**Task 1 – Exchanger**

Your task is to develop a simple program for a commercial currency exchange office (hereafter just called as “exchanger”). Your program will convert Euros to US dollars. As of today our imaginary exchange rate is 1.3170 (1 EUR = 1.3170 USD). The exchanger will convert a person’s Euros into US dollars using this exchange rate and then assess (subtract) a 1.25% exchange fee (this rate is expected to be constant) on the US dollars that the person receives.

This is not the end of conversion; the exchanger wants to minimize the number of different coins that must be kept in inventory. So the exchanger has decided to round the number of cents to the nearest multiple of 10. For example, if the exchange rate and exchange fees result in an exchanged number of US dollars of 1225.612346, the fractional part, the cents, will be rounded to 60 so that payable US dollars are 1225.60. Similarly, an exchanged number of US dollars of 234.47210 would become a payable number of US dollars of 234.50.

The program should accept the number of Euros to be converted via TextBox control. After that you should perform all the necessary calculations and display

* the original number of Euros to be exchanged,
* the exchange rate,
* the exchanged US dollars,
* the exchange fee and
* payable US dollars

in corresponding label controls.

Be sure to check if the amount supplied is valid. If user input is invalid your program should notify the user by showing friendly message describing the error.

**40 marks**

**Task 2 – Widgets & Gizmos**

Local manufacturer “Ziyodullo & grandchildren” makes and sells two items, which are widgets and gizmos. To limit the problem of keeping supplies in stock, the company will only let a customer order one type of item at a time. Therefore, an order will be made up of either all widgets or all gizmos. In addition, there are other restrictions on the amounts of each that can be sent in an order as given below:

**Widget Ordering Policy:** Widgets can only be ordered by the dozen. So 12 or 24 widgets would be a valid order, but 15 widgets would not be allowed. In addition, a customer cannot order more than 144 widgets in any given order. Widgets cost $0.25 each.

**Gizmo Ordering Policy:** Gizmos are sold in packs of 8. Therefore a valid gizmo order would be for 8, 16, or 24 gizmos. There is no upper limit on the number of gizmos that can be requested in any order. Gizmos cost $0.75 each.

Your task is to develop an application that will accept an order from a customer, calculate the total cost, and display a short report about the order. At first, you should accept customer’s name via a textbox control.

Another textbox should be placed to accept type of item to be ordered. The selection is to be entered as ‘g’ for gizmo or ‘w’ for widget (any other input is considered invalid). If the user enters invalid input the program should show a friendly error message.

You should also accept the number of items in the order (again via TextBox). If the input is invalid (non-numeric) or the requested number violates the item’s ordering policy, you should display friendly message (via MessageBox) explaining the problem.

After that you should calculate total cost and display order report stating

* customer name,
* product ordered (‘Widgets’ or ‘Gizmos’),
* number of items ordered and
* total cost of the order

in a message box.

**60 marks**