Food Inventory System for IUT Cafeteria

CSE 4408
Group : 10% SAD

Lab – 04
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Brief Overview

The Food Inventory System for the IUT Cafeteria will help manage inventory more efficiently. Currently, staff track stock manually, which causes errors and delays. The new system will automate stock tracking, send alerts and generate reports to make inventory management easier and faster.

An automated inventory system is required to track daily usage and manage stock levels efficiently

Work Breakdown Structure(WBS)

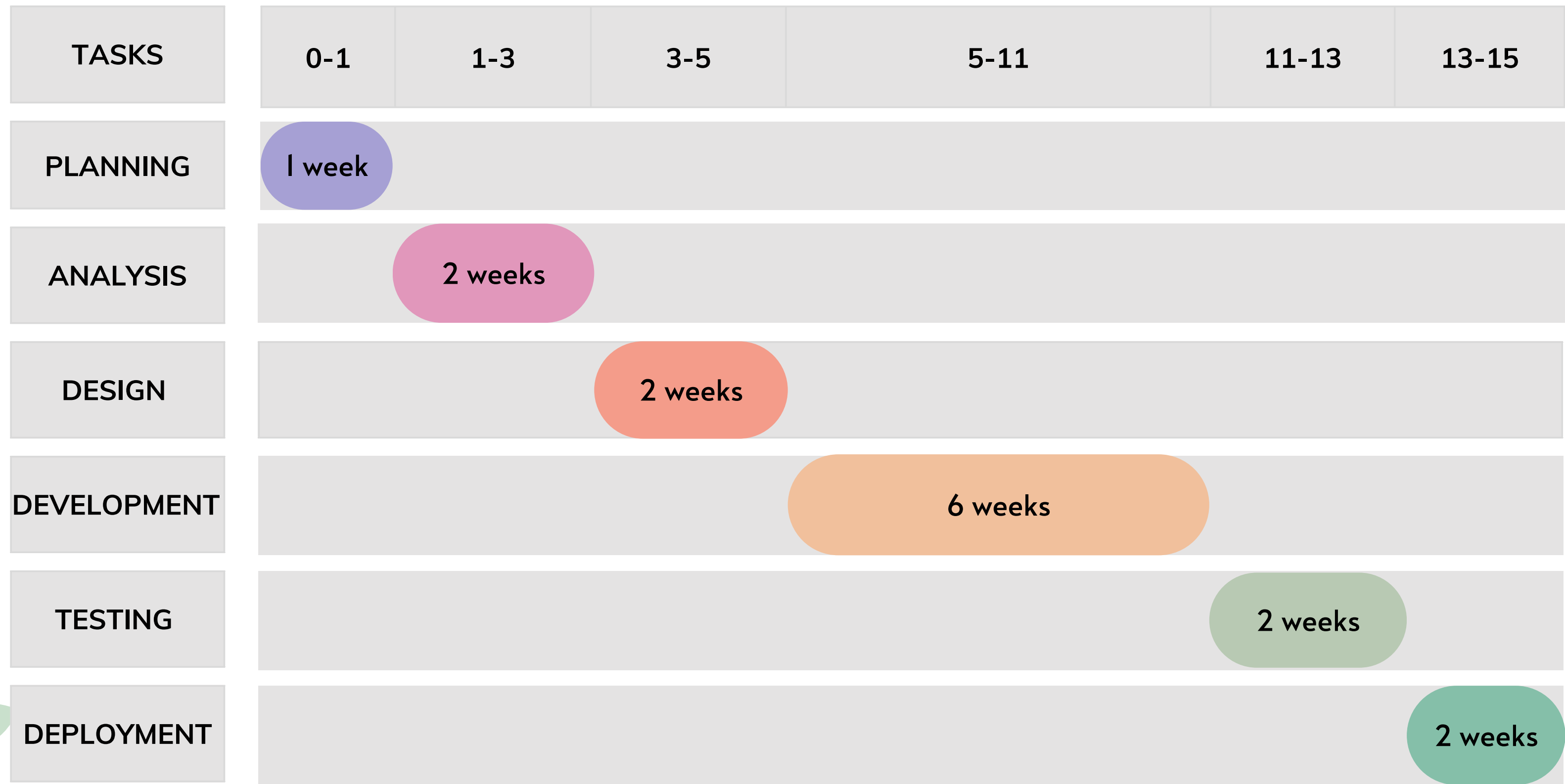| Phases	Breakdown	Alloted weeks
Planning	• Define scope and objectives • Identify stakeholders	0-1
Analysis	• Requirements gathering • Analyze existing inventory workflow	1-3
Design	• UI Mockups • Database schema design	3-5
Development	• Frontend development (React) • Backend/API setup (Node.js + Express)	5-11

Work Breakdown Structure(WBS)

Phases	Breakdown	Alloted weeks
Testing	• Unit testing • Integration testing	11-13
Deployment	• Integration with IUT database • Hosting on Firebase/Render	13-15
Maintenance	• Bug fixing • User support and updates	Ongoing
Documentation	• Document the whole process throughout	3-15

Gantt Chart

TASKS	0-1	1-3	3-5	5-11	11-13	13-15
PLANNING	1 week					
ANALYSIS		2 weeks				
DESIGN			2 weeks			
DEVELOPMENT				6 weeks		
TESTING					2 weeks	
DEPLOYMENT						2 weeks

