Assignment No.: _____

Assignment Cover Sheet

Student Information (For group assignment, please state names of all members)		Grade/Marks
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Module/Subject Information		Office Acknowledgement
Module/Subject Code	BIT 216	
Module/Subject Name	Software Engineering Principles	
Lecturer/Tutor/Facilitator	SEETHA LETCHUMI	
Due Date	09/08/2025	
Assignment Title/Topic	EcoBite – Smart Food Waste Reduction App Assignment 1 – Task 1	
Intake (where applicable)		
Word Count	1123	**Date/Time**

Declaration

. I/We have read and understood the Programme Handbook that explains on **plagiarism**, and I/we testify that, unless otherwise acknowledged, the work submitted herein is entirely my/our own.

. I/We declare that no part of this assignment has been written for me/us by any other person(s) except where such collaboration has been authorized by the lecturer concerned.

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Note: 1) The attachment of this statement on any electronically submitted assignments will be deemed to have the same authority as a signed statement.
2) The Group Leader signs the declaration on behalf of all members.

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Feedback/Comments*
Main Strengths
Main Weaknesses
Suggestions for improvement

	Student acknowledge feedback/comments
Grader's signature	Student's signature:
Date:	Date:

Note:

1) A soft and hard copy of the assignment shall be submitted.
2) The signed copy of the assignment cover sheet shall be retained by the marker.
3) If the Turnitin report is required, students have to submit it with the assignment. However, departments may allow students up to **THREE** (3) working days after submission of the assignment to submit the Turnitin report. The assignment shall only be marked upon the submission of the Turnitin report.

*Use additional sheets if required.

Table of Contents

1.Overview

EcoBite is the project application selected from the BIT216 case study. It is a practical food waste reduction app designed for students and households in Malaysia. The app helps users keep track of food items, receive reminders before expiry dates, and donate extra food in a simple way. By combining donation, reminders, and basic analytics in one platform, EcoBite encourages better meal planning and reduces waste. The system will be developed as a web-first prototype, with attention to usability, data privacy, and accessibility for everyday users. The main deliverable for this project is a working web-first application prototype.

2. Project Aims

The aim of this project is to plan and outline the development of EcoBite, a web-based application that supports students and households in reducing food waste. The app will make it easier to see what food items are available and when they will expire, so users can act in time. It also aims to provide a simple way for users to share or donate extra food, encourage meal planning with what they already have, and protect user information with clear account and privacy controls.

3. Project Objectives

To prepare a complete project plan document that follows the customised course methodology, covering the scope, stakeholders, risks, and quality standards.

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To build a realistic Gantt schedule in GanttProject, save a baseline, and use it to monitor schedule variance.

To set up a simple collaboration system using GitHub and Google Drive for version control, documentation, and file sharing.

To comply with Malaysia's Personal Data Protection Act (PDPA) by defining secure registration, privacy settings, and ensuring user data protection to maintain trust.

To achieve quality targets of at least 90% pass rate on initial tests and 80% on subsequent edge-case tests, while maintaining accessibility standards.

4. Project Scope

In Scope. This project will cover the design of a web-first application prototype. The system will let users register and log in (with optional two-factor authentication), keep track of their food inventory and get expiry alerts, post extra items for donation, and check a simple analytics dashboard. It will also include a basic meal planning feature linked to the inventory, plus notifications with privacy controls.

