Currency Converter System

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DOS : 12/07/2021

Project Name: Currency Converter System

Abstract: Currency converter system is a mini project coded in Java programming language. Different countries use different currency, and there is daily variation in these currencies relative to one another. The data used for conversion is provided below in this document. In this currency converter program, users are provided with an option to select the type of conversion, i.e. from "this" currency to "that" currency. This simple feature allows users to enter amount to be converted (say currency in Dollars), and display the converted amount (say currency in Euro).

Objective: The main objective of this project is to create currency converter which takes input amount of one currency from the user and converts to equivalent amount of another currency.

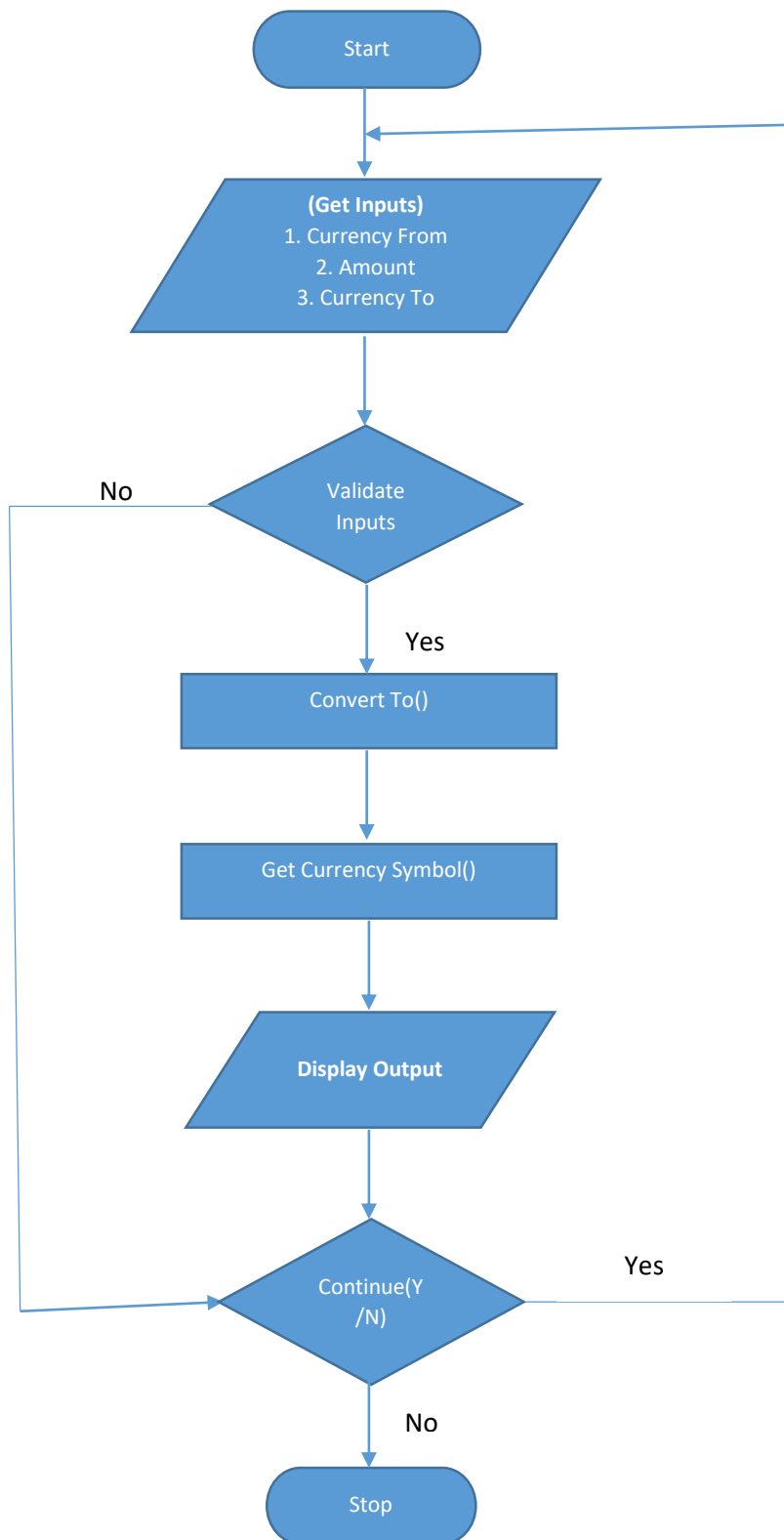**Scope:** The system converts currency of 7 countries.

User Inputs:

1. Get the currency from which the conversion is required.
2. Get the amount.
3. Get the currency to which the conversion is required.

