**ASSIGNMENT #5 SOLUTION (Part One)**

**import** java.io.\*; // Need this for BufferedReader

**class** *TicTacToe*

{

**public static void** main(String[] args)

{

**new** InputStreamReader(System.in);

*BufferedReader* *theKeyboard* = **new** *BufferedReader*(**new** *InputStreamReader(System.in))*;

*Board* *Game* = **new** *Board()*;

*System.out.println*("TicTacToe Game starts. Please enter 1-9 to make your choice.");

**int** [] *move* = **new** **int** [2];

**char** *winner*;

**int** *getTurn = 1*; // The initialization of turns

*System.out.println*(Game); // print the board for first time

**while**(**true**) // loop only breaks when X or O wins, or a cat's game

{

**if** (getTurn%2 != 0) // Player X's turn

{

*System.out.print*("Player X: Enter 1-9 to make choice!");

**while**(**true**)

{

*move* = *getMove*();

**if** (!Game.elementMarked(move[0], move[1]))

**break**; // can't take occupied space

*System.out.println*("That space is occupied.");

}

*Game*.*markFirst*(move[0], move[1]); // mark an X on the board

*winner* = *Game*.*win*(); // Check if win **if** (winner != 'None')

**break**;

*System.out.println*(Game);

*getTurn++*; //return turn to the other player

}

*System.out.print*("Player O: Enter 1-9 to make choice!"); // Player O's turn

**while**(**true**)

{

*move* = *getMove*();

**if**(!Game.elementMarked(move[0], move[1]))

**break**;

*System.out.println*("This square has been chosen. Please enter a new square.");

}

*Game*.*markSecond*(move[0], move[1]);

*winner* = *Game*.*win*(); // Check if win

**if**( winner != 'None')

**break**;

*System.out.println*(Game);

*getTurn*++; //return turn to the other player

}

*System.out.println*(Game);

**if** (winner == 'Cat')

*System.out.println*("This is a cat's game.");

**if** (winner != 'Cat')

*System.out.println*("The winner is: " + winner);

}

**public** **static** **int**[] getMove() // getMove gets the users choice and translates it into rows and columns

{

**new** *InputStreamReader(System.in)*;

*BufferedReader* *theKeyboard* = **new** *BufferedReader* (**new** InputStreamReader(System.in));

**String** *input* = "";

**int** [] *move* = **new** **int**[2];

**boolean** *errorInput* = **false**;

**do**

{

**try**

{

*input* = *theKeyboard.readLine();*

}

**catch**(IOException e)

{

*System.out.println*("input error:" + e);

*System.exit*(1);

}

**if**(input.equals("1")) {move [0] = 0; move[1] = 0; errorInput = **false**;}

**else if**(input.equals("2")) {move [0] = 0; move[1] = 1; errorInput = **false**;}

**else if**(input.equals("3")) {move [0] = 0; move[1] = 2; errorInput = **false**;}

**else if**(input.equals("4")) {move [0] = 1; move[1] = 0; errorInput = **false**;}

**else if**(input.equals("5")) {move [0] = 1; move[1] = 1; errorInput = **false**;}

**else if**(input.equals("6")) {move [0] = 1; move[1] = 2; errorInput = **false**;}

**else if**(input.equals("7")) {move [0] = 2; move[1] = 0; errorInput = **false**;}

**else if**(input.equals("8")) {move [0] = 2; move[1] = 1; errorInput = **false**;}

**else if**(input.equals("9")) {move [0] = 2; move[1] = 2; errorInput = **false**;}

else errorInput = **true**;

**if** (errorInput)

*System.out.print*("Error input. Enter a number within 1-9: ");

}

**while**(*errorInput*);

**return** *move*;

} // The end of getMove

} // The end of class TicTacToe