Experiment 3

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Subject Name: Problem Based Learning in Java
Subject Code: 20CSP-321

1. Aim/Overview of the practical:

Interest Calculator

2. Task to be done/ Which logistics used:

Calculate interest based on the type of the account and the status of the account holder. The rates of interest changes according to the amount (greater than or less than 1 crore), age of account holder (General or Senior citizen) and number of days if the type of account is FD or RD.

Finally, create a VideoStoreLauncher class with a main() method which will test the functionality of your other two classes. It should allow the following.

1. Add 3 videos: "The Matrix", "Godfather II", "Star Wars Episode IV: A New Hope".
2. Give several ratings to each video.
3. Rent each video out once and return it. List the inventory after "Godfather II" has been rented out

3. Steps for experiment/practical/Code:

```
import java.util.*;

class FDAccount
{
	double amount;
	int noOfDays;
	int ageofAcHolder;
	public FDAccount(double b,int c,int d)
	{
		amount = b;
		noOfDays = c;
		ageofAcHolder = d;
	}
	double interestgain = 0.0;
	void calculateInterest(){
```

```
if(amount<10000000){
	if(ageofAcHolder>=60){
		if(noOfDays>=7 && noOfDays<=14){
			interestgain = (amount*5.00)/100;
		}
		else if(noOfDays>=15 && noOfDays<=29){
			interestgain = (amount*5.25)/100;
		}
		else if(noOfDays>=30 && noOfDays<=45){
			interestgain = (amount*6.00)/100;
		}
		else if(noOfDays>=45 && noOfDays<=60){
			interestgain = (amount*7.50)/100;
		}
		else if(noOfDays>=61 && noOfDays<=184){
			interestgain = (amount*8.00)/100;
		}
		else if(noOfDays>=185 && noOfDays<=365){
			interestgain = (amount*8.50)/100;
		}
		 System.out.println("Interestgain: "+interestgain);
	}
else{
	if(noOfDays>=7 && noOfDays<=14){
		interestgain = (amount*4.50)/100;
	}
	else if(noOfDays>=15 && noOfDays<=29){
		interestgain = (amount*4.75)/100;
	}
	else if(noOfDays>=30 && noOfDays<=45){
		interestgain = (amount*5.50)/100;
	}
	else if(noOfDays>=45 && noOfDays<=60){
		interestgain = (amount*7.00)/100;
	}
	else if(noOfDays>=61 && noOfDays<=184){
		interestgain = (amount*7.50)/100;
	}
	else if(noOfDays>=185 && noOfDays<=365){
		interestgain = (amount*8.00)/100;
	}
	System.out.println("Interestgain: "+interestgain);
	}
}
else{
	if(noOfDays>=7 && noOfDays<=14){
		interestgain = (amount*6.50)/100;
	}
	else if(noOfDays>=15 && noOfDays<=29){
		interestgain = (amount*6.75)/100;
	}
	else if(noOfDays>=30 && noOfDays<=45){
		interestgain = (amount*6.75)/100;
```

```
                }
                else if(noOfDays>=45 && noOfDays<=60){
                        interestgain = (amount*8.00)/100;
                }
                else if(noOfDays>=61 && noOfDays<=184){
                        interestgain = (amount*8.50)/100;
                }
                else if(noOfDays>=185 && noOfDays<=365){
                        interestgain = (amount*10.00)/100;
                }
                System.out.println("Interestgain: "+interestgain);
        }
    }
}
class RDAccount{
    double amount;
    int noOfmonths;
    int ageofAcHolder;

    public RDAccount(double a,int b,int c){
        amount = a;
        noOfmonths = b;
        ageofAcHolder = c;
    }
    double interestgain=0.0;
    void calculateInterest(){
        if(ageofAcHolder>=65){
            if(noOfmonths>=6 && noOfmonths<9){
                    interestgain = (amount*8.00)/100;
            }
            else if(noOfmonths>=9 && noOfmonths<12){
                    interestgain = (amount*8.25)/100;
            }
            else if(noOfmonths>=12 && noOfmonths<15){
                    interestgain = (amount*8.50)/100;
            }
            else if(noOfmonths>=15 && noOfmonths<18){
                    interestgain = (amount*8.75)/100;
            }
            else if(noOfmonths>=18 && noOfmonths<21){
                    interestgain = (amount*9.00)/100;
            }
            else if(noOfmonths>=21 && noOfmonths<=24){
                    interestgain = (amount*9.25)/100;
