

Aim:

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.

Note:

1. Create a package for each converter (currency, distance, and time).
2. Implement classes for each converter inside their respective packages.
3. Use the main class to provide a user interface for selecting the type of conversion and calling the appropriate converter class.
4. Your output should match the test cases as displayed.

Assume the following values for currency converter

1 euro = 89.2 INR

1 yen = 0.67 INR

1 dollar = 74.5 INR

Source Code:**ConverterApp.java**

```
import java.util.Scanner;
import currency.CurrencyConverter;
import distance.DistanceConverter;
import time.TimeConverter;

public class ConverterApp
{
    public static void main(String args[])
    {
        int ch;
        Scanner s = new Scanner(System.in);
        CurrencyConverter c = new CurrencyConverter();
        DistanceConverter d = new DistanceConverter();
        TimeConverter t = new TimeConverter();
        System.out.println("Choose the conversion type:");
        System.out.println("1. Currency\n2. Distance\n3. Time");
        ch=s.nextInt();
        switch(ch)
        {
            case 1:
                c.curCon();
                break;
            case 2:
                d.disCon();
                break;
            case 3:
                t.timeCon();
                break;
            default:
                System.out.println("Invalid choice");
        }
    }
}
```

```
    }  
}
```

currency/CurrencyConverter.java

```
package currency;  
import java.util.Scanner;  
public class CurrencyConverter  
{  
    public void curCon()  
    {  
        Scanner s = new Scanner(System.in);  
        int ch;  
        System.out.println("Choose the currency conversion:");  
        System.out.println("1. Dollar to INR\n2. Euro to INR\n3. Yen to INR");  
        System.out.println("4. INR to Dollar\n5. INR to Euro\n6. INR to Yen");  
        ch=s.nextInt();  
        switch(ch)  
        {  
            case 1:  
                System.out.println("Enter the amount in Dollar:");  
                double v1=s.nextDouble();  
                System.out.println("INR: "+(v1*74.5));  
                break;  
            case 2:  
                System.out.println("Enter the amount in Euro:");  
                double v2=s.nextDouble();  
                System.out.println("INR: "+(v2*89.2));  
                break;  
            case 3:  
                System.out.println("Enter the amount in Yen:");  
                double v3=s.nextDouble();  
                System.out.println("INR: "+(v3*0.67));  
                break;  
            case 4:  
                System.out.println("Enter the amount in INR:");  
                double v4=s.nextDouble();  
                System.out.println("Dollar: "+(v4/74.5));  
                break;  
            case 5:  
                System.out.println("Enter the amount in INR:");  
                double v5=s.nextDouble();  
                System.out.println("Euro: "+(v5/89.2));  
                break;  
            case 6:  
                System.out.println("Enter the amount in INR:");  
                double v6=s.nextDouble();  
                System.out.println("Yen: "+(v6/0.67));  
                break;  
            default:  
                System.out.println("Invalid choice");  
        }  
    }  
}
```

distance/DistanceConverter.java

```
package distance;
import java.util.Scanner;
public class DistanceConverter
{
    public void disCon()
    {
        Scanner s = new Scanner(System.in);
        int ch;
        System.out.println("Choose the distance conversion:\n1. Meter to KM");
        System.out.println("2. KM to Meter\n3. Miles to KM\n4. KM to Miles");
        ch=s.nextInt();
        switch(ch)
        {
            case 1:
                System.out.println("Enter the distance in meters:");
                double v1=s.nextDouble();
                System.out.println("KM: "+(v1/1000));
                break;
            case 2:
                System.out.println("Enter the distance in KM:");
                double v2=s.nextDouble();
                System.out.println("Meters: "+(v2*1000));
                break;
            case 3:
                System.out.println("Enter the distance in miles:");
                double v3=s.nextDouble();
                System.out.println("KM: "+(v3*1.60934));
                break;
            case 4:
                System.out.println("Enter the distance in KM:");
                double v4=s.nextDouble();
                System.out.println("Miles: "+(v4/1.60934));
                break;
            default:
                System.out.println("Invalid choice");
        }
    }
}
```

time/TimeConverter.java

```
package time;
import java.util.Scanner;
public class TimeConverter
{
    public void timeCon()
    {
        Scanner s =new Scanner(System.in);
        int ch;
        System.out.println("Choose the time conversion:\n1. Hours to Minutes");
        System.out.println("2. Minutes to Hours\n3. Hours to Seconds\n4. Seconds to Hours");
    }
}
```

```

ch=s.nextInt();
switch(ch)
{
    case 1:
        System.out.println("Enter the time in hours:");
        int v1=s.nextInt();
        System.out.println("Minutes: "+(v1*60));
        break;
    case 2:
        System.out.println("Enter the time in minutes:");
        int v2=s.nextInt();
        System.out.println("Hours: "+(v2/60));
        break;
    case 3:
        System.out.println("Enter the time in hours:");
        int v3=s.nextInt();
        System.out.println("Seconds: "+(v3*3600));
        break;
    case 4:
        System.out.println("Enter the time in seconds:");
        int v4=s.nextInt();
        System.out.println("Hours: "+(v4/3600));
        break;
    default:
        System.out.println("Invalid choice");
}
}
}

