Experiment1.3

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Branch:CSE **Section/Group: 607-B**
Semester: 5 **Date of Performance: 01/09/22**
Subject Name: PBLJ LAB **Subject Code: 20CSP-321**

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;
```

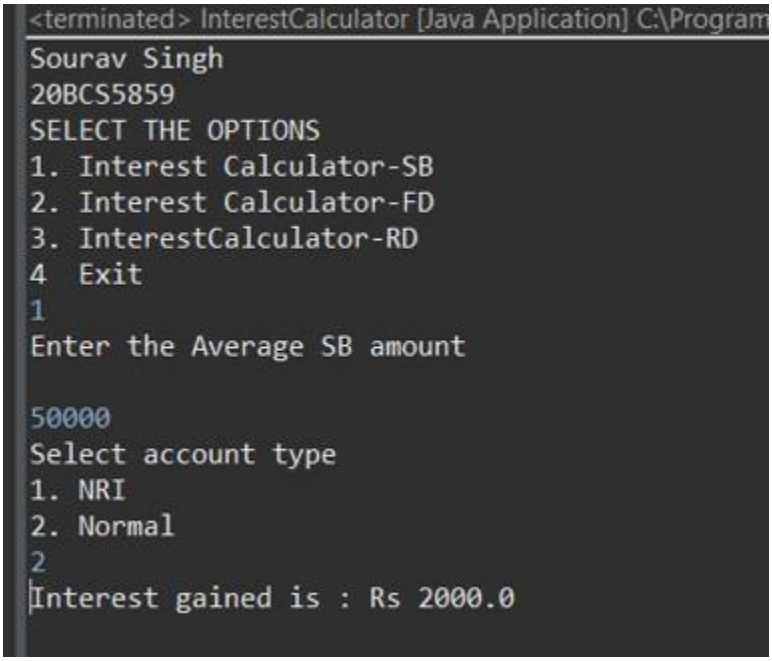
```
                }

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

    }
```

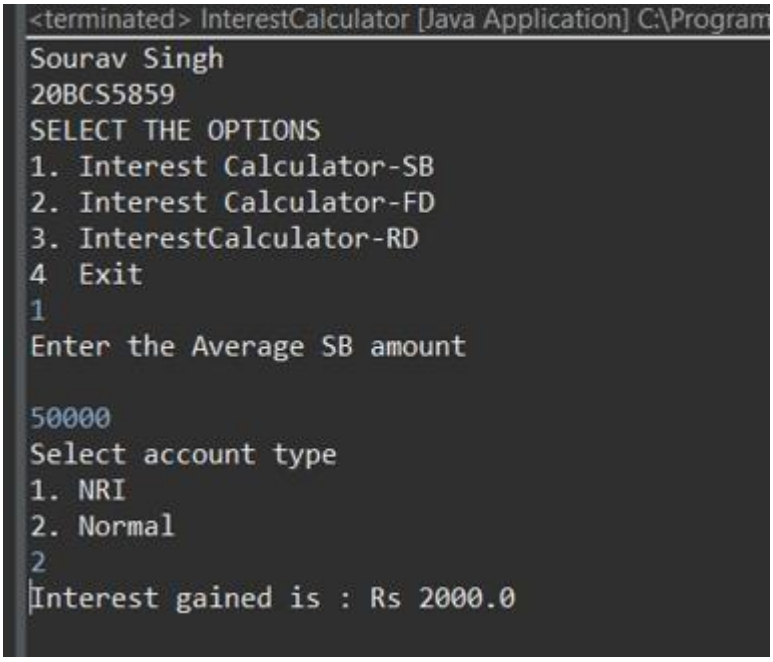
```
}

 class SBaccount{     double
amount;     String accountType;

          public SBaccount(double a,String b){  amount
               = a;  accountType = b;

   }

   double interestgain=0.0;     void
calculateInterest(){ if(accountTyp
e=="Normal"){

                    interestgain = (amount*4)/100;

               }

               else

                    if(accountType=="NRI"){ intere

                    stgain = (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");
```

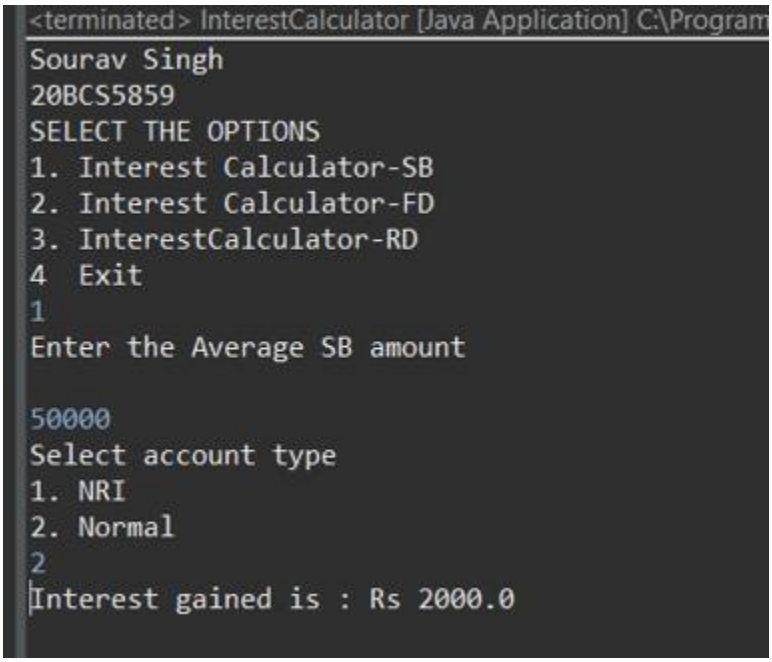
```
System.out.println("Enter your choice: "); int a =
sc.nextInt(); if(a==1){

   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 :







LEARNING OUTCOME:

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