1. Purpose of Document

The purpose of this document is to present a detailed description of the game Tic-Tac-Toe that our team made. The following sections of the document explain the purpose and features of the game, the interface of the game, and the constraints under which it must operate.

1.2. The Project

We have made a game which has 3 variants of Tic-Tac-Toe. Our game interstellar Tic-Tac-Toe stands out as a new game based on the original idea. Grids for the games are needed and the space to be marked is decided by the user's mouse click.

1.3. Scope of Project

This game is meant for pure entertainment for people who enjoy playing mini-games and will attract more fans like people on the go. This game can be even made an online (free to try) in the future. It can be also replicated easily onto any mobile platform. For now it is employed as a PC mini-game. The Pool game has been there for years now but we made it a bit different by using simplecpp graphics introducing simple rules in the game

2.0. PROBLEM STATEMENT

The aim of the project is to code a user-friendly *Tic-Tac-Toe* using simplecpp graphics. The game contains 3 variants of tic-tac-toe with rules as follows:

These games is for two players, X and O, who take turns marking the empty spaces in given grids and x moves first. The player who succeeds in placing three respective marks in a horizontal, vertical, or diagonal row wins.

1. SIMPLE TTT -
   If any of X or O wins in given 3x3 grid he wins the game
2. ALPHA TTT -
   Game is played in 9×9 grid which is divided into 9 different 3×3 Grids IN WHICH RULES ARE SAME AS THAT IN SIMPLE TTT. When a player wins in a particular 3*3 grid, a bigger symbol (x or o)appears in that 3*3 grid and game is now also in 9 grids considering each grid as space.
3. INTERSTELLAR TTT -
   Game is played in 5 3x3grids. If in a particular 3*3 grid player wins, he gets a point and also gets a bonus move which he can make in any grid except the grid in which he won. At the end when no space is empty, the player with more point wins.

The Project is to be accomplished using Concepts of lectures like loop conditions, Arrays, and initCanvas features of SIMPLECPP.

3.Requirement Specifications

3.1Functional Requirements / Modules

Starting the game

1. Game starts upon clicking the executable equivalent file of the game.

2. Window appears with Title TICMANIA and shows the instructions for playing the game. There is also a button in the lower section of window which when clicked takes the user to the game window.

In game.

1. Using mouse the user will be able to make moves in the grids with the object of making a successful pattern competing with the other player.

3.2 Non-Functional Requirements

1. **General Guidelines:** Priority should be given to performance, adaptability, maintainability, and usability.

2. **Operating Constraints:** This program requires the simplecpp library to be present on the target machine and for the computer to have C++ Redistributable package in case of Windows and C++ Runtime Environment in case of Linux. Codeblocks compiler can work in both cases.

3. **Documentation:** The User Manual will be made for the application in addition to the INSTRUCTIONS shown on Main Window of the game.

4. **Portability:** The program will run on Windows 8 and Ubuntu.

5. **Reliability:** As the game is for pure recreation and involves no user data, reliability is of low importance.

6. **Deployment:** The game will be uploaded online in the form of a C++ executable file.

3.3 User Characteristics

The Player is expected to be literate in the computer basics and be able to use a keyboard or a mouse.