```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Choose the conversion type: 1
1. Currency 1
2. Distance 1
3. Time 1
Choose the currency conversion: 1
1. Dollar to INR 1
2. Euro to INR 1
3. Yen to INR 1
4. INR to Dollar 1
5. INR to Euro 1
6. INR to Yen 1
Enter the amount in Dollar: 30
INR: 2235.0

Test Case - 2
User Output
Choose the conversion type: 1
1. Currency 1
2. Distance 1
3. Time 1

Choose the currency conversion: 5

1. Dollar to INR 5

2. Euro to INR 5

3. Yen to INR 5

4. INR to Dollar 5

5. INR to Euro 5

6. INR to Yen 5

Enter the amount in INR: 9000

Euro: 100.89686098654708

Test Case - 3

User Output

Choose the conversion type: 1

1. Currency 1

2. Distance 1

3. Time 1

Choose the currency conversion: 20

1. Dollar to INR 20

2. Euro to INR 20

3. Yen to INR 20

4. INR to Dollar 20

5. INR to Euro 20

6. INR to Yen 20

Invalid choice

Test Case - 4

User Output

Choose the conversion type: 2

1. Currency 2

2. Distance 2

3. Time 2

Choose the distance conversion: 1

1. Meter to KM 1

2. KM to Meter 1

3. Miles to KM 1

4. KM to Miles 1

Enter the distance in meters: 100

KM: 0.1

Test Case - 5

User Output

Choose the conversion type: 2

1. Currency 2

2. Distance 2

3. Time 2

Choose the distance conversion: 2

1. Meter to KM 2

2. KM to Meter 2

3. Miles to KM 2

4. KM to Miles 2

Enter the distance in KM: 2

Meters: 2000.0

Test Case - 6

User Output

Choose the conversion type: 2

1. Currency 2
2. Distance 2
3. Time 2

Choose the distance conversion: 3

1. Meter to KM 3
2. KM to Meter 3
3. Miles to KM 3
4. KM to Miles 3

Enter the distance in miles: 500

KM: 804.67

Test Case - 7

User Output

Choose the conversion type: 2

1. Currency 2
2. Distance 2
3. Time 2

Choose the distance conversion: 4

1. Meter to KM 4
2. KM to Meter 4
3. Miles to KM 4
4. KM to Miles 4

Enter the distance in KM: 65

Miles: 40.38922788223744

Test Case - 8

User Output

Choose the conversion type: 3

1. Currency 3
2. Distance 3
3. Time 3

Choose the time conversion: 1

1. Hours to Minutes 1
2. Minutes to Hours 1
3. Hours to Seconds 1
4. Seconds to Hours 1

Enter the time in hours: 2

Minutes: 120

Test Case - 9

User Output

Choose the conversion type: 3

1. Currency 3
2. Distance 3
3. Time 3

Choose the time conversion: 2

1. Hours to Minutes 2
2. Minutes to Hours 2
3. Hours to Seconds 2

4. Seconds to Hours 2

Enter the time in minutes: 45

Hours: 0

Test Case - 10

User Output

Choose the conversion type: 3

1. Currency 3

2. Distance 3

3. Time 3

Choose the time conversion: 3

1. Hours to Minutes 3

2. Minutes to Hours 3

3. Hours to Seconds 3

4. Seconds to Hours 3

Enter the time in hours: 2

Seconds: 7200

Test Case - 11

User Output

Choose the conversion type: 3

1. Currency 3

2. Distance 3

3. Time 3

Choose the time conversion: 4

1. Hours to Minutes 4

2. Minutes to Hours 4

3. Hours to Seconds 4

4. Seconds to Hours 4

Enter the time in seconds: 1200

Hours: 0

Test Case - 12

User Output

Choose the conversion type: 1

1. Currency 1

2. Distance 1

3. Time 1

Choose the currency conversion: 4

1. Dollar to INR 4

2. Euro to INR 4

3. Yen to INR 4

4. INR to Dollar 4

5. INR to Euro 4

6. INR to Yen 4

Enter the amount in INR: 50000

Dollar: 671.1409395973154

Test Case - 13

User Output

Choose the conversion type: 1

1. Currency 1

2. Distance 1

3. Time 1

Choose the currency conversion: 6

1. Dollar to INR 6

2. Euro to INR 6

3. Yen to INR 6

4. INR to Dollar 6

5. INR to Euro 6

6. INR to Yen 6

Enter the amount in INR: 560

Yen: 835.820895522388