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Programming in C# CST-150-0500

Grand Canyon University

29th June 2025

Milestone 3

Github link: <https://github.com/Ericgathinji444/GCU>

Video link: https://youtu.be/jNpeFHcmrVA?si=AK78n1EhLxn_ZXcw

Updated Flowchart

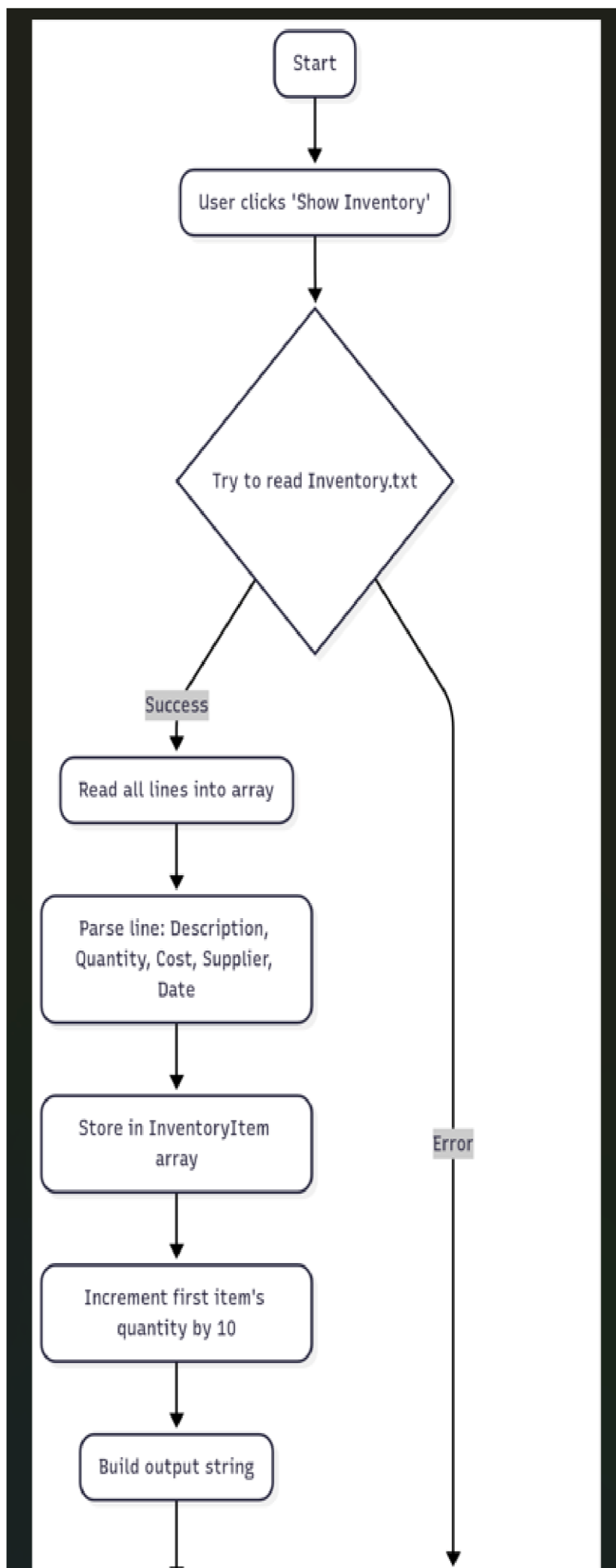


Figure 1: This flowchart shows:

The new **file read step**

The new **try/catch branch**

The **increment**

The **array**

Instead of “use primitive variables only” → it reads lines from a text file.

Adds **try/catch**

Adds **increment step**.

Then displays result.