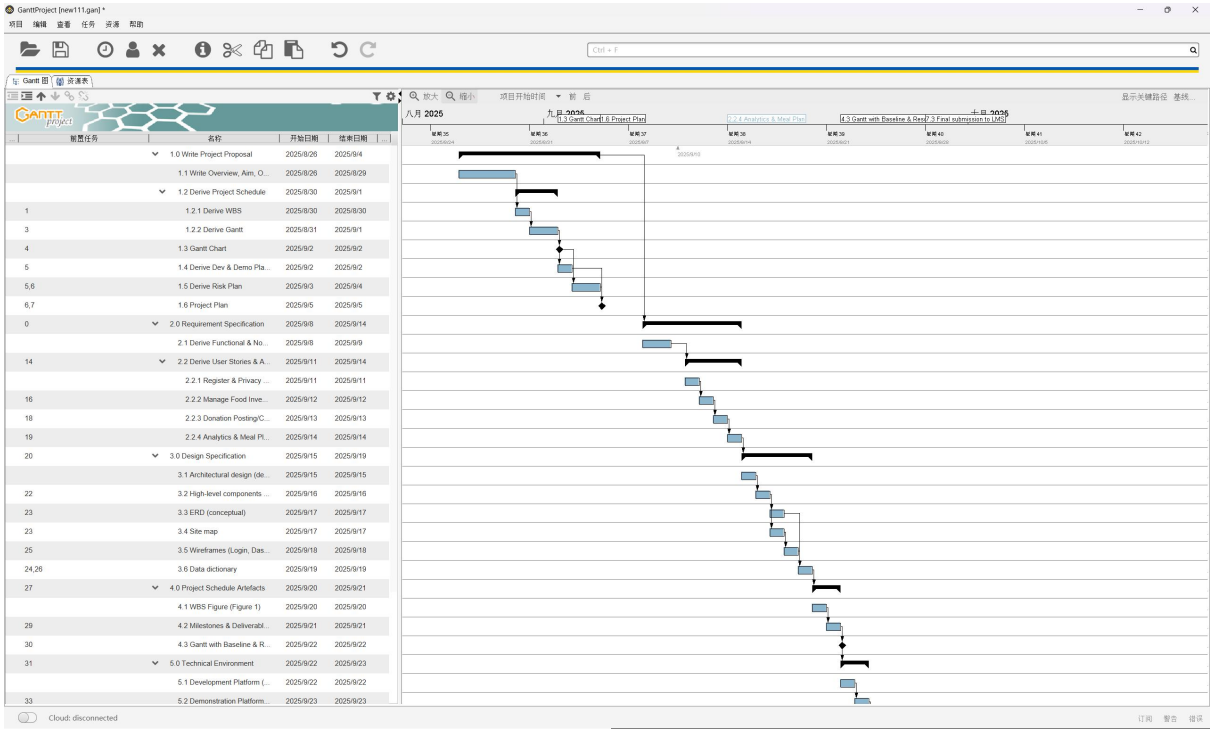
Out of Scope. The project will not deal with advanced recipe recommendations, real-time chat between donors and receivers, complicated logistics for food collection, mobile apps, or any payment and e-commerce functions.

5. Project Schedule

A45

	A	B	C	D	E	F	G
1	Tasks	Duration (days)	Precedence	Milestone/Deliverable	Member 1	Member 2	
2	1.0 Write Project Proposal						
3	1.1 Write Overview, Aim, Obj and Scope	2			100	100	
4	1.2 Derive Project Schedule						
5	1.2.1 Derive WBS	1	1.1		100	100	
6	1.2.2 Derive Gantt	1	1.2.1		100	100	
7	1.3 Gantt Chart		1.2.2	✓			
8	1.4 Derive Dev & Demo Platform	1	1.3			100	
9	1.5 Derive Risk Plan	1	1.3		100		
10	1.6 Project Plan		1.4,1.5	✓			
11	2.0 Requirement Specification		1.6				
12	2.1 Derive Functional & Non-Functional Requirements	2	2.0		100	100	
13	2.2 Derive User Stories & Acceptance Criteria	1	2.1				
14	2.2.1 Register & Privacy Setting	1	2.2		100		
15	2.2.2 Manage Food Inventory	1	2.2.1			100	
16	2.2.3 Donation Posting/Claiming	1	2.2.2		100		
17	2.2.4 Analytics & Meal Plan	1	2.2.3			100	
18	3.0 Design Specification	1	2.2.4				
19	3.1 Architectural design (deployment diagram)	1	3.0		100		
20	3.2 High-level components (frontend, backend, DB)	1	3.1			100	
21	3.3 ERD (conceptual)	1	3.2		100		
22	3.4 Site map	1	3.2			100	
23	3.5 Wireframes (Login, Dashboard, Inventory, Donations	1	3.4		100	100	
24	3.6 Data dictionary	1	3.3,3.5		100		
25	4.0 Project Schedule Artefacts		3.6				
26	4.1 WBS Figure (Figure 1)	1	4.0		100		
27	4.2 Milestones & Deliverables Figure (Figure 2)	1	4.1			100	
28	4.3 Gantt with Baseline & Resources (Figure 3)	1	4.2	✓	100	100	
29	5.0 Technical Environment		4.3				
30	5.1 Development Platform (IDE, tools, versions)	1	5.0			100	
31	5.2 Demonstration Platform (browser/OS/localhost)	1	5.0		100		
32	6.0 Risk Management		5.2				
33	6.1 Identify & assess risks	1	6.0		100		
34	6.2 Mitigation & contingency planning	1	6.1			100	
35	7.0 Final Submission		6.2				
36	7.1 Document compilation & proofreading	1	7.0		100	100	
37	7.2 References & formatting	1	7.1		100	100	
38	7.3 Final submission to LMS		7.2	✓			

