# LABMST

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**Section: 702(A)**                    **Subject: PBLJ Lab**

## CODE:

```
package com.PBLJ;

import java.util.*;

abstract class Account
{
    double interestRate;
}
class RDaccount extends Account
{
    double RDInterestRate;
    double RDamount;
    int noOfMonths;

    double General, SCitizen;
    Scanner RDScanner = new Scanner(System.in);
    double calculateInterest(double Ramount) throws
        InvalidMonthsException,InvalidAmountException ,InvalidAgeException {
      this.RDamount = Ramount;
      System.out.println("Enter RD months");
      noOfMonths = RDScanner.nextInt();
      System.out.println("Enter RD holder age");
      int age = RDScanner.nextInt();
      if (RDamount < 0)

      {
          throw new InvalidAmountException();
      }
      if(noOfMonths<0)
      {
          throw new InvalidMonthsException();
      }
      if(age<0) {
          throw new InvalidAgeException();
      }
```

```java
            if (noOfMonths >= 0 && noOfMonths <= 6)
            {
                General = .0750;
                SCitizen = 0.080;
            }
            else if (noOfMonths >= 7 && noOfMonths <= 9)
            {
                General = .0775;
                SCitizen = 0.0825;
            }
            else if (noOfMonths >= 10 && noOfMonths <= 12)
            {
                General = .0800;
                SCitizen = 0.0850;
            }
            else if (noOfMonths >= 13 && noOfMonths <= 15)
            {
                General = .0825;
                SCitizen = 0.0875;
            }
            else if (noOfMonths >= 16 && noOfMonths <= 18)
            {
                General = .0850;
                SCitizen = 0.0900;

            }
            else if (noOfMonths >= 22)
            {
                General = .0875;
                SCitizen = 0.0925;
            }
            RDInterestRate = (age < 50) ? General : SCitizen;
            return RDamount * RDInterestRate;
        }
}

class FDaccount extends Account
{
    double FDinterestRate;
    double FDAmount;
    int noOfDays;
    int ageOfACHolder;
    double General, SCitizen;
    Scanner FDScanner = new Scanner(System.in);
    double calculateInterest(double amount) throws
            InvalidAgeException,InvalidAmountException ,InvalidDaysException {
        this.FDAmount = amount;
        System.out.println("Enter FD days");
```

```java
noOfDays = FDScanner.nextInt();
System.out.println("Enter FD age holder ");
ageOfACHolder = FDScanner.nextInt();
if (amount < 0)
{
    throw new InvalidAmountException();
}
if(noOfDays<0)
{
    throw new InvalidDaysException();
}
if(ageOfACHolder<0)
{
    throw new InvalidAgeException();
}
if (amount < 10000000)
{
    if (noOfDays >= 7 && noOfDays <= 14)
    {

        General = 0.0450;
        SCitizen = 0.0500;
    }
    else if (noOfDays >= 15 && noOfDays <= 29)
    {
        General = 0.0470;
        SCitizen = 0.0525;
    }
    else if (noOfDays >= 30 && noOfDays <= 45)
    {
        General = 0.0550;
        SCitizen = 0.0600;
    }
    else if (noOfDays >= 45 && noOfDays <= 60)
    {
        General = 0.0700;
        SCitizen = 0.0750;
    }
    else if (noOfDays >= 61 && noOfDays <= 184)
    {
        General = 0.0750;
        SCitizen = 0.0800;
    }
    else if (noOfDays >= 185 && noOfDays <= 365)
    {
        General = 0.0800;
        SCitizen = 0.0850;
    }
```

```java
            FDinterestRate = (ageOfACHolder < 50) ? General : SCitizen; }
        else
        {
            if (noOfDays >= 7 && noOfDays <= 14)
            {
                interestRate = 0.065;

            }
            else if (noOfDays >= 15 && noOfDays <= 29)
            {
                interestRate = 0.0675;
            }
            else if (noOfDays >= 30 && noOfDays <= 45)
            {
                interestRate = 0.00675;
            }
            else if (noOfDays >= 45 && noOfDays <= 60)
            {
                interestRate = 0.080;
            }
            else if (noOfDays >= 61 && noOfDays <= 184)
            {
                interestRate = 0.0850;
            }
            else if (noOfDays >= 185 && noOfDays <= 365)
            {
                interestRate = 0.10;
            }
        }
        return FDAmount * FDinterestRate;
    }
}
class InvalidAgeException extends Exception
{
}
class InvalidAmountException extends Exception
{
}
class InvalidDaysException extends Exception
{

}
class InvalidMonthsException extends Exception
{
}
class InterestCalculator
{
    public static void main(String[] args)
```

```java
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("SELECT THE OPTIONS " + " \n1." + " Interest Calculator-
FD"
                + "\n2." + " InterestCalculator-RD");
        int choice = sc.nextInt();
        switch (choice)
        {
            case 1:
                try
                {
                    FDaccount fd = new FDaccount();

                    System.out.println("Enter the FD Amount");
                    double fAmount = sc.nextDouble();
                    System.out.println("Interest gained is: ₹ " +
                            fd.calculateInterest(fAmount));
                }
                catch (InvalidAgeException e)
                {
                    System.out.println("Invalid Age Entered");
                }
                catch (InvalidAmountException e)
                {
                    System.out.println("Invalid Amount Entered");
                }
                catch (InvalidDaysException e)
                {
                    System.out.println("Invalid Days Entered");
                }
                break;
            case 2:
                try
                {
                    RDaccount rd = new RDaccount();
                    System.out.println("Enter the RD amount");
                    double Ramount = sc.nextDouble();
                    System.out.println("Interest gained is: ₹ " +
                            rd.calculateInterest(Ramount));
                }
                catch (InvalidAgeException e)
                {
                    System.out.println("Invalid Age Entered");
                }
                catch (InvalidAmountException e)
                {

                    System.out.println("Invalid Amount Entered");
```

```java
            }
            catch (InvalidMonthsException e) {
                System.out.println("Invalid Days Entered");
            }
            break;

        default:
            System.out.println("Wrong choice");
            sc.close();
        }
    }
}
```

**OUTPUT**:

```
SELECT THE OPTIONS
1. Interest Calculator-FD
2. InterestCalculator-RD
1
Enter the FD Amount
100000
Enter FD days
200
Enter FD age holder
45
Interest gained is: ₹ 8000.0
```

```
SELECT THE OPTIONS
1. Interest Calculator-FD
2. InterestCalculator-RD
2
Enter the RD amount
100000
Enter RD months
14
Enter RD holder age
45
Interest gained is: ₹ 8250.0
```