UML CLASS DIAGRAM

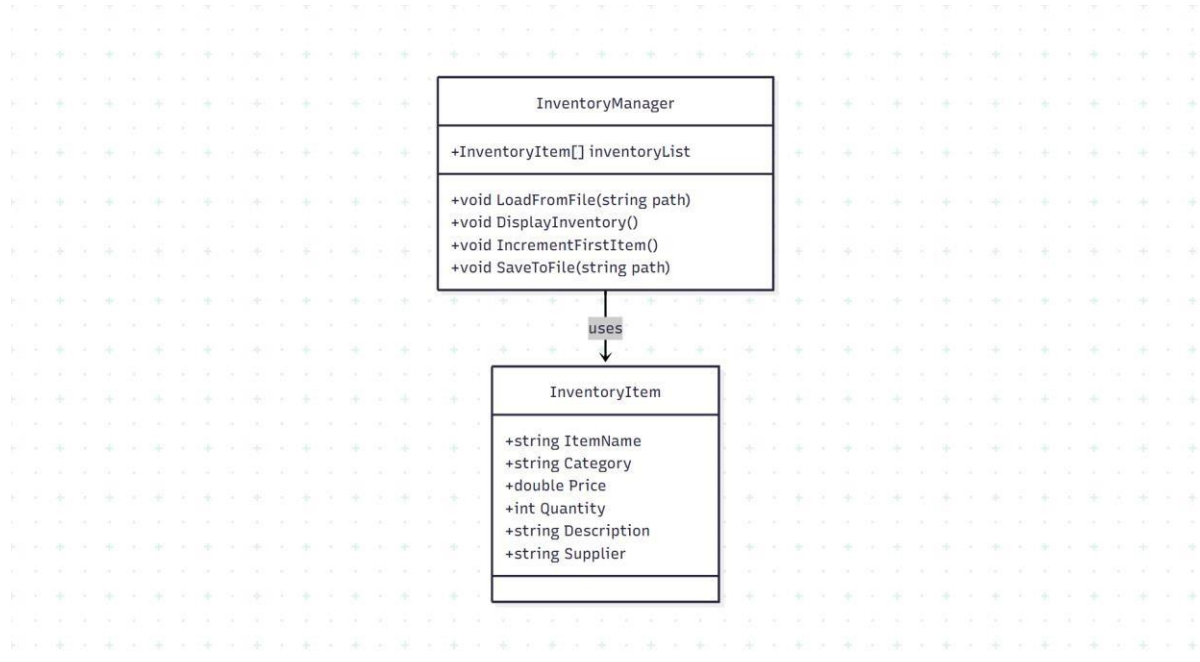


Figure 2: This UML class diagram shows the structure of the inventory application It shows two main classes: **InventoryItem**, which holds the properties of each item (such as name, category, price, quantity, and description), and **InventoryManager**, which handles the logic for loading and displaying inventory data.

Updated Wireframe:

The form design is the **same** → 1 button, 1 label.

The only update: **now shows “from file” instead of “hard-coded.”**

Wireframe:

Button: “Show Inventory”

Label: Empty by default it then shows items when Button is clicked.
It is important to know that Inventory is read from Inventory.txt

Screenshot before Form is populated:

