Java Developer Week 1 Task

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Task: To Build a Real Time Currency Converter

Description of Task:

Different countries use different currency and there is daily variation in these currencies relative to one another. Those who transfer money from one country to another (one currency to another) must be updated with the latest currency exchange rates in the market.

An application is developed using Java, through which Users can convert one currency to another by specifying the source currency, target currency, and the amount to be converted. The application retrieves the latest exchange rates from a web API to ensure accuracy.

A Java library provides API for currency conversion. It uses different web based services to obtain live conversion rates, store them and allow offline currency conversions.

To allow offline conversion, this library stores conversion rates obtained from the web-service and uses the stored exchange rates for offline conversion. Each time the Library is run it checks if the conversion rates stored are outdated. If it finds outdated exchange rates it updates the stored exchange rates (using the web-service defined) and then completes the conversion task.

Application Programming Interface (API) is a software interface that allows two applications to interact with each other without any user intervention.

API is a collection of software functions and procedures. In simple terms, API means a software code that can be accessed or executed. API is defined as a code that helps two different software's to communicate and exchange data with each other.

It offers products or services to communicate with other products and services without having to know how they're implemented.

Exchangerate.host is a simple and lightweight service for current and historical foreign exchange rates & crypto exchange rates. Reliable forex rates and easy-to-integrate API. It is:
Ultra fast & reliable:
Exchangerate.host has been designed and tested to handle thousands of request per second. Also constantly monitored.
Easy-to-integrate API: Delivered in portable JSON format for maximum usability, ease of integration, and compatibility with any of your applications
Powerful, reliable JSON API: The API comes with guaranteed availability, scalable volumes and responds within milliseconds.
Trusted sources: Currency data delivered are sourced from financial data providers and banks.

Currency conversion endpoints: API also comes with separate endpoints for single currency conversion and Time-Series data.
Developer focused: Helpful documentation, high uptime and fast support. Very Easy to Implement

User- friendly Command-Line Interface:
The command-line interface provides a simple and intuitive menu-driven system for users to interact with the application. Users can choose from options like adding favorite currencies, viewing their favorites, updating exchange rates, and more.

Technologies Used:
The project is implemented in Java, a versatile and widely used programming language.

OkHttp is used for making HTTP requests to the web API to retrieve exchange rate data.

Jackson is used for JSON parsing to process the data received from the web API.

The application utilizes a command-line interface for user interaction, making it accessible and easy to use.