4.0. IMPLEMENTATION

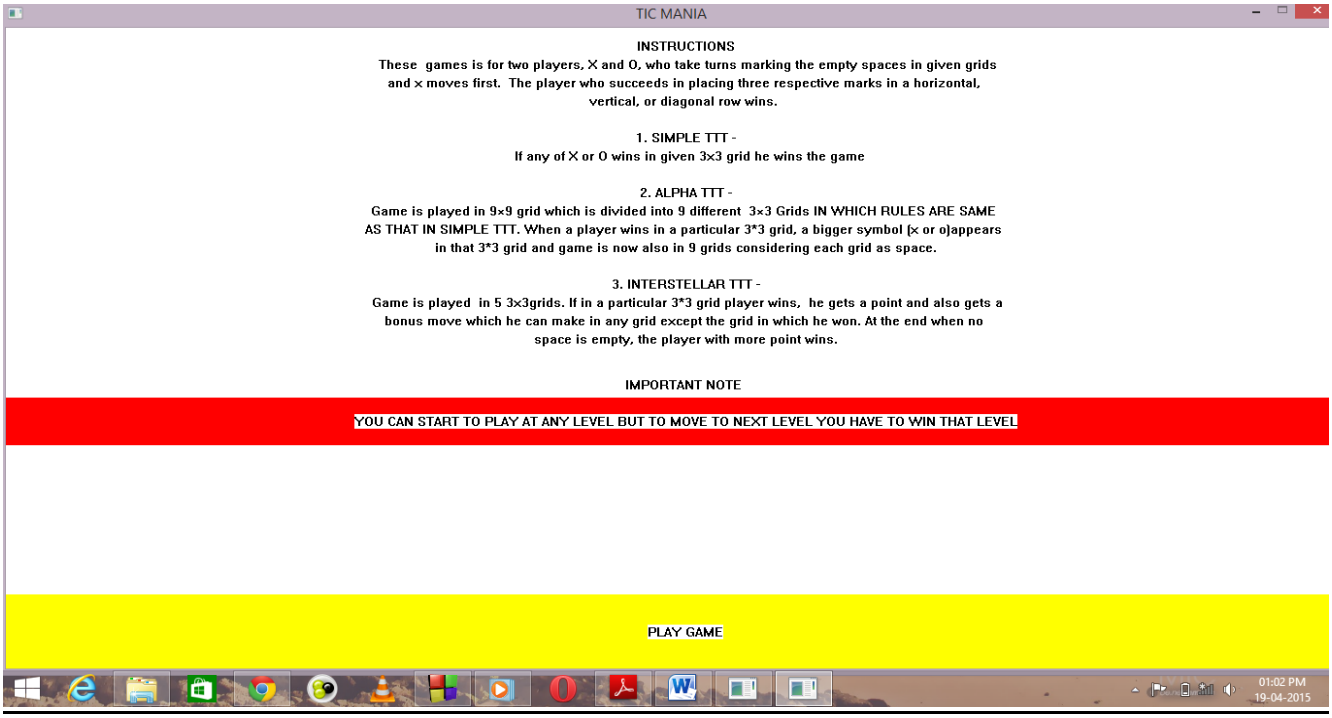
Starting from the beginning our first task we had to code for the grids of the 3 variants of Tic-Tac-Toe. We made the main window and displayed instructions in it with a button that takes user to the game window. Then the game window is divided into 3 parts using lines. Rightmost is level1 Simple Tic-Tac-Toe which has 3x3 grid , middle part has Level 2 Alpha Tic-Tac-Toe having 3x3 grid where each block is also a 3x3grid and the leftmost is Intersellar Tic-Tac-Toe which has 5 3x3 grids all these have been made by simple features of Canvas. The co-ordinates are taken by user's mouse click and used by various functions to give out sufficient data to be accessed for making marks and further for the algorithm of the games.The user has to play game level by level.

Everything else is just the basic Simplecpp Graphics.

