1

Implement Class **BankAccount** with these specifications:

It holds the following data:
• **accountID**
• **balance**

The following methods apply to this class:

- **Constructors**: There are 2 constructors
  - First constructor sets the balance to a given value
  - Second constructor is a no-argument constructor, and it sets the balance to 0
- **withdraw:** withdraws an amount of money from the account if the balance is sufficient
- **deposit:** deposits an amount of money in the account

2

Implement the class called **Holiday** like the code below. An object of class **Holiday** represents a holiday during the year.

It holds the following data:

- **name** the name of the holiday
- **day:** number of the day in the month
- **month:** month name

You should implement the following:

- **Constructor:** Write a constructor for the class Holiday, which takes name, day, and month as its arguments, and set the class variables to these values
- **inSameMonth**: Write this method that takes two objects of the class Holiday and compares them then return a Boolean value true if they have the same month, and false if they do not.

- **avgDate**: Write this method that takes an array of base type **Holiday** as its argument, and returns the average of the attribute day in every Holiday object in the array. You may assume that the array is full (i.e. does not have any null entries).
- **Test in main:** Write a piece of code that creates an object Holiday with data: the name "Independence Day", the day "4" and the month "July" and test previous methods in the main function.

3

Implement the class **Movie** as code below. An object of a class Movie represents a film.
It holds the following data:

- **title**
- **studio**: name of studio made a movie
- **rating**: It is the rating of movies and represented like that: "PG13", "PG"

You should implement the following:

- **First constructor:** Write a constructor for the class Movie which takes the title, studio, and rating.
- **Second constructor:** Write another constructor for the class Movie which takes the title, and studio as parameters and sets the rating to the default value "PG"

  Hint: you can make the 2 constructors in only one constructor using optional or optional named parameters

- **getPG:** Write this method that takes an array of base type **Movie** as its argument and returns a new array of only those movies in the input array that their rating contains "PG"
- **Test in main:** Write a piece of code that creates an object of Movie with data: the title "Casino Royale", the studio "Eon Productions" and the rating "PG13" and test previous methods in the main function.