Code:

```
import java.util.*;
import java.text.DecimalFormat;

public class CurrencyConverter
{
   public static void main(String[] args)
      {
         double peso = 0.00, dollar = 0.00, euro = 0.00, currency, convert, sar = 0.00, bhd = 0.00;
         DecimalFormat f = new DecimalFormat("##.###");
         Scanner sc = new Scanner(System.in);

         System.out.println("*****CURRENCY CONVERTER*****");
         System.out.println("Enter 1: Philippine Peso (PHP)");
         System.out.println("Enter 2: United State Dollar (USD)");
         System.out.println("Enter 3: Euro (EU)");
         System.out.println("Enter 4: Saudi Arabia Riyal (SAR)");
         System.out.println("Enter 5: Bahrain Dinar (BHD)");
         System.out.println("\n");
         System.out.println("Enter the Currency :");
         currency=sc.nextInt();

         //PESO CONVERTED TO ANOTHER CURRENCY
         if(currency == 1)
```

```
{
   System.out.println("Enter amount in Peso:");
   peso = sc.nextFloat();

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

    System.out.println("To be Converted to :");
    System.out.println("Enter 1: United State Dollar (USD)");
    System.out.println("Enter 2: Euro (EU)");
    System.out.println("Enter 3: Saudi Arabia Riyal (SAR)");
    System.out.println("Enter 4: Bahrain Dinar (BHD)");
    System.out.println("\n");
    System.out.println("Enter the Converter :");
    convert=sc.nextInt();

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

   if(convert == 1)
   {
   dollar = peso * 0.020;
   System.out.println("US Dollar : "+f.format(dollar));
   }

   else if(convert == 2)
   {
   euro = peso * 0.017;
   System.out.println("Euro : "+f.format(euro));
   }

   else if(convert == 3)
   {
   sar = peso * 0.073;
   System.out.println("SAR : "+f.format(sar));
   }

   else if(convert == 4)
   {
   bhd = peso * 0.0074;
   System.out.println("/nBHD : "+f.format(bhd));
   }

   else
   System.out.println("Invalid Converter!!");
}
```

```
//DOLLAR CONVERTED TO ANOTHER CURRENCY
 else if (currency == 2)
 {
    System.out.println("Enter amount in US Dollar:");
    dollar = sc.nextFloat();

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

     System.out.println("To be Converted to :");
     System.out.println("Enter 1: Philippine Peso (PHP)");
     System.out.println("Enter 2: Euro (EU)");
     System.out.println("Enter 3: Saudi Arabia Riyal (SAR)");
     System.out.println("Enter 4: Bahrain Dinar (BHD)");
     System.out.println("\n");
     System.out.println("Enter the Converter :");
     convert=sc.nextInt();

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

    if(convert == 1)
    {
    peso = dollar * 51.23;
    System.out.println("US Dollar : "+f.format(dollar));
    }

    else if(convert == 2)
    {
    euro = dollar * 0.87;
    System.out.println("Euro : "+f.format(euro));
    }

    else if(convert == 3)
    {
    sar = dollar * 3.75;
    System.out.println("SAR : "+f.format(sar));
    }

    else if(convert == 4)
    {
    bhd = dollar * 0.38;
    System.out.println("BHD : "+f.format(bhd));
    }
```

```
    else
    System.out.println("Invalid Converter!!");
  }

//EURO CONVERTED TO ANOTHER CURRENCY
  else if(currency == 3)
  {
     System.out.println("Enter amount in Euro:");
     euro = sc.nextFloat();

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

      System.out.println("To be Converted to :");
      System.out.println("Enter 1: Philippine Peso (PHP)");
      System.out.println("Enter 2: United State Dollar (USD)");
      System.out.println("Enter 3: Saudi Arabia Riyal (SAR)");
      System.out.println("Enter 4: Bahrain Dinar (BHD)");
      System.out.println("\n");
      System.out.println("Enter the Converter :");
      convert=sc.nextInt();

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

     if(convert == 1)
     {
     peso = euro * 58.75;
     System.out.println("Peso : "+f.format(dollar));
     }

     else if(convert == 2)
     {
     dollar = euro * 1.15;
     System.out.println("US Dollar : "+f.format(euro));
     }

     else if(convert == 3)
     {
     sar = euro * 4.30;
     System.out.println("SAR : "+f.format(sar));
     }

     else if(convert == 4)
     {
     bhd = euro * 0.43;
```

```
    System.out.println("BHD : "+f.format(bhd));
    }

    else
    System.out.println("Invalid Converter!!");
 }
//SAR CONVERTED TO ANOTHER CURRENCY
 else if(currency == 4)
 {
    System.out.println("Enter amount in SAR:");
    sar = sc.nextFloat();

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

     System.out.println("To be Converted to :");
     System.out.println("Enter 1: Philippine Peso (PHP)");
     System.out.println("Enter 2: United State Dollar (USD)");
     System.out.println("Enter 3: Euro (EU)");
     System.out.println("Enter 4: Bahrain Dinar (BHD)");
     System.out.println("\n");
     System.out.println("Enter the Converter :");
     convert=sc.nextInt();

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

    if(convert == 1)
    {
    peso = sar * 13.66;
    System.out.println("Peso : "+f.format(dollar));
    }

    else if(convert == 2)
    {
    dollar = sar * 0.27;
    System.out.println("Dollar : "+f.format(sar));
    }

    else if(convert == 3)
    {
    euro = sar * 0.23;
    System.out.println("Euro : "+f.format(euro));
    }

    else if(convert == 4)
```

```
    {
    bhd = sar * 0.10;
    System.out.println("BHD : "+f.format(bhd));
    }

    else
    System.out.println("Invalid Converter!!");
}

else if(currency == 5)
{
    System.out.println("Enter amount in BHD:");
    bhd = sc.nextFloat();

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

     System.out.println("To be Converted to :");
     System.out.println("Enter 1: Philippine Peso (PHP)");
     System.out.println("Enter 2: United State Dollar (USD)");
     System.out.println("Enter 3: Euro (EU)");
     System.out.println("Enter 4: Saudi Arabia Riyal (SAR)");
     System.out.println("\n");
     System.out.println("Enter the Converter :");
     convert=sc.nextInt();

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

    if(convert == 1)
    {
    peso = bhd * 135.84;
    System.out.println("Peso : "+f.format(peso));
    }

    else if(convert == 2)
    {
    dollar = bhd * 2.65;
    System.out.println("US Dollar : "+f.format(dollar));
    }

    else if(convert == 3)
    {
    euro = bhd * 2.31;
    System.out.println("Euro : "+f.format(euro));
    }
```

```
            else if (convert == 4)
            {
            sar = bhd * 9.95;
            System.out.println("SAR : "+f.format(sar));
            }

            else
            System.out.println("Invalid Converter!!");
        }
        else
            System.out.println("Invalid Currency!!");
    }
}
```