

JAVA Lab Assignment Week 6

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Create a class Film with string objects which stores name, language and lead_actor and category (action/drama/fiction/comedy). Also include an integer data member that stores the duration of the film. Include parameterized constructor, default constructor and accessory functions to film class. Film objects can be initialized either using a constructor or accessor functions. Create a class FilmMain that includes a main function.

Code:

```
import java.util.Scanner;
class Film{
    String name;
    String language;
    String lead_actor;
    String category;
    int duration;
    Film(){
        Scanner input = new Scanner(System.in);
        System.out.println("Enter film details");
        System.out.print("Enter name: ");
        name = input.nextLine();
        System.out.print("Enter language: ");
        language = input.next();
        System.out.print("Enter lead actor: ");
        lead_actor = input.next();
        System.out.print("Enter category (action/drama/fiction/comedy): ");
        category = input.next();
        System.out.print("Enter duration: ");
        duration = input.nextInt();
        input.close();
    }
    Film(String name, String language, String lead_actor, String category, int
duration){
        this.name = name;
        this.language = language;
        this.lead_actor = lead_actor;
        this.category = category;
        this.duration = duration;
    }
    public void putdata(){
        System.out.println("Movie details: ");
        System.out.println("Name: "+name);
        System.out.println("Language: "+language);
        System.out.println("Lead Actor: "+lead_actor);
        System.out.println("Category: "+category);
    }
}
```

```

        System.out.println("Duration: "+duration);
    }
}

public class FilmMain{
    public static void main(String args[]){
        Film f1 = new Film();
        f1.putdata();
        Film f2 = new Film("The Adam Project", "English", "Ryan Reynolds",
"Fiction", 169);
        f2.putdata();
    }
}

```

Output:

```

● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ javac FilmMain.java
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ java FilmMain
Enter film details
Enter name: Spiderman No Way Home
Enter language: English
Enter lead actor: TomHolland
Enter category (action/drama/fiction/comedy): Action
Enter duration: 180
Movie details:
Name: Spiderman No Way Home
Language: English
Lead Actor: TomHolland
Category: Action
Duration: 180
Movie details:
Name: The Adam Project
Language: English
Lead Actor: Ryan Reynolds
Category: Fiction
Duration: 169
○ stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ 

```

Define an abstract class 'Themepark' and inherit 2 classes 'Queensland' and 'Wonderla' from the abstract class. In both the theme parks, the entrance fee for adults is Rs. 500 and for children it is Rs. 300. If a family buys 'n' adult tickets and 'm' children tickets, define a method in the abstract class to calculate the total cost. Also, declare an abstract method playGame() which must be redefined in the subclasses. In Queensland, there are a total of 30 games. Hence create a Boolean array named 'Games' of size 30 which initially stores false values for all the elements. If the player enters any game code that has already been played, a warning message should be displayed and the user should be asked for another choice. In Wonderla, there are a total of 40 different games. Thus, create an integer array with 40 elements. Here, the games can be replayed, until the user wants to quit. Finally display the total count of games that were repeated and count of the games which were not played at all.

Code:

```
import java.util.Scanner;

abstract class ThemePark{
    final int ad_fee = 500;
    final int ch_fee = 300;
    void play(){};
    int cost(int m, int n){
        int total_cost;
        total_cost = (m*ch_fee)+(n*ad_fee);
        return total_cost;
    }
}

class Queensland extends ThemePark{
    int games=30;
    Boolean Games[] = new Boolean[30];
    Queensland(){
        for(int i=0;i<30;i++){
            Games[i] = false;
        }
    }
    void play(){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter game code(1 to 30): ");
        int i;
        i = input.nextInt();
        while(Games[i-1]==true){
            System.out.println("You cannot play a game which you already played.");
            System.out.print("Enter a new game code: ");
            i = input.nextInt();
        }
        Games[i-1] = true;
    }
    void countGames(){
        int gamesNotPlayed=0;
        for(int i=0;i<30;i++){
            if(Games[i]==false){
```

```

gamesNotPlayed++;
}
}
System.out.println(gamesNotPlayed+" games have not been played.");
}
}
class Wonderla extends ThemePark{
int games=40;
int Games[] = new int[40];
Wonderla(){
for(int i=0;i<40;i++){
Games[i] = 0;
}
}
void play(){
Scanner input = new Scanner(System.in);
System.out.print("Enter game code(1 to 40): ");
int i;
i = input.nextInt();
Games[i-1]++;
}
void countGames(){
int playedMoreThanOnce=0;
for(int i=0;i<40;i++){
if(Games[i]>1){
playedMoreThanOnce++;
}
}
}
System.out.println(playedMoreThanOnce+" games have been played more than
once");
int gamesNotPlayed=0;
for(int i=0;i<40;i++){
if(Games[i]==0){
gamesNotPlayed++;
}
}
System.out.println(gamesNotPlayed+" games have not been played.");
}
}
public class Main {
public static void main(String args[]){
Scanner input = new Scanner(System.in);
Queensland q = new Queensland();
int choice = 1;
do{
try{
q.play();
}
}
}

