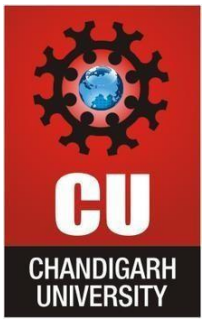
CHANDIGARH UNIVERSITY
UNIVERSITY INSTITUTE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



Submitted By: Shubham Shrivastava	**Submitted To: Indu Sharma ma'am**
Subject Name	Project Based Learning in Java
Subject Code	20CSP-338
Branch	CSE
Semester	5

LAB INDEX

NAME: Shubham Shrivastava
UID: 20BCS5472
SECTION: 20BCS WM_618-B

SUBJECT NAME: Project Based Learning in Java
SUBJECT CODE: 20CSP-321

Sr.No	Program	Date	Evaluation				Sign
			LW (12)	VV (8)	FW (10)	Total (30)	

WORKSHEET – 3

Name: Shubham Shrivastava **UID: 20BCS5472**
Section/Group: 618 'B' **Subject: PBLJ LAB**
Branch: BE CSE (5th Semester)

Aim:

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.

Some sample rates are given in the below tables:

Requirements: 1. Separate classes should be created for the different types of accounts. 2. All classes should be deriving from an abstract class named 'Account' which contains a method called 'calculateInterest'. 3. Implement the calculateInterest method according to the type of the account, interest rates, amount, and age of the account holder. 4. If the user is entering any invalid value (For eg. Negative value) in any fields, raise a user defined exception.

Apparatus / Simulator Used:

Eclipse IDE - (Java), NetBeans.

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){
```

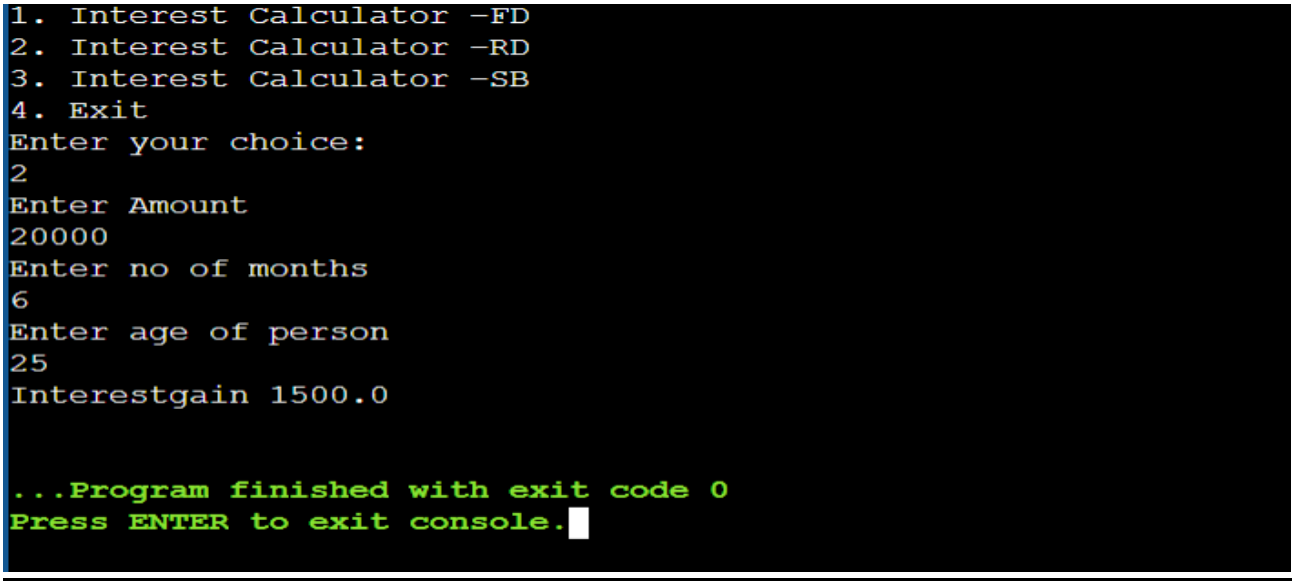
```
            interestgain = (amount*7.50)/100;
          }
          else if(noOfmonths>=9 && noOfmonths<12){
            interestgain = (amount*7.75)/100;
          }
          else if(noOfmonths>=12 && noOfmonths<15){
            interestgain = (amount*8.00)/100;
          }
          else if(noOfmonths>=15 && 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;
      }
```

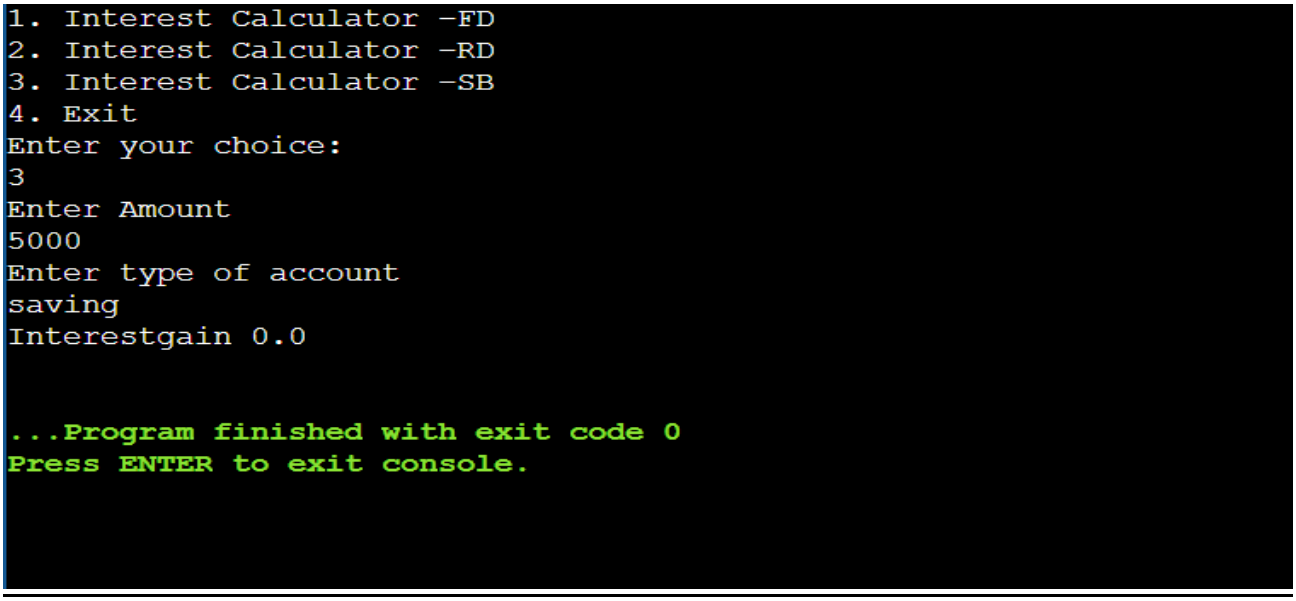
```
        System.out.println("Interestgain "+interestgain);
    }

}

public class Main
{
        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);
            }
        }
}
```

OUTPUT:

```
1. Interest Calculator –FD
2. Interest Calculator –RD
3. Interest Calculator –SB
4. Exit
Enter your choice:
1
Enter Amount
10000
Enter no of days
365
Enter age of person
21
Interestgain: 800.0


...Program finished with exit code 0
Press ENTER to exit console.
```





Learning Outcomes:

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.