**Integration Testing**

**Done by Developers**

**Test start game test:** User is given the option to pick between O and X before starting the game. At this stage the option to go first is set as well. The transition between choosing O or X mode to starting game mode executes smoothly and the icon is displayed correctly according to user's input.

**Track user name test:** User is able to see his/her current score with this feature. The logged user name is tracked in order to keep and display score updates. The application is able to respond to user input whenever the user request by clocking on bar area to see current score. This is done with the implementation of a scroll bar that's displayed to the right side of the current window.

**Change between modes test:** User is able to go directly from option player Vs. AI or from player Vs. player to start game mode. The user input is taken an implemented as a trigger to transition between those modes, and also is given the option to go back to previous modes and change the play mode again if desired. If user decided to end the game at either of these two modes the option is given an the play game mode is ended at any moment. Scores are lost at this point, user has to start game over and go through all the option in order to enter play mode again. The help mode is always accessible in all modes of the game.

**Choose level of difficulty test:** User is expected to choose between three options of level of difficulty only when the player Vs. AI mode is implemented. These options remain disabled whenever the user enters the player Vs. player mode. Each selected option will return a value which will trigger the specific difficulty level mode: easy returns 1, medium returns 2, and hard return a 3.

A call is made based on the returned values to select and enter a difficulty level, then a transition from this mode to start game mode is entered.

**Check is board is filled test:** User gets a notice of completely filled board after a function call is made to enter the check board mode. This will detect if all squares were filled and make a call to function dedicated to check the scores a check winner mode is entered at this point. The user is given the notice of who is the winner and is also given the option to start a new game. If user decides to enter into play mode again same settings are kept but if user decides to not play again the close game mode is entered and user would need to login or play as guest before starting a new game.

**GUI applicability test:** User is able to easily adapt to the interface presented. A few modifications are made based on minor suggestion by user after this test: the resizing, realignment, the intrrgation so representative icons for buttons and redesigning of windows is made for the purpose of creating a consistent look throughout all interfaces. This way the user has a better change to adapt easily to all modes and options presented.