```

```

catch(ArrayIndexOutOfBoundsException e){
System.out.println("Game code should not be more than 30");
}
System.out.print("Enter 1 to play another game: ");
choice = input.nextInt();
}while(choice==1);
q.countGames();
choice = 1;
Wonderla w = new Wonderla();
System.out.println("Wonderla!");
do{
try{
w.play();
}
catch(ArrayIndexOutOfBoundsException e){
System.out.println("Game code should not be more than 40");
}
System.out.print("Enter 1 to play another game: ");
choice = input.nextInt();
}while(choice==1);
w.countGames();
input.close();
}
}

```

Output:

```

● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ javac Main.java
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ java Main
Enter game code(1 to 30): 1
Enter 1 to play another game: 1
Enter game code(1 to 30): 2
Enter 1 to play another game: 1
Enter game code(1 to 30): 3
Enter 1 to play another game: 1
Enter game code(1 to 30): 2
You cannot play a game which you already played.
Enter a new game code: 5
Enter 1 to play another game: 0
26 games have not been played.
Wonderla!
Enter game code(1 to 40): 1
Enter 1 to play another game: 1
Enter game code(1 to 40): 2
Enter 1 to play another game: 1
Enter game code(1 to 40): 3
Enter 1 to play another game: 1
Enter game code(1 to 40): 2
Enter 1 to play another game: 0
1 games have been played more than once
37 games have not been played.
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$

```

Read the Register Number and Mobile Number of a student. If the Register Number does not contain exactly 9 characters or if the Mobile Number does not contain exactly 10 characters, throw an `IllegalArgumentException`. If the Mobile Number contains any character other than a digit, raise a `NumberFormatException`. If the Register Number contains any character other than digits and alphabets, throw a `NoSuchElementException`. If they are valid, print the message 'valid' else 'invalid'.

Code:

```
import java.util.*;

class IllegalArgumentException extends Exception{
    IllegalArgumentException(){
        System.out.println("Length of mobile no or reg no is incorrect!");
    }
}

class NumberFormatException extends Exception{
    NumberFormatException(){
        System.out.println("Mobile number should contain only numbers!");
    }
}

class NoSuchElementException extends Exception{
    NoSuchElementException(){
        System.out.println("Reg no should contain only digits and letters!");
    }
}

public class ExceptionHandling3 {
    static void validDetails(String RegNo, String PhNo) throws
    IllegalArgumentException, NumberFormatException, NoSuchElementException{
        if(!(RegNo.length()==9)||!(PhNo.length()==10)){
            throw new IllegalArgumentException();
        }
        else{
            for(int i=0;i<RegNo.length();i++){
                if(!Character.isAlphabetic(RegNo.charAt(i)) &&
                !Character.isDigit(RegNo.charAt(i))){
                    throw new NoSuchElementException();
                }
            }
            for(int i=0;i<PhNo.length();i++){
                if(!Character.isDigit(PhNo.charAt(i))){
                    throw new NumberFormatException();
                }
            }
        }
        System.out.println("valid");
    }
}
```

```
}  
public static void main(String args[]){  
    Scanner input = new Scanner(System.in);  
    System.out.print("Enter Phone No: ");  
    String phno = input.next();  
    System.out.print("Enter Register No: ");  
    String regno = input.next();  
    try{  
        validDetails(regno, phno);  
    }  
    catch(IllegalArgumentException e){  
        System.out.println("invalid");  
    }  
    catch(NoSuchElementException e){  
        System.out.println("invalid");  
    }  
    catch(NumberFormatException e){  
        System.out.println("invalid");  
    }  
    input.close();  
}  
}
```

Output:

```
PROBLEMS OUTPUT TERMINAL JUPYTER DEBUG CONSOLE bash + - [ ] [X] < X
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ javac ExceptionHandling
3.java
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ java ExceptionHandling3

Enter Phone No: 9488955416
Enter Register No: 21MIS1146
valid
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ java ExceptionHandling3

Enter Phone No: 12345678
Enter Register No: 21MIS1146
Length of mobile no or reg no is incorrect!
invalid
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ java ExceptionHandling3

Enter Phone No: 1234567890
Enter Register No: 123456
Length of mobile no or reg no is incorrect!
invalid
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ java ExceptionHandling3

Enter Phone No: 1234567890
Enter Register No: 123=45
Length of mobile no or reg no is incorrect!
invalid
● stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$ java ExceptionHandling3

Enter Phone No: 9878965421
Enter Register No: 21mis2+jj
Reg no should contain only digits and letters!
invalid
○ stark@Suryakumar:~/Programming/Fall_Sem/Java/21MIS1146/Week6$
```