Figure 1:Work breakdown Structure



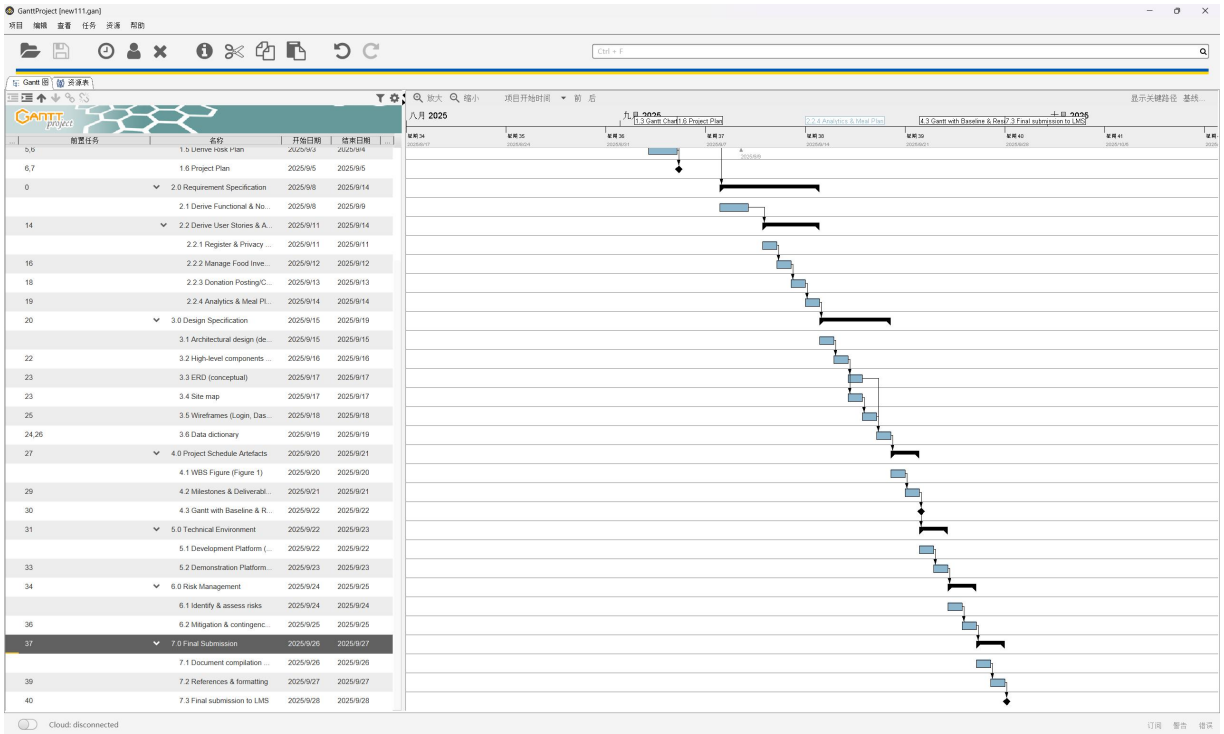


Figure 2&3:Milestones/Deliverable

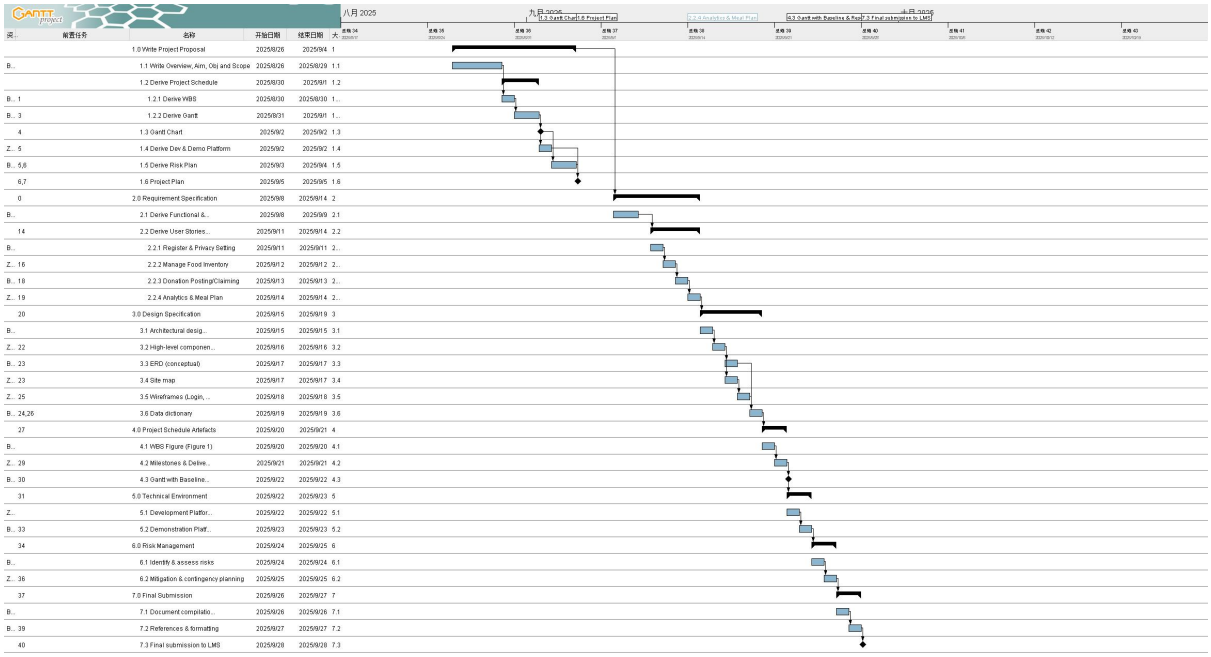


Figure 3&4:Gantt Chart

6: Technical Description of the Proposed System

This section outlines the technical environment, platforms, tools, and frameworks that will be employed for the design, implementation, testing, and documentation of the EcoBite project.

6.1 Development Platform

Criteria	Tools/Hardware	Version	Description
Documentation	Microsoft Word / Google Docs	Latest	Used for preparing reports, project documentation, and written deliverables.
Modeling (Requirement)	Draw.io / Lucidchart	Online	For creating requirement diagrams, use case diagrams, and initial system models.
Modeling (Design)	StarUML	6.x	For preparing UML class diagrams, ER diagrams, and design modeling.
Project Management	GanttProject	3.x	For creating the WBS, Gantt chart, milestones, and project schedule baseline.
Collaboration	GitHub & Google Drive	Latest	GitHub for version control and repository management; Google Drive for file sharing and collaborative editing.
Framework – Frontend	HTML5, CSS3, JavaScript	–	For building a simple and interactive user interface.
Framework – Backend	Node.js (Express) / Python (Flask)	LTS	For backend logic, API development, and database connectivity.
Database	MySQL	8.x	For storing user accounts, food items, inventory, and donation records.
Hardware (Notebook Spec)	Intel i5 / 8GB RAM / 256GB SSD	–	Standard notebook specification suitable for development and testing.

6.2 Demonstration Platform

Criteria	Tools/Hardware	Version	Description
Browser	Google Chrome	Latest	To demonstrate the EcoBite system on the client side.
Operating System	Windows 10/11, macOS	–	Ensures cross-platform compatibility.