Data Used:

The below table represents the value of each currency per unit.

	Ruppees	Dollar	Pound	Euro	Yen	Ringgit	Australian Dollar
1 Rupees		0.013	0.0097	0.11	1.48	0.056	0.018
1 Dollar	74.49		0.72	0.84	110.11	4.19	1.34
1 Pound	103.56	1.39		1.17	153.07	5.83	1.86
1 Euro	88.47	1.19	0.85		130.83	4.98	1.59
1 Yen	0.68	0.0091	0.0065	0.0076		0.038	0.012
1 Ringgit	17.78	0.24	0.17	0.20	26.33		0.32
1 Australian Dollar	55.76	0.75	0.54	0.63	82.46	3.14	

Flow Diagram:

```
                    ┌─────────────┐
                    │    Start    │
                    └─────────────┘
                           │
                           │  ◄──────────────────────┐
                           ▼                          │
              ╱───────────────────────╲              │
             ╱      (Get Inputs)        ╲             │
            │     1. Currency From       │            │
            │       2. Amount            │            │
             ╲    3. Currency To        ╱             │
              ╲───────────────────────╱              │
                           │                          │
                           ▼                          │
        No           ╱─────────────╲                  │
  ◄──────────────── ╱   Validate    ╲                 │
  │                 ╲    Inputs     ╱                  │
  │                  ╲─────────────╱                   │
  │                        │                           │
  │                        │ Yes                       │
  │                        ▼                           │
  │                ┌─────────────────┐                 │
  │                │   Convert To()  │                 │
  │                └─────────────────┘                 │
  │                        │                           │
  │                        ▼                           │
  │            ┌───────────────────────┐               │
  │            │  Get Currency Symbol()│               │
  │            └───────────────────────┘               │
  │                        │                           │
  │                        ▼                           │
  │            ╱───────────────────────╲               │
  │           ╱     Display Output       ╲             │
  │           ╲───────────────────────╱               │
  │                        │                           │
  │                        ▼                           │
  │                 ╱─────────────╲          Yes       │
  └──────────────►╱  Continue(Y    ╲─────────────────►─┘
                  ╲    /N)        ╱
                   ╲─────────────╱
                         │
                         │ No
                         ▼
                   ┌─────────────┐
                   │    Stop     │
                   └─────────────┘
```

