

## Task 2      Tic-Tac-Toe

(25 marks)

Develop tic-tac-toe game in C++ using classes.

You have

- Square class which will represent box/position of board.
- Player class which will contain first name, last name and sign of player.
- Game class that will store a dynamic array of type square, two objects of player class and an integer to store dimension/size of board.

When the program starts, program will ask the user about the dimensions/size of board. Your program should support dimensions of (3, 5, 7, 9) only. Afterwards, the program will ask about the names of players and their respective symbols which will be used in game. Your program should randomly decide that which player will start the game. The player who succeeds in placing consecutive three of its marks horizontally, vertically or diagonally wins the game. If all the positions in grid are filled such that none of the players succeeds to place three consecutive marks horizontally, vertically or diagonally, game is said to be drawn.

You need to write the following for each class:

- Default constructor
- Parameterized constructor(s)
- Copy constructor (if required)
- Destructor (if required)

You have to overload ([][] ) operator for game class. i-e if a player wants to play his move at 1<sup>st</sup> column and 1<sup>st</sup> row, then your program should support the following statement.

```
myGame[0][0] = myGame.getPlayerSymbol();
```

```
/* myGame is an object of game class and getPlayerSymbol() is a  
function that returns symbol of a player */
```