Server Environment	Localhost (XAMPP/WAMP)	Latest	Provides a simulation of the production server environment for testing.

7: Risk Management Plan

Effective risk management is essential to ensure timely delivery of the EcoBite project. The following potential risks were identified, assessed, and mitigation strategies were proposed.

Risk	Probability	Impact	Mitigation / Contingency	**Contingency**
Team Availability	Some members may miss meetings or fail to deliver contributions on time.	Medium	Assign tasks in advance and track progress weekly.	Redistribute workload among available members; leader or substitutes take over.
Technical Skills	Limited experience with Node.js or MySQL among team members.	High	Provide short training sessions and allocate self-study tasks.	Simplify backend by using lighter tools (e.g., Google Sheets as interim storage).
Time Management	Conflicts with other assignments may cause delays.	High	Strictly follow Gantt chart and milestones; weekly check-ins.	Reduce scope to focus on core features and submit minimum viable product.
Data Loss	Risk of losing files due to device failure or mishandling.	Medium	Use GitHub and Google Drive for cloud-based backup.	Re-develop affected components using available commits or saved drafts.
Scope Creep	Adding unnecessary features beyond agreed scope.	Low	Clearly define scope in Section 4 and enforce boundaries.	Reject new requirements and prioritize only defined deliverables.

8.References

GanttProject. (2023). *GanttProject user guide*. https://www.ganttproject.biz

GitHub. (2025). *EcoBite repository*. GitHub. Retrieved September 7, 2025, from https://github.com/B1nHYu/EcoBite/tree/e1c4d095e1667e9d60b0889c145044df5fb2ef23

Government of Malaysia. (2010). Personal Data Protection Act 2010 (Act 709). Laws of Malaysia. Retrieved from https://www.pdp.gov.my