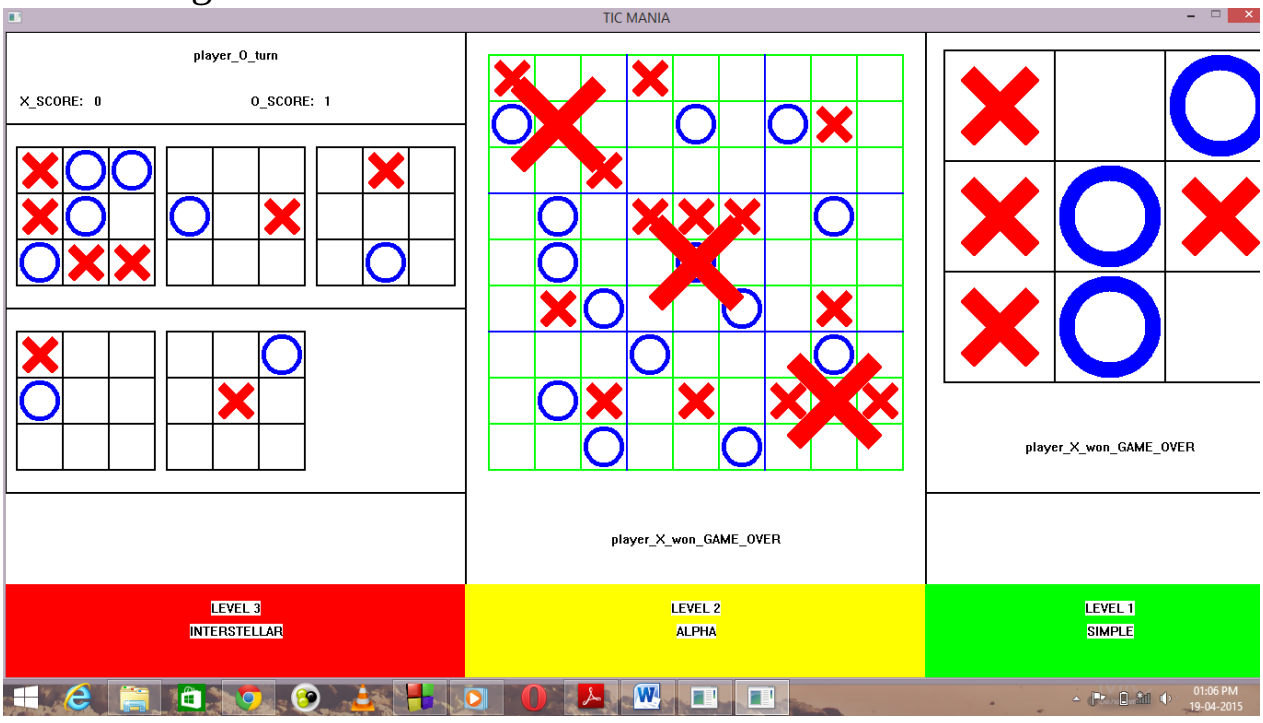
5.0 TESTING STRATEGY AND DATA.

This section contains test cases that have been done by developers. Objectives such as marking the empty spaces and correspondingly showing X and O as per user input along with notifying of invalid moves were tested in canvas window.

This is main window on next page



This is the game window



6.0. DISCUSSION OF SYSTEM

6.1. Work as per plan

We have made slight changes in contrast to the SRS. The difference from SRS is that we have dropped the idea of multiple windows in Interstellar but to compensate it we added two more variants of Tic-Tac–Toe.
The project is completed using simplecpp library and graphics as promised.

6.2. Features more than mentioned in SRS

We have added two more variants of Tic-Tac–Toe which are displayed on the game canvas window simultaneously with the interstellar Tic-Tac–Toe.

6.3. Changes in plan

We planned to make interstellar with multiple window each showing different grids but we faced numerous problems in this and also our TA asked us to add more variants we dropped this idea and made the 5 grids in the same window, the rules being the same.
We have successfully completed our project using simplecpp library and graphics.

7.0. FUTURE PROSPECTS.

After the completion of the product, various errors may be reported by the users. Post-production stage will thus involve maintaining the product for a certain period of times. Fixes to errors in the form of updates will be issued and will be available on a suitable website. The mini-game can also be ported as a mobile game and made available on tablets after suitable changes are made for increased adaptability. Changes for the pc game involves implementing 3D graphics and sound. More versions of this game can be developed to maintain the essence of this interesting game, as it has been a memorable part of our childhood.

8.0. CONCLUSION

Ours was a relatively simple project with nice applications of the taught topics in the course CS-101 .We have come up with correct usage of functions ,arrays, loop conditions and made the most out of the simplecpp graphics. Concluding, it was enjoyment to work on such a nice project and the project helped learn a lot and apply practically what was taught. Thank you KAVI ARYA sir in encouraging us to do a project. And my sincere thanks to our TA-UTKARSH KUMAR in providing us a great support.

9. REFERENCES

- An Introduction to Programming through C++, McGraw Hill Education, 2014, by Prof. Abhiram Ranade
- Lecture slides