It210 final

IT 210-Final Currency Conversion Program Florence Sanders IT/210 Fundamentals of Programming with Algorithms and Logic September 16, 2012 Ed Addison Application-Level Requirements List 1. User screen that prompts user 2. Display prompts main user title screen 3. Main user screen provides short description explaining use of program 4. Calculations of currency is executed with valid inputs 5. Provides option to clear input fields Input| Process| Output|

Currency TypeCurrency AmountExchange Rate| Get user input| Currency Type Currency Amount| Currency Type| Foreign Exchange Currency | Currency Type| Enter currency amount| Calculate total| Currency Amount| Foreign Currency amount | Convert to US dollar| US currency amount| Currency TypeCurrency AmountExchange Rate| Display results| Conversion of foreign currency into US Dollars| Main Module Main Module Display_Resluts Module Display_Resluts Module Get_Int_Value Module Get_Int_Value Module Display_Menu Module Display_Menu Module Convert_Currency Module Convert_Currency Module Control Flow Diagram— Main Control -- Begin Display Menu Quit ? Provide exit message Display Menu Yes No Convert Currency Display results End Begin Display Menu Quit ? Provide exit message Display Menu Yes No Convert Currency Display results End -- Control Flow Diagram—Display Menu Begin Selection menu Valid selection ? Error 4 : Invalid menu selection No Yes End Quit ? Yes Provide exit menu Quit Verified ? Yes Take selection from user Get_Int_Value No Conversion Verified ? No Yes No Begin Selection menu Valid selection ? Error 4 : Invalid enu selection No Yes End Quit ? Yes Provide exit menu Quit Verified ? Yes

Take selection from user Get_Int_Value No Conversion Verified ? No Yes No | Control Flow Diagram—Get_Int_Value Tell user to enter number Tell user to enter number Take input from user Take input from user Error message Error message Error message Error message Error message | Control Flow Diagram—Convert Currency French ? French ? Japanese? ? Japanese? ? Mexican? Mexican? Begin Canadian ? Rate= Canadian Rate English ? No No No No No Yes Yes Yes Yes Yes Rate = Mexican rate Rate= pound rate Rate= Japanese rate Rate = French Rate Rate = 0 . 0 US Value =

Rate*Int_Value End Begin Canadian ? Rate= Canadian Rate English ? No No No No No Yes Yes Yes Yes Yes Rate = Mexican rate Rate= pound rate Rate= Japanese rate Rate = French Rate Rate = 0 . 0 US Value = Rate*Int_Value End | Control Flow Diagram—Display_Results Nation= French Currency= Francs Nation= French Currency= Francs Nation= Japanese Currency= Yen Nation= Japanese Currency= Yen Nation= English Currency= Pound Nation= English Currency= Pound Nation= Mexican Currency= Pesos Nation= Mexican Currency= Pesos Japanese ? Japanese ? English ? ? English ? ? Mexican ? Mexican ? Canadian ? Canadian ? Invalid Selection Invalid Selection |

Final Project Currency Conversion Psuedocode Main Module Declare selection as integer Declare currency Type as Integer Declare international Value as real Declare US Value as real Do while user wants to continue Display Menu Get International Value Convert Currency Display Results End Loop Print exit message End Main Module Display Menu Declare continue as Boolean Set continue = true While continue = true Display " Welcome to the international

currency conversion program" Display " Please make a selection" Display " international Currency Types:" Display " 1: Canadian Dollars"

Display " 2: Mexican Pesos" Display" 3: English Pounds" Display " 4: Japanese Yen" Display " 5: French Francs" Display " 6: Quit: Display " Enter a selection:"; Input Currency Type If Currency Type >= 1 AND currency Type <= 5 then Set continue = false Else if currency Type = 6 Display " Quitting Currency Conversion" Continue = false Else Display " Error 1: Invalid menu selection. " Continue = true End If End While End Display Menu Get International Value Declare value as integer Declare continue as Boolean Set continue = true While continue = true

Display " Enter a currency value (positive number): " Input international Value if international Value > 0 AND international Value <=(NNN) NNN-NNNNthen continue = false else Display"" Error 2: Invalid input--Negative Number" continue = true end if end while End Get International Value Convert Currency Declare rate as real Select Case of currency Type case 1: Set rate = 1. 4680 case 2: Set rate = 9. 5085 case 3: Set rate = 1. 6433 case 4: Set rate =(NNN) NNN-NNNN case 5: Set rate = 6. 2561 default: Set rate = 0. 0 End Case