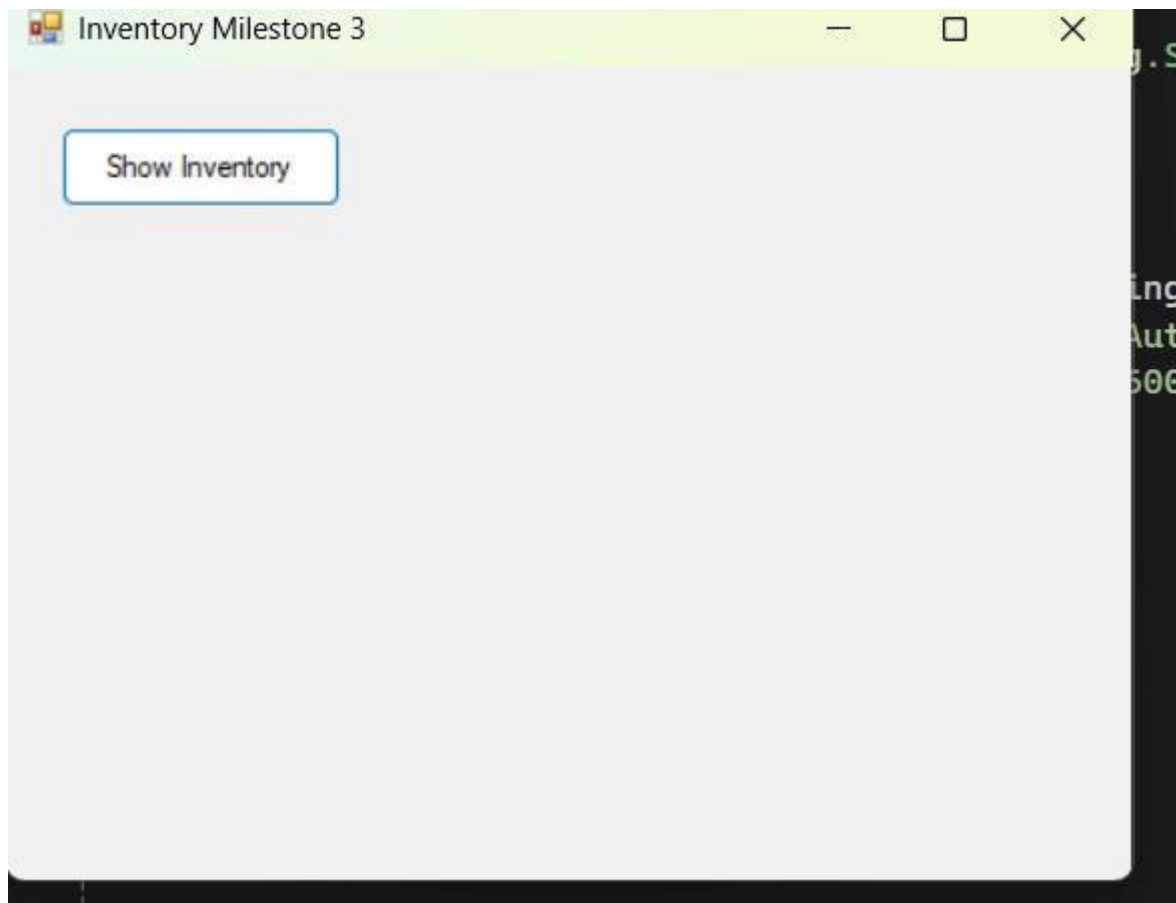


Figure 3:Form layout before clicking Show Inventory. The Label is empty.

Explanation:

This screenshot shows the form's simple layout before the user clicks the button. The button triggers the program to load data from the text file.

Krill, P. (2023, February 17). Microsoft offers Visual Studio IDE extension for .NET upgrades. InfoWorld.Com.

Yan, N. (2024). Computer Software Programming based on C Language. 2024 Asian Conference on Intelligent Technologies (ACOIT). <https://doi.org/10.1109/ACOIT62457.2024.10941661>

Tan, J., Chen, Y., & Jiao, S. (2023). Visual Studio Code in Introductory Computer Science Course: An Experience Report.

The Label starts empty and will display the inventory once the button is clicked.

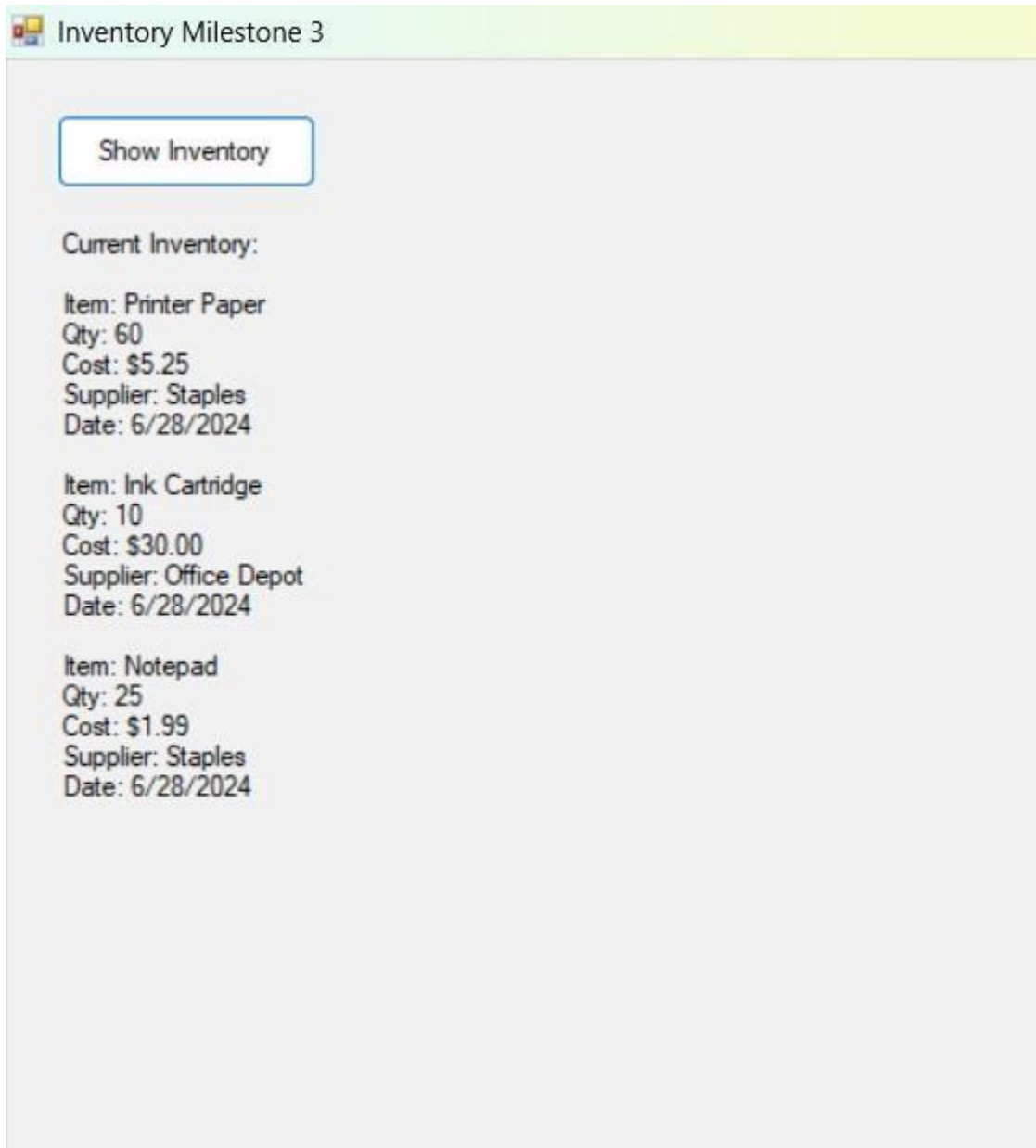
Screenshot after form is populated:

