**EXPERIMENT -3**

**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.**

**SOURCE CODE:**

import java.io.IOException;

import java.util.Scanner;

abstract class Account

{

double interest\_Rate;

double amount;

abstract double cal\_interest();

}

class MyException extends Exception

{

public MyException(String str)

{

System.out.println(str);

}}

class SB\_Account extends Account

{

double interest\_Rate;

double amount;

double cal\_interest()

{

Scanner s=new Scanner(System.in);

System.out.println("Account type:");

String type = s.nextLine();

if(type=="normal")

{

try{

System.out.println("Enter the Average amount in your account:");

amount = s.nextInt();

if(amount<0)

throw new MyException("Invalid Amount, Please enter correct values.");

double Interest\_gained = amount\*0.04;

System.out.println("Interest gained:"+Interest\_gained);

}

catch (MyException m) {

System.out.println(m);

}

}

else

{

try{

System.out.println("Enter the Average amount in your account:");

amount = s.nextInt();

if(amount<0)

throw new MyException("Invalid Amount, Please enter correct values.");

double Interest\_gained = amount\*0.06;

System.out.println("Interest gained:"+Interest\_gained);

}

catch (MyException m) {

System.out.println(m);

}

}

return 0;

}}

class FD\_Account extends Account

{

double interest\_Rate;

double amount;

int no\_Of\_Days,age\_Of\_ACHolder;

double cal\_interest(){

Scanner s=new Scanner(System.in);

try{

System.out.println("Enter the Average amount in your account:");

amount = s.nextInt();

if(amount<0)

throw new MyException("Invalid Amount, Please enter correct values.");

System.out.println("Enter the number of Days:");

no\_Of\_Days = s.nextInt();

if(no\_Of\_Days<0)

throw new MyException("Invalid Number of Days. Please enter correct values.");

System.out.println("Enter your age:");

age\_Of\_ACHolder = s.nextInt();

if(age\_Of\_ACHolder<0)

throw new MyException("Invalid Age, Please enter correct values.");

}

catch (MyException m) {

System.out.println(m);

}

if(amount<10000000)

{

if(age\_Of\_ACHolder<60)

{

if(no\_Of\_Days > 7 && no\_Of\_Days < 14)

{System.out.println("Interest gained:"+amount\*0.045);}

if(no\_Of\_Days > 15 && no\_Of\_Days < 29)

{System.out.println("Interest gained:"+amount\*0.047);}

if(no\_Of\_Days > 30 && no\_Of\_Days < 45)

{System.out.println("Interest gained:"+amount\*0.055);}

if(no\_Of\_Days > 45 && no\_Of\_Days < 60)

{System.out.println("Interest gained:"+amount\*0.07);}

if(no\_Of\_Days > 61 && no\_Of\_Days < 184)

{System.out.println("Interest gained:"+amount\*0.075);}

if(no\_Of\_Days > 185 && no\_Of\_Days < 365)

{System.out.println("Interest gained:"+amount\*0.08);}

}

if(age\_Of\_ACHolder>60)

{

if(no\_Of\_Days > 7 && no\_Of\_Days < 14)

{System.out.println("Interest gained:"+amount\*0.05);}

if(no\_Of\_Days > 15 && no\_Of\_Days < 29)

{System.out.println("Interest gained:"+amount\*0.0525);}

if(no\_Of\_Days > 30 && no\_Of\_Days < 45)

{System.out.println("Interest gained:"+amount\*0.06);}

if(no\_Of\_Days > 45 && no\_Of\_Days < 60)

{System.out.println("Interest gained:"+amount\*0.075);}

if(no\_Of\_Days > 61 && no\_Of\_Days < 184)

{System.out.println("Interest gained:"+amount\*0.08);}

if(no\_Of\_Days > 185 && no\_Of\_Days < 365)

{System.out.println("Interest gained:"+amount\*0.085);}

}

}

if(amount>10000000)

{

if(no\_Of\_Days > 7 && no\_Of\_Days < 14)

{System.out.println("Interest gained:"+amount\*0.065);}

if(no\_Of\_Days > 15 && no\_Of\_Days < 29)

{System.out.println("Interest gained:"+amount\*0.0675);}

if(no\_Of\_Days > 30 && no\_Of\_Days < 45)

{System.out.println("Interest gained:"+amount\*0.0675);}

if(no\_Of\_Days > 45 && no\_Of\_Days < 60)

{System.out.println("Interest gained:"+amount\*0.08);}

if(no\_Of\_Days > 61 && no\_Of\_Days < 184)

{System.out.println("Interest gained:"+amount\*0.085);}

if(no\_Of\_Days > 185 && no\_Of\_Days < 365)