            }
            System.out.println("Interestgain "+ interestgain);
        }
        else{
            if(noOfmonths>=6 && noOfmonths<9){
                    interestgain = (amount*7.50)/100;
            }
            else if(noOfmonths>=9 && noOfmonths<12){
                    interestgain = (amount*7.75)/100;
```

```
                }
                else if(noOfmonths>=12 && noOfmonths<15){
                        interestgain = (amount*8.00)/100;
                }
                else if(noOfmonths>=15 && noOfmonths<18){
                        interestgain = (amount*8.25)/100;
                }
                else if(noOfmonths>=18 && noOfmonths<21){
                        interestgain = (amount*8.50)/100;
                }
                else if(noOfmonths>=21 && noOfmonths<=24){
                        interestgain = (amount*8.75)/100;
                }
                System.out.println("Interestgain "+ interestgain);
        }
    }
}
class SBaccount{
    double amount;
    String accountType;

    public SBaccount(double a,String b){
        amount = a;
        accountType = b;
    }
    double interestgain=0.0;
    void calculateInterest(){
        if(accountType=="Normal"){
            interestgain = (amount*4)/100;
        }
        else if(accountType=="NRI"){
            interestgain = (amount*6)/100;
        }
        System.out.println("Interestgain "+interestgain);
    }
}
public class exp3
{
    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);
        // goto
        System.out.println("1. Interest Calculator -FD");
        System.out.println("2. Interest Calculator -RD");
        System.out.println("3. Interest Calculator -SB");
        System.out.println("4. Exit");
        System.out.println("Enter your choice: ");
        int a = sc.nextInt();
        if(a==1){
            System.out.println("Enter Amount ");
            double amount = sc.nextDouble();
            System.out.println("Enter no of days ");
            int days = sc.nextInt();
```

```
                System.out.println("Enter age of person ");
                int age = sc.nextInt();

                FDAccount f = new FDAccount(amount,days,age);
                f.calculateInterest();
                 // continue flag;
            }
            else if(a==2){
                System.out.println("Enter Amount ");
                double amount = sc.nextDouble();
                System.out.println("Enter no of months ");
                int months = sc.nextInt();
                System.out.println("Enter age of person ");
                int age = sc.nextInt();

                RDAccount rd = new RDAccount(amount,months,age);
                rd.calculateInterest();
                // continue flag;
            }
            else if(a==3){
                System.out.println("Enter Amount ");
                double amount = sc.nextDouble();
                System.out.println("Enter type of account ");
                String type = sc.next();

                SBaccount sb = new SBaccount(amount,type);
                sb.calculateInterest();
                // continue flag;
            }
            else if(a==4){
                System.exit(0);
            }
        }
}
```

4. Result/Output/Writing Summary:

```
1. Interest Calculator -FD
2. Interest Calculator -RD
3. Interest Calculator -SB
4. Exit
Enter your choice:
2
Enter Amount
30000
Enter no of months
6
Enter age of person
35
Interestgain 2250.0
```

```
1. Interest Calculator -FD
2. Interest Calculator -RD
3. Interest Calculator -SB
4. Exit
Enter your choice:
1
Enter Amount
20000
Enter no of days
180
Enter age of person
35
Interestgain: 1500.0
```

Learning outcomes (What I have learnt):

1. Learn how to implement all the functions in JAVA
2. Learn about return and without return functions concept.
3. Learn about arguments.
4. Learn about difference between simple and parameterized function.
5. Learn how to write code in JAVA, about indentation

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			