Ex.No: 02	CURRENCY CONVERTER
Date:11.07.19	

Aim:

To develop a Java console application to implement currency converter,distance converter,time converter.

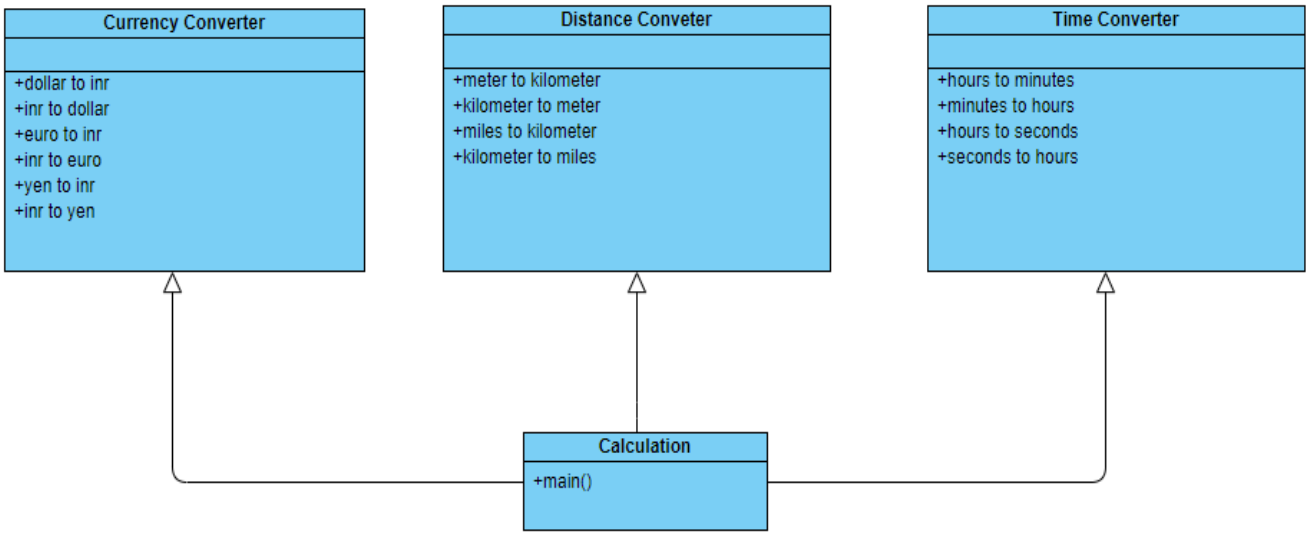
Requirement:

Develop a java application to implement currency converter (Dollar to INR, EURO to INR, Yen to INR and vice versa), distance converter (meter to KM, miles to KM and vice versa),time converter (hours to minutes, seconds and vice versa) using packages.
Create a package converter library
Create a class CurrencyConverter and define methods for Dollar to INR, EURO to INR, Yen to INR and vice versa.
Create a class DistanceConverter and define methods for meter to KM, miles to KM and vice versa
Create a class TimeConverter and define methods hours to minutes,hours to seconds and vice versa
Create a package converterapp
Create a class Calculation to use the conversion functions and display the results.

Algorithm:

STEP 1: Declare a Package as converterlibrary and converterapp.
STEP 2: Declare classnames as Currency Converter,Distance Converter and Time Converter.
STEP 3: Declare all the data members and member functions.
STEP 4: Create the package as converterapp and input all the conversion calculation from the converter library package.
STEP 5: Get the input from the user.
STEP 6: Calculate the corresponding conversion .
STEP 7: Display the result.

CLASS DIAGRAM:



Program:

CurrencyConverter.java

```
/*
 *Program to perform CurrencyConverter
 *By Faizul
 *faizulsmart10@gmail.com
 */


package converterlibrary;

import java.util.scanner;

public class CurrencyConverter {

        public static double dollartoinr(double dollar)
        {double inr;
        inr=68.52*dollar;
        return inr;
        }

        public static double inrtodollar(double inr)
        {double dollar;
        dollar=(inr/68.52)+(inr%68.52);
        return dollar;
        }

        public static double eurotoinr(double euro)
        {double inr;
        inr=77.16*euro;
```

```
        return inr;
        }

        public static double inrtoeuro(double inr)
        {double euro;;
        euro=(inr/77.16)+(inr%77.16);
        return euro;
        }

        public static double yentoinr(double yen)
        {double inr;
        inr=0.63*yen;;
        return inr;
        }

        public static double inrtoyen(double inr)
        {double yen;
        yen=(inr/0.63)+(inr%0.63);
        return yen;
        }

}
```

DistanceConverter.java

```
/*
 *Program to perform DistanceConverter
 *By Faizul
 *faizulsmart10@gmail.com
 */


package converterlibrary;

public class DistanceConverter {
        public static double metertokm (double meter)
        {double km;
        km=(meter/1000)+(meter%1000);
        return km;
        }

        public static double kmtometer (double km)
        {double meter;
        meter=km*1000;
        return meter;
        }

        public static double milestokm (double miles)
        {double km;
        km=1.609*miles;
        return km;
        }
```

```
	public static double kmtomiles (double km)
	{double miles;
	miles=(km/1.609)+(km%1.609);
	return miles;
	}

}
```