{System.out.println("Interest gained:"+amount\*0.1);}

}

return 0;

}}

class RD\_Account extends Account

{

double interest\_Rate;

double amount;

int no\_Of\_months,age\_Of\_ACHolder;

double cal\_interest(){

Scanner s=new Scanner(System.in);

try{

System.out.println("Enter the Average amount in your account:");

amount = s.nextInt();

if(amount<0)

throw new MyException("Invalid Amount, Please enter correct values.");

System.out.println("Enter the number of months:");

no\_Of\_months = s.nextInt();

if(no\_Of\_months<0)

throw new MyException("Invalid Number of months. Please enter correct values.");

System.out.println("Enter your age:");

age\_Of\_ACHolder = s.nextInt();

if(age\_Of\_ACHolder<0)

throw new MyException("Invalid Age, Please enter correct values.");

}

catch (MyException m) {

System.out.println(m);

}

if(age\_Of\_ACHolder<60)

{

if(no\_Of\_months>=1 && no\_Of\_months <= 6)

{System.out.println("Interest gained:"+amount\*0.075);}

if(no\_Of\_months>6 && no\_Of\_months <= 9)

{System.out.println("Interest gained:"+amount\*0.0775);}

if(no\_Of\_months>9 && no\_Of\_months <= 12)

{System.out.println("Interest gained:"+amount\*0.08);}

if(no\_Of\_months>12 && no\_Of\_months <= 15)

{System.out.println("Interest gained:"+amount\*0.0825);}

if(no\_Of\_months>=15 && no\_Of\_months <= 18)

{System.out.println("Interest gained:"+amount\*0.085);}

if(no\_Of\_months>=18 && no\_Of\_months <= 21)

{System.out.println("Interest gained:"+amount\*0.0875);}

}

if(age\_Of\_ACHolder>60)

{

if(no\_Of\_months>=1 && no\_Of\_months <= 6)

{System.out.println("Interest gained:"+amount\*0.08);}

if(no\_Of\_months>6 && no\_Of\_months <= 9)

{System.out.println("Interest gained:"+amount\*0.0825);}

if(no\_Of\_months>9 && no\_Of\_months <= 12)

{System.out.println("Interest gained:"+amount\*0.085);}

if(no\_Of\_months>12 && no\_Of\_months <= 15)

{System.out.println("Interest gained:"+amount\*0.0875);}

if(no\_Of\_months>=15 && no\_Of\_months <= 18)

{System.out.println("Interest gained:"+amount\*0.09);}

if(no\_Of\_months>=18 && no\_Of\_months <= 21)

{System.out.println("Interest gained:"+amount\*0.0925);}

}

return 0;

}}

public class project2

{

public static void main(String []args)

{

int a;

while(true)

{

Scanner s=new Scanner(System.in);

System.out.println("\n\n");

System.out.println("1. Interest Calculator –SB");

System.out.println("2. Interest Calculator –FB");

System.out.println("3. Interest Calculator –RD");

System.out.println("4. Exit");

a = s.nextInt();

switch (a)

{

case 1:

Account sb=new SB\_Account();

sb.cal\_interest();

break;

case 2:

Account fd = new FD\_Account();

fd.cal\_interest();

break;

case 3:

Account rd = new RD\_Account();

rd.cal\_interest();

break;

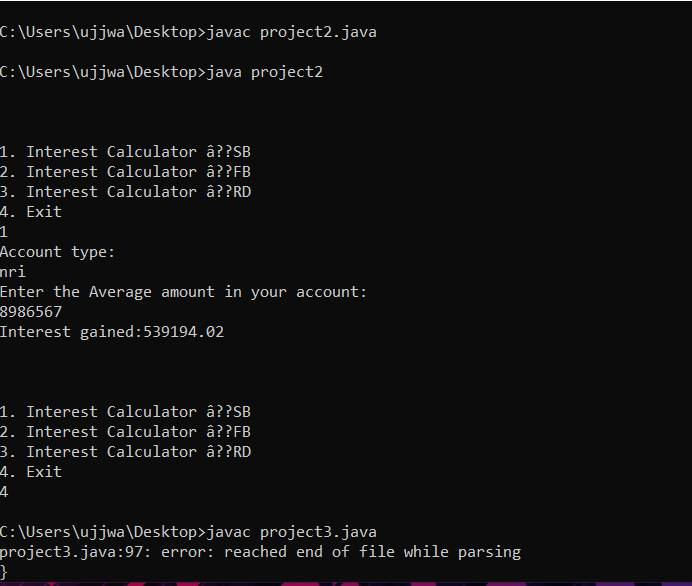
case 4:

System.exit(0);

break;

}}}}

**OUTPUT**

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