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Inventory Milestone 3

Show Inventory

Current Inventory:

Item: Printer Paper
Qty: 60
Cost: \$5.25
Supplier: Staples
Date: 6/28/2024

Item: Ink Cartridge
Qty: 10
Cost: \$30.00
Supplier: Office Depot
Date: 6/28/2024

Item: Notepad
Qty: 25
Cost: \$1.99
Supplier: Staples
Date: 6/28/2024

Figure 4:Form after clicking Show Inventory. Label displays inventory loaded from file.

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Explanation:

This screenshot shows the result after reading the text file.

The inventory items are displayed in the Label, including the incremented quantity for the first item.

This confirms that the file reading and array parsing logic work correctly.

Screenshot(s) of the code behind

```
namespace InventoryMilestone3
{
    3 references
    public partial class Form1 : Form
    {
        // Array to store inventory items
        InventoryItem[] inventory;

        1 reference
        public Form1()
        {
            InitializeComponent();
        }

        /// <summary>
        /// Handles the click event for Show Inventory button.
        /// </summary>
        1 reference
        private void btnShowInventory_Click(object sender, EventArgs e)
        {
            try
            {
                // Path to your text file (relative to bin\Debug\net7.0-windows\Data)
                string filePath = @"Data\Inventory.txt";

                // Read all lines
                string[] lines = File.ReadAllLines(filePath);

                // Initialize array
                inventory = new InventoryItem[lines.Length];

                // Loop & parse each line
                for (int i = 0; i < lines.Length; i++)
                {

```

Figure 5: Code behind for Show Inventory button

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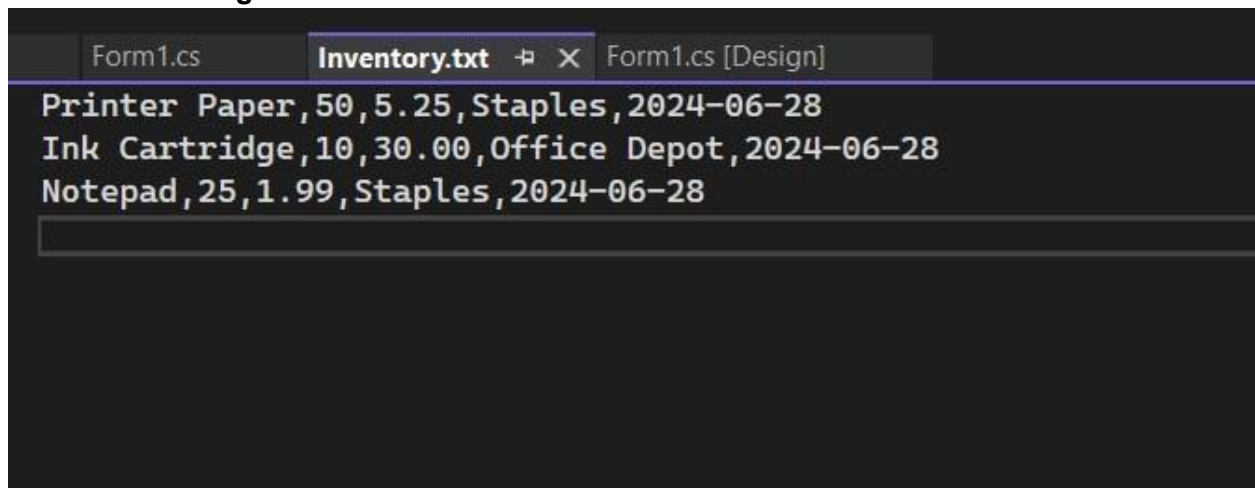
Explanation:

This code snippet shows the core logic for this milestone.

When the button is clicked, the code reads the external file line by line, splits each line into primitive properties, stores them in an array, increments the quantity for the first item, and displays the result.

Exception handling ensures that any runtime file or format error is caught gracefully.

Screenshot of original text file



```
Printer Paper,50,5.25,Staples,2024-06-28
Ink Cartridge,10,30.00,Office Depot,2024-06-28
Notepad,25,1.99,Staples,2024-06-28
```

Figure 6:Original Inventory.txt file in Data folder.

Explanation:

This file contains the inventory data used by the program.

Each line represents one inventory item with five properties separated by commas.

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The program reads this file to replace the hard-coded values from Milestone 2
ADD ONS

Programming Conventions

Naming conventions:

Classes and methods: Pascalcase-ShowInventory(), InventoryItem

Constants: ALL_CAPS, MAX_COUNT

Enums: PascalCase, ItemStatus

Interfaces: I+ PascalCase- IInventoryLoader

Files:

Docs: README.md

Code: InventoryItem.cs

Text: inventory.text

Code structure: using comments for clarification and clear identification.

Consistency: It's easy to read and easy to maintain

Computer specs The

OS – Windows 11

RAM: 8GB

Processor: Intel core i5

Tutor Discovery

I read the instructions given by my instructor professor Mark Smithers.

Weekly activity:

Start Monday: June 23, 2025: 8:00 am End: 12:00 pm Milestone 3

Start Tuesday: June 24, 2025: 8:00 am End: 12:00 pm Milestone 3

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Start Wednesday: June 26, 2025:8:00 am End:12:00 pm Activity 3

Milestone 3 research

List 3 inventory applications:

Zoho Inventory

Square for Retail

Fishbowl Inventory

Bug report; None

Follow-up questions

Milestone 3 Follow-up questions

Platform used to play the game- Xbox

Name of the Game: Forza Horizon 5

Category: Racing

Gameplay description: It provides a realistic open-world driving experience.

Gamers can race around. Although the game is easy to play and the controls are smooth, beginners may find the car upgrade system a little confusing.

How can it be improved?

Tutorials can be useful for beginners.

Describe the color scheme

The game has a colorful and dynamic color scheme. The game's realistic lighting, sunset skies and arid roads add to the driving experience.

How could it be improved?

By adding personalization effects to the visual experience by adjusting the settings.

The Key takeaway for the milestone project

By incorporating features like Forza's user freedom and open-ended exploration, I can make my project more accessible and enjoyable to use.

Bug report: None

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Follow-up questions

What was challenging?

Integrating components such as user inputs and the display logic was quite challenging.

What did you learn?

To structure my code using methods to keep the logic maintainable and organized.

How would you improve the project?

I would use input validation and feedback messages to help people use the inventory correctly.

How can you use what you learned on the job?

It made me realize how important it is to create user-friendly interfaces since doing so is essential for providing quality software.

ADD ON

Naming conventions- using the standard naming (like camelCase) makes the code easier to read.

Properties – using PascalCase. Eg

Quantity Code structure- using comments for clarification.

Consistency- The formatting is consistent throughout my project. Computer specs- The OS – Windows 11

RAM: 8GB

Processor: Intel core i5

Tutor discovery2

I reached out to my instructor Mark Smithers after my work was termed to be unsatisfactory. I read the instructions and corrected the areas I had left out.

Weekly Activity2

Start	Tuesday 1 st July 2025	End
8:00 am		12:00 pm Milestone 3
Start	Wednesday 2 nd July 2025	End
8:00 am		4:00 pm Milestone 3
Start	Thursday 3 rd July, 2025	End
9:00 am		2:00 pm Activity 3

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