US Value = rate * international Value End Convert Currency Display Results Declare nation as string Declare currency as string Select Case of currency Type case CANADIAN: nation = " Canadian"; currency = " Dollars"; case MEXICAN: nation = " Mexican"; currency = " Pesos"; case ENGLISH: nation = " English"; currency = " Pounds"; case JAPANESE: nation = " Japanese"; currency = " Yen"; case FRENCH: nation = " French"; currency = " Francs"; default: nation = " No country"; currency = ""; End Case if currency <> ""

then Display " The value of ", international Value, " " , nation, " ", currency, " is ", US Value, " dollars" lse Display " Error3: Invalid Selection. " end if End Display Results Test Cases Display Menu Test Cases Test Case 1: Valid Menu Selection = Canadian Dollars Inputs: Menu Selection = 1 Expected Outputs: " Do you want to continue with the conversion, Y = Yes, N = No" Currency type = 1 Test Case 2: Valid Menu Selection = Quit Inputs: Menu Selection = 6 Expected Outputs: " Do you want to Quit, Y = Yes, N = No" Currency type = 1 Test Case 3: Invalid Menu Selection = 9 Inputs: Menu Selection = 9 Expected Outputs: " Error 4: Please make a valid menu selection" " Hit any character or number to continue"

Menu is redisplayed Get_Int_Value Test Test Case 1: Valid International Value = 100. 0 Inputs: 100. 0 Expected Outputs: International Value = 100. 0 Test Case 2: Valid International Value = 0. 0 Inputs: 0. 0 Expected Outputs: International Value = 00. 0 Test Case 3: Invalid International Value = -15 Inputs: -15 Expected Outputs: Error 1: Invalid input—Negative Number Strike any character or numeric key to continue Test Case 4: Illegal International value = character input Input: " L" Expected Outputs: Error 2: Illegal Input, Strike any character or numeric key to continue Convert Currency Test

Test Case 1: Valid International Currency = Canadian Inputs: Currency type = 1 International value = 100. 0 Expected Output US value = 68. 12 Test Case 2: Valid International Currency = Mexican Inputs: Currency type = 2 International value = 100. 0 Expected Output US value = 10. 52 Test Case 3: Valid International Currency = English Inputs: Currency_Type = 3 Int_Value = 100. 0 Expected Output US_Value = 164. 83 Test Case 4: Valid International Currency = Japanese Inputs: Currency_Type = 4 Int_Value = 100. 0 Expected

Output US_Value = 0. 95 Test Case 5: Valid International Currency = French Inputs:

Currency_Type = 5 Int_Value = 100. 0 Expected Output US_Value = 15. 98 Test Case 6: Invalid International Currency = 6 Inputs: Currency_Type = 6 Int_Value = 100. 0 Expected Output US_Value = 0. 0 Display Results Test Cases Test Case 1: Valid International Currency = Canadian Inputs: Currency_Type = 1 Int_Value = 100. 0 US_Value = 68. 12 Expected Output The value of 100. 0 Canadian dollars is 68. 12 US dollars Test Case 2: Valid International Currency = Mexican Inputs: Currency_Type = 2 Int_Value = 100. 0 US_Value = 10. 52 Expected Output The value of 100. 0 Mexican Pesos is 10. 52 US Dollars

Test Case 3: Valid International Currency = English Inputs: Currency_Type = 3 Int_Value = 100. 0 US_Value = 164. 83 Expected Output The value of 100. 0 English pounds is 164. 33 US dollars Test Case 4: Valid International Currency = Japanese Inputs: Currency_Type = 4 Int_Value = 100. 0 US_Value = 0. 95 Expected Output The value of 100. 0 Japanese Yes is 0. 94 US dollars Test Case 5: Valid International Currency = French Inputs: Currency_Type = 5 Int_Value = 100. 0 US_Value = 15. 98 Expected Output The value of 100. 0 French Francs is 15. 98 US dollars Test Case 6: Invalid International Currency = 6 Inputs:

Currency_Type = 6 Int_Value = 100. 0 US_Value = 0. 0 Expected Output Error 5: Invalid Currency Type Currency Conversion Integration Test Test Case 1: Valid Selection = Canadian Inputs: Currency_Type = 1 Int_Value = 100. 0 US_Value = 68. 12 Expected Output The value of 100. 0 Canadian dollars is 68. 12 US dollars Test Case 2: Valid Selection = Quit Inputs:

Currency_Type = 6 Continue = " n" Expected Output Thank you for using the Currency Conversion Program Test Case 3: Illegal Currency Amount Inputs: Currency_Type = 1 Int_Value = " L" Outputs Error 2: Illegal Input Strike any character or numeric key to continue

Currency_Type = 6 Continue = " n" Expected Output Thank you for using the