

# Programming Logic - Beginning

152-101

## Currency Converter Program

50 points
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### General Program Requirements

Create a program to help students studying abroad do currency conversion. The user should be allowed to enter how many dollars they would like converted. The program should then calculate the equivalent number of yen, pounds and euros and display them on the screen.

### Program Design

- Provide a typed IPO for this program
- Provide a typed Solution Algorithm
- Provide a typed Desk Check
- Provide a screen design
- Provide a typed Controls, Name, and Properties list

### Detailed Program Requirements

When the form loads (not at design time), display the date YOU did the research on for the exchange rates (check out [finance.yahoo.com/currency](http://finance.yahoo.com/currency)) in a label. Do NOT use the Now function; that will change every time you run the program.

When the form loads (not at design time), assign the exchange rates you discovered to the appropriate labels on the form.

Provide a button to clear the form input and output fields.

Make the calculate button the form's Accept Button. Make the Clear button the form's Cancel button.

After calculating the equivalent foreign currency, Format all the equivalent foreign currency values to show 2 decimal places.

Use the Internet (or any other source) to locate images of British, Japanese and Euro currency. Place these near each of the equivalent currency amounts. Create a professional appearance for the form.

If the user enters an invalid exchange amount, display an appropriate error message.

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Program Evaluation Form Name: \_\_\_\_\_

## **Currency Converter (50 points):**

### **IPO**

- (1 point) Input column identifies all input fields
- (1 point) Output column identifies all Output fields
- (1 point) Meaningful variable names
- (1 point) Variable names follows naming convention
- (1 point) Processing logic describes what has to be done

### **Solution Algorithm**

- (1 point) Names in algorithm match input and output variables name in IPO
- (1 point) Processing logic gets the correct variables
- (1 point) Processing logic follows flow of logic from IPO
- (1 point) Processing logic correctly solves the problem
- (1 point) Processing logic displays the correct variables

### **Desk Check**

- (1 point) One set of test data
- (1 point) Correct expected results
- (1 point) Relevant variable names from algorithm are included in table
- (1 point) Correct statement numbers match algorithm
- (1 point) One pass thru the algorithm

### **Screen Layout**

- (1 point) Form includes all identified inputs and outputs from IPO
- (1 point) Descriptive Labels identify textbox objects
- (1 point) Descriptive Labels identify output results
- (1 point) Form has a title
- (1 point) Flow of the form is logical (layout) and consistent
- (1 point) Common controls grouped

### **Controls, Names and Properties List**

- (1 point) All controls from screen layout are listed
- (1 point) Valid control names
- (1 point) Values are listed for Controls
- (1 point) Step 1, 2, 3, and 5 are typed

### **Form Layout**

- (1 point) Textbox used to allow user to enter dollars to convert
- (1 point) Three equivalent foreign currency labels included
- (1 point) Exchange rate Date output label included
- (1 point) Form includes three pieces of clipart for Yen, Pound and Euro
- (1 point) All form objects appropriately labeled
- (1 point) Form objects have professional layout

### **Form Objects**

- (1 point) All form objects referenced in code are appropriately named
- (1 point) Button access keys are appropriate
- (1 point) Calculate button is form Accept(enter) button
- (1 point) Clear button is form Cancel(esc) button

### **Constants**

- (1 point) Constants created for exchange rates
- (1 point) Constants have appropriate name and type

### **Calculate Click Event**

- (1 point) Variables have appropriate names and data types
- (1 point) Input value properly converted to variable
- (1 point) Try-Catch used to capture dollars to convert entry errors
- (1 point) Error message appropriate
- (1 point) Equivalent currency values calculated correctly
- (1 point) Equivalent currency values formatted 2 decimals
- (1 point) Focus set to Clear button after all processing complete

### **Clear Click Event**

- (1 point) Textbox cleared
- (1 point) All output labels cleared

### **Exit Click Event**

- (1 point) Program exits properly

### **Form Load Event**

- (1 point) Research Date displayed as label
- (1 point) Student research rates displayed as labels

### **General Coding**

- (1 point) Appropriate in-line comments included