Program:

```java
package Assignment2;
import java.util.Scanner;

 class Currency{
      String sym;
      void symbol(int a){

      switch (a)
      {
      case 1:
        sym = "Rs. ";      //Ruppees
            break;
      case 2:
            sym = "$";    //Dollar
            break;
      case 3:
            sym = "£";    //Pound
            break;
      case 4:
            sym = "€";    //Euro
            break;
      case 5:
            sym = "¥";    //Yen (Japanese)
            break;
      case 6:
            sym = "RM "; //Ringgit (Malaysian)
            break;
      case 7:
            sym = "AUD ";//AUD
            break;
      default:
            break;
      }
}
}

class Converter extends Currency{

public int fromcur,tocur;
public double amount=0, amountto=0;
      Converter(){

            System.out.println("\tWelcome to Currency Converter" );
            System.out.println("*******************************************" );
            System.out.println();
      }
public void getInput(){

            Scanner sc=new Scanner(System.in);
            System.out.println("Enter the currency you want to convert from the below
list:" );
            System.out.println();
```

```java
            System.out.println("1.Ruppee \t 2.Dollar \t 3.Pound \t 4.Euro \t 5.Yen  \t
6.Ringgit \t 7.AUD" );
            fromcur=sc.nextInt();

            System.out.println("Enter the amount: " );
            amount=sc.nextDouble();

            System.out.println("Enter the currency to which you want to convert:" );
            System.out.println("1.Ruppee \t 2.Dollar \t 3.Pound \t 4.Euro \t 5.Yen  \t
6.Ringgit \t 7.AUD" );
            tocur=sc.nextInt();
}

public int convertTo()
{
int rc=1;
switch (fromcur)
    {
        case 1: //Ruppees to other currencies
            switch (tocur)
            {
            case 2:
                    amountto = amount * 0.013;
                    break;
            case 3:
                    amountto = amount * 0.097;
                    break;
            case 4:
                    amountto = amount * 0.011;
                    break;
            case 5:
                    amountto = amount * 1.48;
                    break;
            case 6:
                    amountto = amount * 0.056;
                    break;
            case 7:
                    amountto = amount * 0.018;
                    break;
            default:
                    System.out.println("Invalid option..!!" );
                     rc=0; break;
            }
            break;
        case 2: //Dollar to other currencies
            switch (tocur)
            {
            case 1:
                    amountto = amount * 74.49;
                    break;
            case 3:
                    amountto = amount * 0.72;
                    break;
            case 4:
                    amountto = amount * 0.84;
```

```java
                break;
        case 5:
                amountto = amount * 110.11;
                break;
        case 6:
                amountto = amount * 4.19;
                break;
        case 7:
                amountto = amount * 1.34;
                break;
        default:
                System.out.println("Invalid option..!!" );
                rc=0; break;
        }
        break;
case 3: //Pound to other currencies
        switch (tocur)
        {
        case 1:
                amountto = amount * 103.56;
                break;
        case 2:
                amountto = amount * 1.39;
                break;
        case 4:
                amountto = amount * 1.17;
                break;
        case 5:
                amountto = amount * 153.07;
                break;
        case 6:
                amountto = amount * 5.38;
                break;
        case 7:
                amountto = amount * 1.86;
                break;
        default:
                System.out.println("Invalid option..!!" );
                rc=0; break;
        }
case 4: //Euro to other currencies
        switch (tocur)
        {
        case 1:
                amountto = amount * 88.47;
                break;
        case 2:
                amountto = amount * 1.19;
                break;
        case 3:
                amountto = amount * 0.85;
                break;
        case 5:
                amountto = amount * 130.83;
                break;
```

```java
        case 6:
                amountto = amount * 4.98;
                break;
        case 7:
                amountto = amount * 1.59;
                break;
        default:
                System.out.println("Invalid option..!!" );
                rc=0; break;
        }
        break;
case 5: //Yen to other currencies
                switch (tocur)
                {
                case 1:
                        amountto = amount * 0.68;
                        break;
                case 2:
                        amountto = amount * 0.0091;
                        break;
                case 3:
                        amountto = amount * 0.0065;
                        break;
                case 4:
                        amountto = amount * 0.0076;
                        break;
                case 6:
                        amountto = amount * 0.038;
                        break;
                case 7:
                        amountto = amount * 0.012;
                        break;
                default:
                        System.out.println("Invalid option..!!" );
                        rc=0; break;
                }
                break;
case 6: //Ringgit to other currencies
                switch (tocur)
                {
                case 1:
                        amountto = amount * 17.78;
                        break;
                case 2:
                        amountto = amount * 0.24;
                        break;
                case 3:
                        amountto = amount * 0.17;
                        break;
                case 4:
                        amountto = amount * 0.20;
                        break;
                case 5:
                        amountto = amount * 26.33;
                        break;
```

```java
                    case 7:
                            amountto = amount * 0.32;
                            break;
                    default:
                            System.out.println("Invalid option..!!" );
                            rc=0; break;
                    }
                    break;
        case 7: //AUD to other currencies
                    switch (tocur)
                    {
                    case 1:
                            amountto = amount * 55.76;
                            break;
                    case 2:
                            amountto = amount * 0.74;
                            break;
                    case 3:
                            amountto = amount * 0.54;
                            break;
                    case 4:
                            amountto = amount * 0.63;
                            break;
                    case 5:
                            amountto = amount * 82.46;
                            break;
                    case 6:
                            amountto = amount * 3.14;
                            break;
                    default:
                            System.out.println("Invalid option..!!" );
                            rc=0; break;
                    }
                    break;
        default:
                System.out.println("Invalid option..!!" );
                rc=0; break;
                }
                return rc;
    }
}

public class CurrencyConverter {

        public static void main(String[] args) {
                Scanner sc=new Scanner(System.in);
                Converter ob = new Converter();
                char flag='N';

                do {
                ob.getInput();
                int rc = ob.convertTo();
                ob.symbol(ob.tocur);

                if(rc != 0) //Display the output only if the convertTo() is success
```

```java
        {
        System.out.println("Converted Amount:" + ob.sym + ob.amountto );
        }
    System.out.println("Do you wish to continue: [Y/N]" );
        flag=sc.next().charAt(0);
        }
        while (flag == 'Y'||flag== 'y');

        if (flag != 'Y'||flag != 'y') //display the end note if the user select any
option other than Y or y
        {
            System.out.println();
            System.out.println("*************** Thank You ***************");
        }
        }

}
```

Output:

```
        Welcome to Currency Converter
************************************************

Enter the currency you want to convert from the below list:

1.Ruppee        2.Dollar        3.Pound         4.Euro          5.Yen           6.Ringgit       7.AUD
1
Enter the amount:
200
Enter the currency to which you want to convert:
1.Ruppee        2.Dollar        3.Pound         4.Euro          5.Yen           6.Ringgit       7.AUD
2
Converted Amount:$2.6
Do you wish to continue: [Y/N]
N

*************** Thank You ***************
```