**Jake Burke Milestone Report**

**Abstract:**

For my Java project I will be recreating the Game Tic-Tac-Toe in Java. Tic-Tac-Toe is normally played on a piece of paper with a pen or pencil. In this project I will be using multiple classes and methods to create the best Java Tic-Tac-Toe game I can code.

**Introduction:**

When I first read the project specifications, I knew I wanted to create a game for everyone to play. I took a few days and came up with the idea of Tic-Tac-Toe. The game of Tic-Tac-Toe goes all the way back to the Roman empire, the game was called Terni Lapilli. In order to win this game, you need to get three pieces in a row which is the same thing as modern-day Tic-Tac-Toe. After doing some more research I found out that that there have been multiple versions of Tic-tac-Toe created throughout history and throughout multiple countries. Some of these games were called Three Men’s Morris, Nine Men’s Morris, Pente, Gomoku, Qubic and many more. In order to win these games, you had to get a certain amount in a row. After doing my research I knew I wanted to make this game in Java. Soon after, I started to lay out how I will create my game. I knew I would need some type of board, a player1 and player2, a way to make a mark and ask for user input, somehow to check the rows, a way to print the board and lastly a way to find out who won or if there was a tie. Besides the normal concept of the game I decided that I wanted to take one step farther and implement personal customization to your mark and even what type of board you want to use. In today’s society personal customization is key to success.

**Detailed System Description:**

The code for the Tic-Tac-Toe game is fairly simple but has many parts to it which makes it complicated at times. So far, I have the main part of the game complete and I am still working on how to add extra customization. The game has a main class that starts the game, and the allows the first player to choose a location. It also checks if that spot is available. The game plays out and then check if someone is the winner or a tie. The game class is where most of the complicated coding comes in. This class initializes the game and checks if the spot you choose is available. It also has the code to change the board, display the board, to change the player, and then multiple if else stamens to check if someone has 3 in a row which then will tell you if there is s a winner of if there is a tie.

|  |
| --- |
| **Game** |
| +table[]:char |
|  |
| +startGame():int |
| **+**checkLegal():int |
| **+**changeBoard():int |
| +displayBoard():int |
| +changePlayer():char |
| +checkWinner():int |
| +checktie():int |
| +checkRow():int |
| +checkCol():int |
| +checkDiag():int |

|  |
| --- |
| **Main** |
| +player:char |
| **+**row:int |
| **+**col:int |
|  |
| **+**checkLegal():int |
| **+**checkWinner():int |
| **+**checkTie():int |

**UML Diagram:**

**Requirements:**

By recreating Tic-Tac-Toe in Java am creating a fun game for many people to enjoy. This game is not fixing a problem but instead creating entertainment for users. Tic-Tac-Toe is a quick game that is simple to play anywhere. It is a good time killer and even can have strategy. This game should be easily accessible, so it can be played anywhere. By coding a game like this it will eliminate the typical pen and pencil. This code could even be turned into an app which would make it accessible anywhere.

**Literature Survey:**

Tic-Tac-Toe has been created and reproduced in multiple ways throughout our time. It has been coded in multiple languages and many physical copies of this game have been sold. On top of that you can create this game yourself with a few lines and two types of marks. My personal idea was to take this game and be able to add your own personal customization to it. By adding customization to a basic game, you are making it your own and allowing to be different from the rest. Customization will attract players to your game since it will give them more things to do and pick from then a basic Tic-Tac-Toe game.

**User Manual:**

Tic-Tac-Toe is played on a 3 by 3 grid. It requires two players to take turns placing their marks on the grid until one player has 3 in a row, vertical, horizontal or diagonal. If neither player does not get 3 in a row it is considered a tie and you restart. When you load up the game follow the directions and enter your mark when it says it is your turn. Place your mark strategically and remember you need to get 3 in a row in order to win.