## Defect Report

1. With Commit 48f0689, the variable of X for the player's choice of letter for the game does not assign a player to Variable X when it is chosen.

Original code piece:

```
System.out.print("\n  " + player1Name+ ", choose a symbol to play with, \"x\" or \"o\"? ");

        player1Symbol = sc.next().toLowerCase();

        if(player1Symbol=="x"){

        player2Symbol="o";

        }

          else player2Symbol="x";

        System.out.print("  => " + player2Name+ " will play with the '" + player2Symbol + " symbol.\n");

            }
```

Fixed piece: Defined variables added to the code so 'X' will be recognized as a variable

```
System.out.print("\n  " + player1Name+ ", choose a symbol to play with, \"x\" or \"o\"? ");

        player1Symbol = sc.next().toLowerCase();

        if(player1Symbol=="x"){

        player2Symbol="o";

        }

          player1Symbol = "x";

          player2Symbol="o";

          }

        else player2Symbol="x";

        System.out.print("  => " + player2Name+ " will play with the '" + player2Symbol + " symbol.\n");

            System.out.print("  => " + player2Name+ " will play with the '" + player2Symbol + " symbol.\n");

        }
```

2. With commit b2e7c0d, the == operator that compares the 'player1Symbol' object to the 'x' variable will not test for object reference equality.

Original code piece:

```
static void playerSet(){

    System.out.print("\n  " + player1Name+ ", choose a symbol to play with, \"x\" or \"o\"?");

        player1Symbol = sc.next().toLowerCase();

        if(player1Symbol=="x"){

            player1Symbol = "x";

            player2Symbol="o";

            }

        else player2Symbol="x";

            System.out.print("  => " + player2Name+ " will play with the '" + player2Symbol + " symbol.\n");

        }
```

Fixed piece: Replace the == operator with the .equals() method.

```
static void playerSet(){

    System.out.print("\n  " + player1Name+ ", choose a symbol to play with, \"x\" or \"o\"? ");

        player1Symbol = sc.next().toLowerCase();

        if(player1Symbol.equals("x")){

            player1Symbol = "x";

            player2Symbol="o";

            }

        else {

            player1Symbol = "o";

            player2Symbol="x";

        }

        System.out.print("  => " + player2Name+ " will play with the '" + player2Symbol + " symbol.\n");

    }
```

3. With commit f97ce67, the object in an else if statement named 'three' does not match the object called in a print statement, which is named 'one' by mistake.

Original code piece:

```
else if(three.equals(six) && six.equals(nine)){

        System.out.println("player "+one+" Wins! Enter 1 to play again, or 0 to exit: !");

        choice = sc.next();

        if(choice.equals("1")){

            play();
```

Fixed piece: Changed the object in the print statement from 'one' to 'three' to match object in the if else statement.

```
else if(three.equals(six) && six.equals(nine)){

        System.out.println("player "+three+" Wins! Enter 1 to play again, or 0 to exit: !");

        choice = sc.next();

        if(choice.equals("1")){

            play();
```

4. With commit fb64ea5, this gives the player X an unintended extra win.

```
    else if(turnCount==9){

if(one.equals("x")){

   xTally++;

}

else{

   yTally++;

}

System.out.println("Winner tally: X - " + xTally + " " + player2Name + ": " + yTally);

System.out.println("No Winner. Enter 1 to play again, or 0 to exit: ");
```

Fixed piece:  The if else code piece has been removed from the section.

```
            else if(turnCount==9){

if(one.equals("x")){

System.out.println("Winner tally: X - " + xTally + " " + player2Name + ": " + yTally);

System.out.println("No Winner. Enter 1 to play again, or 0 to exit: ");
```

5. With commit d5c93b5, the 'numbers' do not match.

```
else if(four.equals(five) && four.equals(six)){

    if(one.equals("x")){

   xTally++;

     }
```

Fixed piece: Changed 'one' to 'four' to match.

```
else if(four.equals(five) && four.equals(six)){

    if(four.equals("x")){

   xTally++;

     }
```

6. With commit ad7f8f1, the 'numbers' do not match.

```
else if(seven.equals(eight) && eight.equals(nine)){

    if(one.equals("x")){

        xTally++;
    }
```

Fixed piece: The numbers are fixed to match.

```
else if(seven.equals(eight) && eight.equals(nine)){

    if(seven.equals("x")){

        xTally++;
    }
```

7. With commit 2fc3c57, the 'numbers' do not match.

```
else if(two.equals(five) && five.equals(eight)){

    if(one.equals("x")){

        xTally++;
    }
```

Fixed piece: The numbers are fixed to match.

```
else if(two.equals(five) && five.equals(eight)){

    if(two.equals("x")){

        xTally++;
    }
```

8. With commit 2fc3c57, the 'numbers' do not match.

```
else if(three.equals(six) && six.equals(nine)){

    if(one.equals("x")){

        xTally++;
    }
```

Fixed piece: The numbers are fixed to match.

```
else if(three.equals(six) && six.equals(nine)){

    if(three.equals("x")){

        xTally++;
    }
```

9. With commit 2fc3c57, the code for the tally marks for both players is not present to support the if else statement.

```
else if(seven.equals(five) && five.equals(three)){

System.out.println("player "+seven+" Wins! Enter 1 to play again, or 0 to exit: !");

    choice = sc.next();
```

Fixed piece: The if else code has been added.

```
else if(seven.equals(five) && five.equals(three)){

    if(seven.equals("x")){

        xTally++;

    }

    else{

        yTally++;

    }

    System.out.println("player "+seven+" Wins! Enter 1 to play again, or 0 to exit: !");

    choice = sc.next();
```

10. With commit 8924150, you cannot start a new game.

```
else if(turnCount==9){

    System.out.println("Winner tally: X - " + xTally + " " + player2Name + ": " + yTally);

    System.out.println("No Winner. Enter 1 to play again, or 0 to exit: ");

    if(choice.equals("1")){

        play();
    }
```

Fixed piece: The choice variable/choice option has been inserted to allow player to replay.

```
else if(turnCount==9){

    System.out.println("Winner tally: X - " + xTally + " " + player2Name + ": " + yTally);

    System.out.println("No Winner. Enter 1 to play again, or 0 to exit: ");

    choice = sc.next();

    if(choice.equals("1")){

        play();
    }
```