

## INFO125-24S2: Homework Assignment #1

This assignment is marked **out of 40**. It will contribute **8%** towards your final grade for this course.

### Instructions for Saving and Submission

Save your C# Project as **UserName-Homework1**, replacing “UserName” with your actual user name.

For example, if your user name is abc13, then the name of the project should be **abc13-Homework1**.

When you are finished, submit your **zipped C# project folder** on **Learn, Assessment | Aromatawai, Homework Assignment #1** **submission**.

Please make sure that you zip the whole project folder, not just one file.

**Due Date: Please submit your assignment by 11 p.m. on Monday 26 August**

## INFO125 C# Homework Assignment #1

Design and implement a Windows Form application that assists customers in placing their home delivered meals selections.

The screenshot shows a Windows Form application titled 'Form1'. On the left, there is a picture of a meal box. To its right, there are two sections: 'Meals' and 'Membership'. The 'Meals' section has three checkboxes: 'Two Person', 'Four Person', and 'Six Person'. The 'Membership' section has three radio buttons: 'Bronze', 'Silver', and 'Gold'. To the right of these sections, there is a table with columns 'Unit Price' and 'Amount Ordered'. The 'Unit Price' column has values '\$15', '\$20', and '\$30'. The 'Amount Ordered' column has three empty text boxes. Below the table, there are three labels: 'Discount Amount', 'Tax Amount', and 'Total Price', each followed by an empty text box. On the far right, there are three buttons: 'Calculate Price', 'Place Order', and 'Exit'. A large red diagonal watermark reading 'Example Only' is overlaid on the left side of the form.

The application should allow customers to:

- **select** the size of their home delivered meals **from 2, 4, or 6 person meal types**,
- **specify the quantity of meals**, how many meals they wanted of the three types,
- and **indicate their membership type**, thereby allowing them to calculate the total price of their order and place their order.
- The user should be able to choose **one or multiple meal sizes** from the given options and **specify the quantity they wish to order** for each meal.  
For example a user could order 2 Two Person Meals, 2 Four Person Meals and 1 Six Person Meal, for the weekend party.
- The final quantity must be within the range of **1 to 10 meals in total** over all 3 meal types (otherwise its too heavy to deliver)
- The following table lists the available meal Types and their unit prices:

Meal Type options	Unit Price
Two Person Meals	\$15.00
Four Person Meals	\$20.00
Six Person Meals	\$30.00

### Membership and Discounts:

- The meal delivery program offers three types of membership: **Bronze, Silver, and Gold**.
- The **total price** for the entire order should be adjusted based on the membership type selected by the user.
  - For **Bronze** membership type, the total price should be increased by **10%**.
  - For **Silver** membership type, the total price should be increased by **5%**.
  - **Gold** membership type should have **no adjustment** to the total price.
- The application should **calculate the total price** of the order based on the selected meal, quantity, and membership type at the user's request.
- A **single order can have multiple meals** selected by the user, and if **more than one meal type** (2,4 or 6) is ordered, the customer is entitled to a discount on the total price.
- If **two** meal types (2,4 or 6) are ordered, the customer should receive a **3% discount**, and if **all three meal types** (2,4 or 6) are ordered, a **5% discount** should be applied.
- The application should also calculate an **additional 8% tax** on the total.

### Required:

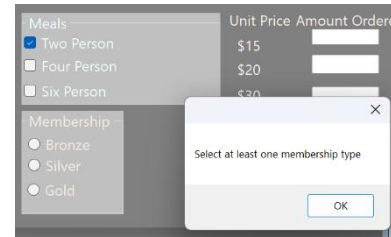
1) Create all necessary controls.

- Use a **group box with checkboxes** for the meal type options to allow the user to pick **one or more meals**.
- Use a **group box with radiobuttons** for the membership type options, so the user can **only pick one membership type**
- Use controls of your choice for the rest of the user selections.
- Include controls to display the **Discount Amount, Tax Amount, and Overall Total Price** after discount and tax are applied.
- Include **Display Price, Place Order, and Exit** buttons. (Operations described below)
- Add a suitable **image** to display the **logo**.
- Ensure that all controls are of the correct type, **have the correct properties**, and that the **names of the controls follow standard naming conventions**. (10 Marks)

2) Write a procedure for the **Display Price** button click event that contains the following:

#### Input Validation:

- It should perform input validation to check if the user has:
  - **selected at least one meal,**
  - **specified the quantity of the meals selected,**
  - and selected a **membership type.**
- A message Box should be displayed informing them of what is missing if validation fails.
- **The total price should only be calculated if the user has entered all necessary input in all three meal type categories.**
- Changing the **selected membership type** will adjust the total price of the selected meals(s) accordingly.
- It should compute the **total price** based on the **price per meal** and the **quantity** ordered for each meal.



The screenshot shows a form with two sections: 'Meals' and 'Membership'. The 'Meals' section has three radio buttons: 'Two Person' (selected), 'Four Person', and 'Six Person'. The 'Membership' section has three radio buttons: 'Bronze', 'Silver', and 'Gold'. To the right, there is a table with columns 'Unit Price', 'Amount', and 'Ordered'. The 'Unit Price' column shows '\$15', '\$20', and '\$30' for the respective meal types. A modal dialog box is open in the foreground with the text 'Select at least one membership type' and an 'OK' button.

#### Display

- It should display the **discount amount**, **tax amount**, and **overall total price** after applying the **discount** and **tax**, all with a **dollar sign** preceding them.

#### Discount for Multiple meal types

- In the case of an order of multiple meal types, it should **apply a discount amount to the total price.**
- Specifically, a **3% discount** should be applied to the total price for an order of **two** meal types (2,4 or 6), and a **5% discount** should be applied for an order of all **three** meal types.

#### Apply 8% tax at the end

- It should **calculate the discounted total from the original total**, and then add an **8% tax** on the discounted total to get the overall order total.
- Include at least **FIVE (5)** appropriate comments.

**(24 Marks)**

3) Write a procedure for the **Place Order** button click event which **clears all controls** and **displays a message to the user** indicating that the order has been placed successfully.

(4 Marks)

4) Write a procedure for the **Exit** button click event which **closes the application**.

(2 Marks)

**Total: 40 Marks**

Checklist for your program

	1	Choose multiple Meal type options 2,4,6
	2	Specify how many meals you want to order up to 10 in total
	3	If two different meal types are ordered a discount of 3% is applied
	4	If three different meal types are ordered a discount of 5% is applied
	5	Choose a membership type – Bronze, Silver, Gold
	6	Increase final cost by 5% for Silver membership
	7	Increase final cost by 10% for Bronze membership
	8	Finally 8% tax is applied.
	9	Program includes an Image
	10	Input validation to make sure at least one meal type is selected
	11	Input validation to make sure a quantity is selected for that meal type
	12	Input validation that at least one membership type is selected
	13	All validations include a messagebox message
	14	Display discount amount, Tax Amount, and Total Price with \$
	15	Include five relevant and important comments.