Task

Q1. Suppose you’re working with the DECS society to arrange an annual picnic. You are required to store specific information, like, the total budget and the remaining budget for the picnic, total number of tickets, number of tickets sold, a list of names of faculty members and students attending the picnic, etc.

Create a class for PicnicManagement which will help the society with their budgeting and ticketing process.

1. Create member variables, accessors and mutators, default and parameterized constructors with the following constraints:
   * The total number of tickets, and total budget should not change once they have been initialized. The default number of tickets should be 2,000. The default total budget should be 2,000,000/=
   * Any changes made to the budget remaining, number of tickets sold, list of students and faculty is to be reflected to anyone who is using the system.
   * The number of tickets and budget should not be negative. In case of wrong inputs, default values should be used.
2. Write a member function called **bool utilizeFunds(int amount)** which can be used by the EM team to book beach, lodges, etc. When using this function, the EM member has to specify what reason they are using the fund for, and how much amount is being used. These funds should be deducted from the remaining budget. If the funds exceed the remaining budget, and appropriate message should be displayed and false should be returned.
3. Write a member function called **int sellTicket(int amount)** which can be used by contact persons to sell tickets. A maximum of two, and a minimum one ticket can be sold at a time. Whenever a ticket is sold, it should add 1,500/= to the remaining budget. During the function call, if the number of tickets remaining is lesser than the number of tickets to sell, it should sell the maximum possible tickets and then return the number of tickets that were not sold. (*If I want to sell 2 tickets, and there is only 1 ticket left, it should sell me the 1 ticket and return 1*)

Q2. Let’s say you’re working on a game called “Space Invaders”. Multiple players can play this game, and the game itself stores the top three scores achieved by players. Create a class for your game with the following constraints:

1. Following attributes and functionalities are available in your game:
   * A list of high scores
   * A list of usernames who scored these high scores
   * Username (of the current user playing the game)
   * Score (of the current user playing the game)
   * Constructors to initialize the initial score to 0. Default name should be “Player 1” if not specified by the user.
   * A function to display the high scores
   * A function to play the game
2. Provide proper functionality for the following two functions:
   * void displayHighScore() – Should show a list of usernames and their high scores. Everyone should be able to see the highest scores obtained.
   * Void playGame() – Should allow the user to play the game – you don’t have to provide functionality for gameplay – the function should generated a score(you can use the random function). This score is to be compared with the existing high scores. If the score is higher than any of the high scores, the ranking should be updated accordingly.  
     For example:

The current ranking is:

1. Abeeha 9,999 2. Bakhtawer 8,888 3. Nida 7,777

If the current player “XYZ” scores a 9,000 – The updated high score should be:  
1. Abeeha 9,999 2. XYZ 9,000 3. Bakhtawer 8,888

1. Write a main function that will produce the following output by making use of your designed class, members, functions and objects:

1. Abeeha 9,999 2. XYZ 9,000 3. Bakhtawer 8,888

1. YourName 10,000 2. Abeeha 9,999 3. XYZ 9,000