Program Design – JONATHAN DANG’s Design

## Input

1. In detail indicate what the inputs to this program are?

* There are inputs on PP20.5, in which the user is prompted an area where they can specify what amount of currency is converted.

1. How do you validate the input

* If there isn’t anything inside the program box, don’t launch, as well as if the currency is below 0

1. Pseudocode: Briefly explain how this section will look like

* There are going to be many JComponents, especially the JTextField in which will be the vessel to receive input.

## Processing

1. What is this program calculating?

* Currency Exchange

1. Can we divide the calculations to the smaller “modules”

* No.

1. Pseudocode: Briefly explain how this section will look like – Each module should have its own section.

* The processing is all within the Action Listener in which would do simple arithmetic in order to calculate for the exchange rate.

## Output

1. What will this program display to the users?

* A JFrame will appear and display two ComboBoxes, 2 Textfields and a confirmation button

1. What kind of formatting this output will use (Currency with $ …)?

* It is formatted, limiting the Double variables to 2 decimal places

1. Pseudocode: Briefly explain how this section will look like

* I use a NumberFormatter object in which will invoke the format method, following it’s constructor, (#.##)

## Library

What Libraries do you need for this program?

import java.awt.BorderLayout;

import java.awt.GridLayout;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.text.DecimalFormat;

import java.text.NumberFormat;

import javax.swing.JButton;

import javax.swing.JComboBox;

import javax.swing.JFrame;

import javax.swing.JOptionPane;

import javax.swing.JPanel;

import javax.swing.JTextField;

## Initialization and constant variables

1. What variables need to be initialized?

private static final int ***FRAME\_WIDTH*** = 500;

private static final int ***FRAME\_HEIGHT*** = 300;

private static final String ***USD*** = "USD";

private static final String ***GBP*** = "GBP";

private static final String ***EUR*** = "EUR";

private static final NumberFormat ***formatter*** = new DecimalFormat("#0.00");

private JTextField \_leftSideEntry = new JTextField(10);

private JTextField \_rightSideResult = new JTextField(10);

private JButton \_entryButton = new JButton("Enter");

private JComboBox<String> \_leftSideConversion;

private JComboBox<String> \_rightSideConversion;

1. What variables need to be defined as constant

private static final int ***FRAME\_WIDTH*** = 500;

private static final int ***FRAME\_HEIGHT*** = 300;

private static final String ***USD*** = "USD";

private static final String ***GBP*** = "GBP";

private static final String ***EUR*** = "EUR";

private static final NumberFormat ***formatter*** = new DecimalFormat("#0.00");