TimeConverter.java

```
/*
 *Program to perform CurrencyConverter
 *By Faizul
 *faizulsmart10@gmail.com
 */


package converterlibrary;

public class TimeConverter {

	public static double hrstomins (double hrs)
	{double mins;
	mins=60*hrs;
	return mins;
	}

	public static double minstohrs (double mins)
	{double hrs;
	hrs=(mins/60)+(mins%60);
	return hrs;
	}

	public static double hrstosecs (double hrs)
	{double secs;
	secs=60*60*hrs;
	return secs;
	}
	public static double secstohrs (double secs)
	{double hrs;
	hrs=(secs/3600)+(secs%3600);
	return hrs;
	}

}
```

Calculation.java

```
/*
 * Program to perform conversion
 * By Faizul
 * faizulsmart10@gmail.com
 */


package converterapp;

import java.util.Scanner;
import converterlibrary.CurrencyConverter;
import converterlibrary.DistanceConverter;
import converterlibrary.TimeConverter;
        public class calculation {
        public static void main (String[]args) {
                double a,b;
                int option;
                Scanner sc=new Scanner(System.in);
                while(true)
                {System.out.println("1.dollartoinr");
                System.out.println("2.inrtodollar");
                System.out.println("3.eurotoinr");
                System.out.println("4.inrtoeuro");
                System.out.println("5.yentoinr");
                System.out.println("6.inrtoyen");
                System.out.println("7.metertokm");
                System.out.println("8.kmtometer");
                System.out.println("9.milestokm");
                System.out.println("10.kmtomiles");
                System.out.println("11.hrstomins");
                System.out.println("12.minstohrs");
                System.out.println("13.hrstoecs");
                System.out.println("14.secstohrs");
                System.out.println("15.exit!");
                System.out.println("enter your choice:");

                option=sc.nextInt();
                switch(option) {
                case 1:
                System.out.print("Enter dollars:");
                a=sc.nextDouble();
                b=CurrencyConverter.dollartoinr(a);
                System.out.printf("%2fdollars=%2frupees\n",a,b);
                break;

                case 2:
                System.out.print("inr?");
                a=sc.nextDouble();
                b=CurrencyConverter.inrtodollar(a);
```

```
System.out.printf("%2finr=%2fdollars\n",a,b);
break;

case 3:
System.out.print("euro?");
a=sc.nextDouble();
b=CurrencyConverter.eurotoinr(a);
System.out.printf("%2feuros=%2finr\n",a,b);
break;

case 4:
System.out.print("inr?");
a=sc.nextDouble();
b=CurrencyConverter.inrtoeuro(a);
System.out.printf("%2finr=%2feuro\n",a,b);
break;

case 5:
System.out.print("yen?");
a=sc.nextDouble();
b=CurrencyConverter.yentoinr(a);
System.out.printf("%2fyen=%2finr\n",a,b);
break;

case 6:
System.out.print("inr?");
a=sc.nextDouble();
b=CurrencyConverter.inrtoyen(a);
System.out.printf("%2finr=%2fyen\n",a,b);
break;

case 7:
System.out.print("meter?");
a=sc.nextDouble();
b=DistanceConverter.metertokm(a);
System.out.printf("%2fmeter=%2fkm\n",a,b);
break;

case 8:
System.out.print("km?");
a=sc.nextDouble();
b=DistanceConverter.kmtometer(a);
System.out.printf("%2fkm=%2fmeters\n",a,b);
break;

case 9:
System.out.print("mile?");
a=sc.nextDouble();
b=DistanceConverter.milestokm(a);
System.out.printf("%2fmiles=%2fkm\n",a,b);
break;
```

```
                case 10:
                System.out.print("km?");
                a=sc.nextDouble();
                b=DistanceConverter.kmtomiles(a);
                System.out.printf("%2fkm=%2fmiles\n",a,b);
                break;

                case 11:
                System.out.print("hrs?");
                a=sc.nextDouble();
                b=TimeConverter.hrstomins(a);
                System.out.printf("%2fhrs=%2fmins\n",a,b);
                break;

                case 12:
                System.out.print("mins?");
                a=sc.nextDouble();
                b=TimeConverter.minstohrs(a);
                System.out.printf("%2fmins=%2fhrs\n",a,b);
                break;

                case 13:
                System.out.print("hrs?");
                a=sc.nextDouble();
                b=TimeConverter.hrstosecs(a);
                System.out.printf("%2fhrs=%2fsecs\n",a,b);
                break;

                case 14:
                System.out.print("secs?");
                a=sc.nextDouble();
                b=TimeConverter.secstohrs(a);
                System.out.printf("%2fsecs=%2fhrs\n",a,b);
                break;

                case 15:
                break;
                default:
                System.out.println("please enter a valid number:");


                }


            }


        }


}
```

Output:

```
 1.dollartoinr
 2.inrtodollar
 3.eurotoinr
 4.inrtoeuro
 5.yentoinr
 6.inrtoyen
 7.metertokm
 8.kmtometer
 9.milestokm
10.kmtomiles
11.hrstomins
12.minstohrs
13.hrstoecs
14.secstohrs
15.exit!
enter your choice:
1
Enter dollars:2000
2000.000000dollars=137040.000000rupees
```

Result:

Thus a Java console program for Currency Converter, Distance Converter,and Time Converter is verified with its output.