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Project: Foreign currency exchange and fee calculator

Description:

Program converts a purchase made with a foreign currency to US Dollars, including credit card and bank fees.

Scope:
1. Limited to 8 statically defined currencies
   a. Euro
   b. British Pound
   c. Indian Rupee
   d. Mexican Peso
   e. Canadian Dollar
   f. Australian Dollar
   g. Japanese Yen
   h. Chinese Yuan Renminbi
2. Exchange rate is static and values are from 6/17/2017
3. Conversion rate fee(3%) is an average

External Sources used

Current exchange rates: http://www.x-rates.com/table/?from=USD.
Transaction Fees:https://www.valuepenguin.com/credit-card-foreign-transaction-fees.

Includes:
Iostream
Used for cout/cin
Iomanip
Used to manipulate cout
Utility
Needed for pair
String
needed for string variables
Math.h
Needed for basic arithmatic
Limits
Needed for numeric_limits

Functions:
int getCurrencyType();
Gets currency choice using cin and does input validation

double getPurchasePrice()

        Gets purchase price using cin and does input validation

void currencyChoiceMenu();

        Displays choice menu using cout

pair<string,double> getCurrencyData(int currencyType);

        returns currency name and exchange rate. Uses currencyType input variable

Constants:

        double conversionFee = 0.03

                Combined fees charged by CC company and banks

Input Variables:

        double purchasePrice

         Purchase price prior to conversion to USD

        int currencyChoice

                used in choice menu selection for foreign currency type

Output Variables:

        double totalFees

                Total calculated fees of purchase

        double totalFeesUSD

                Total calculated fees of purchase in USD

        double purchasePriceUSD

                Currency converted to USD

        double totalCost

                purchaseprice + fees

        double totalCostUSD

                purchaseprice + fees(USD)

        double exchangeRate

                Exchange rate used to convert currency to USD

        double totalCostDiff

                Price difference once fees and exchange rate are calulated

        string currencyName

                Friendly name of currency

        pair<string, double> currencyData;

                contains currency name and exchange rate

Application Flow

```
Start

Get Purchase Price

Get Currency Type  ────────►  Switch
                              Currency Type

        Case 1  ────────►  CurrencyType = Euro
                           Exchange Rate = 1.118863

        Case 2  ────────►  CurrencyType = British Pound
                           Exchange Rate = 1.277844

        Case 3  ────────►  CurrencyType = Indian Rupee
                           Exchange Rate = 0.015516

        Case 4  ────────►  CurrencyType = Mexican Peso
                           Exchange Rate = 0.055826

        Case 5  ────────►  CurrencyType = Canadian Dollar
                           Exchange Rate = 0.756819

        Case 6  ────────►  CurrencyType = Australian Dollar
                           Exchange Rate = 0.756819

        Case 7  ────────►  CurrencyType = Japanese Yen
                           Exchange Rate = 0.009027

        Case 8  ────────►  CurrencyType = Chinese Yuan Renminbi
                           Exchange Rate = 0.146835

totalFees =
purchasePrice * 0.03

totalCost = totalFees
+ purchasePrice

purchasePriceUSD =
purchasePrice *
exchangeRate

totalFeesUSD =
totalFees *
exchangeRate

totalCostUSD =          ────────►  Output(Line Items)
purchasePriceUSD +                 Currency Name
totalFeesUSD                       Conversion Fee Rate
                                   Exchange Rate
                                   Purchase Price
                                   Fees
                                   Total Cost
                                   PurchaePriceUSD
                                   Fees USD
                                   Total Cost USD

                                        END
```