Team Composition

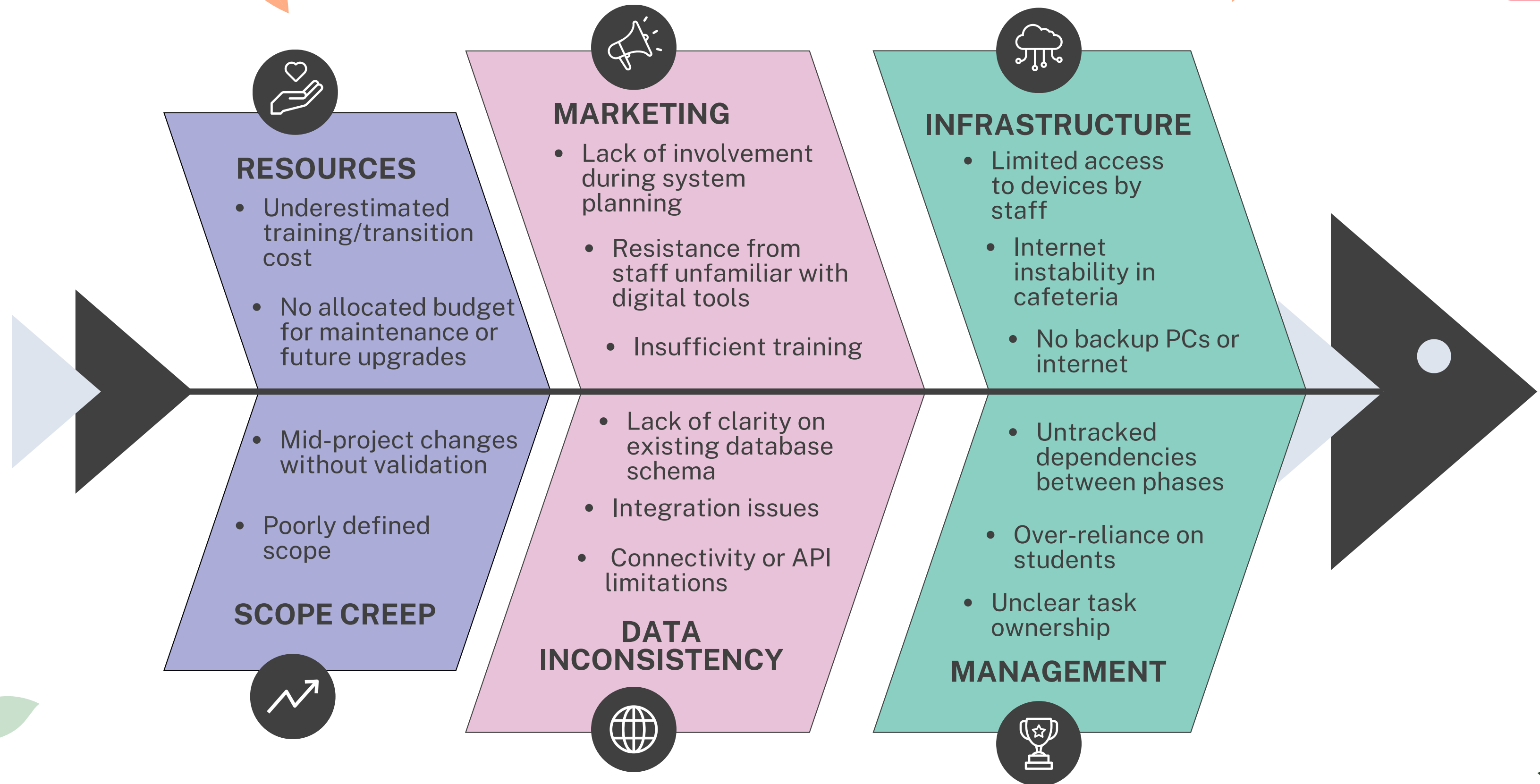| Key Roles	Skills
Business Analyst	• Requirements collection • stakeholder communication
Programmer	• Full-stack development
Database Specialist	• Schema design • IUT database integration
UI/UX Designer	• Interface mockups and user flow
Domain Expert	• Insights into cafeteria operations and constraints

Risks (Fish-Bone Diagram)

RESOURCES
- Underestimated training/transition cost
- No allocated budget for maintenance or future upgrades

- Mid-project changes without validation
- Poorly defined scope

SCOPE CREEP

MARKETING
- Lack of involvement during system planning
- Resistance from staff unfamiliar with digital tools
- Insufficient training

- Lack of clarity on existing database schema
- Integration issues
- Connectivity or API limitations

DATA INCONSISTENCY

INFRASTRUCTURE
- Limited access to devices by staff
- Internet instability in cafeteria
- No backup PCs or internet

- Untracked dependencies between phases
- Over-reliance on students
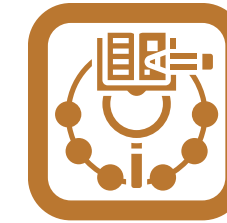- Unclear task ownership

MANAGEMENT

Project Charter

Objective
- Automate inventory tracking,
- improve accuracy
- and reduce manual effort

Scope
- Inventory tracking
- report generation
- payment system

Methodology
- SDLC - with well defined stages and documentation

Participants
- Dev team (students)
- Cafeteria Manager
- IUT IT staff (database)

Deliverables
- Web-based inventory app
- Training material
- Documentation

Timeline
- 4 months (approx.)
- 1 buffer week