MerchantDice

Lab 5 Presentation

Brought to you by: APT200

OUR TEAM

Ling Yin

Project Manager

Andre Lee

Lead Developer

Andre Lim

Frontend Developer

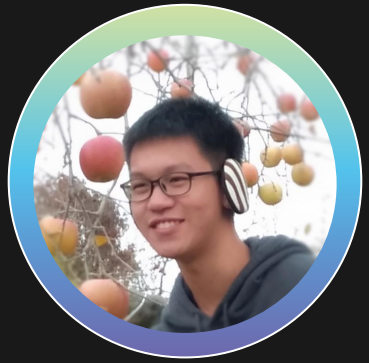
Trevor

Backend Developer

OUR TEAM

Kaisheng

QA Manager



Andrew

QA Engineer

Yang Yang

Release Engineer/Manager

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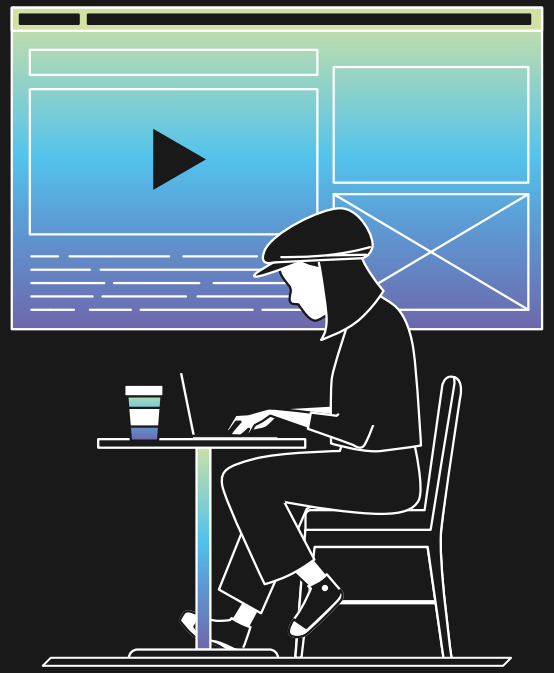
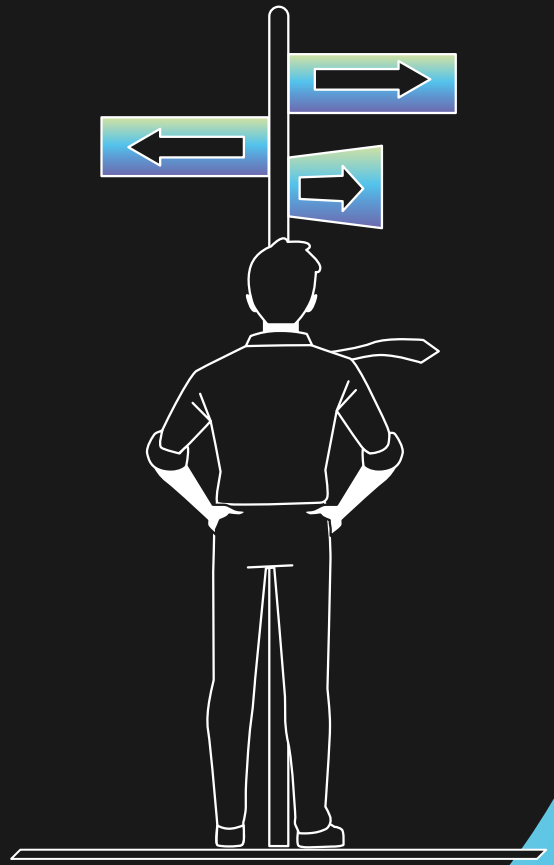
PRODUCT
INTRODUCTION



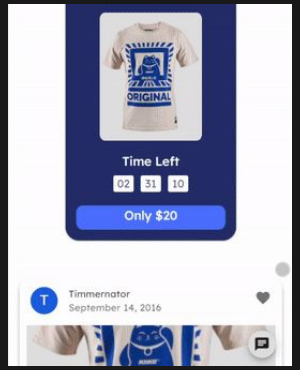
Problem Statement

With the rise of awareness about the **environmental impact of fast fashion**, thrifting - buying and selling second hand items, has become an increasingly popular means of shopping amongst Singaporeans. However, there are **little known avenues for such exchanges to take place**



SOLUTION

MerchantDice



PRODUCT OVERVIEW

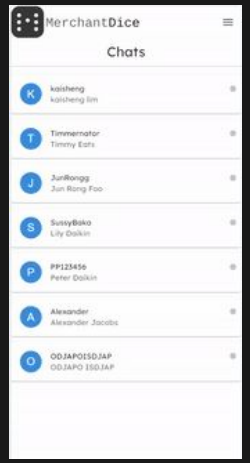
COMMUNICATE

SELL

Display. Advertise. Sell.

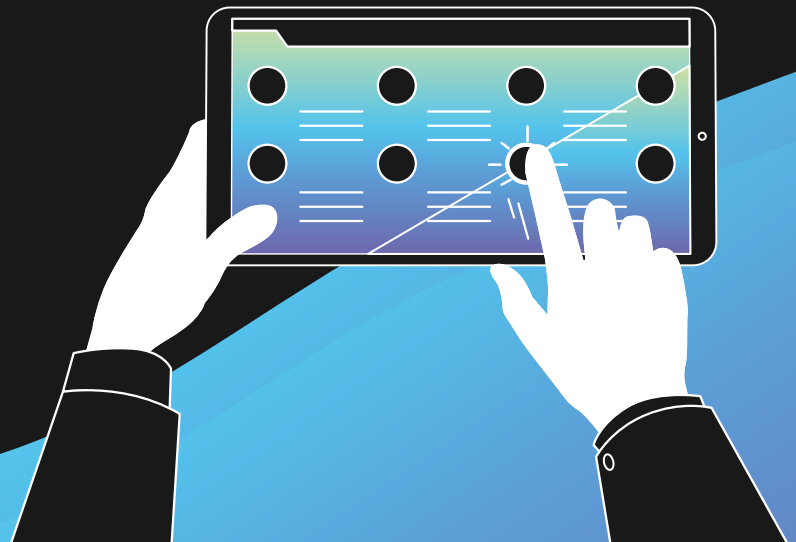
BUY

Search. Favourite. Buy.



02

PROJECT MANAGEMENT



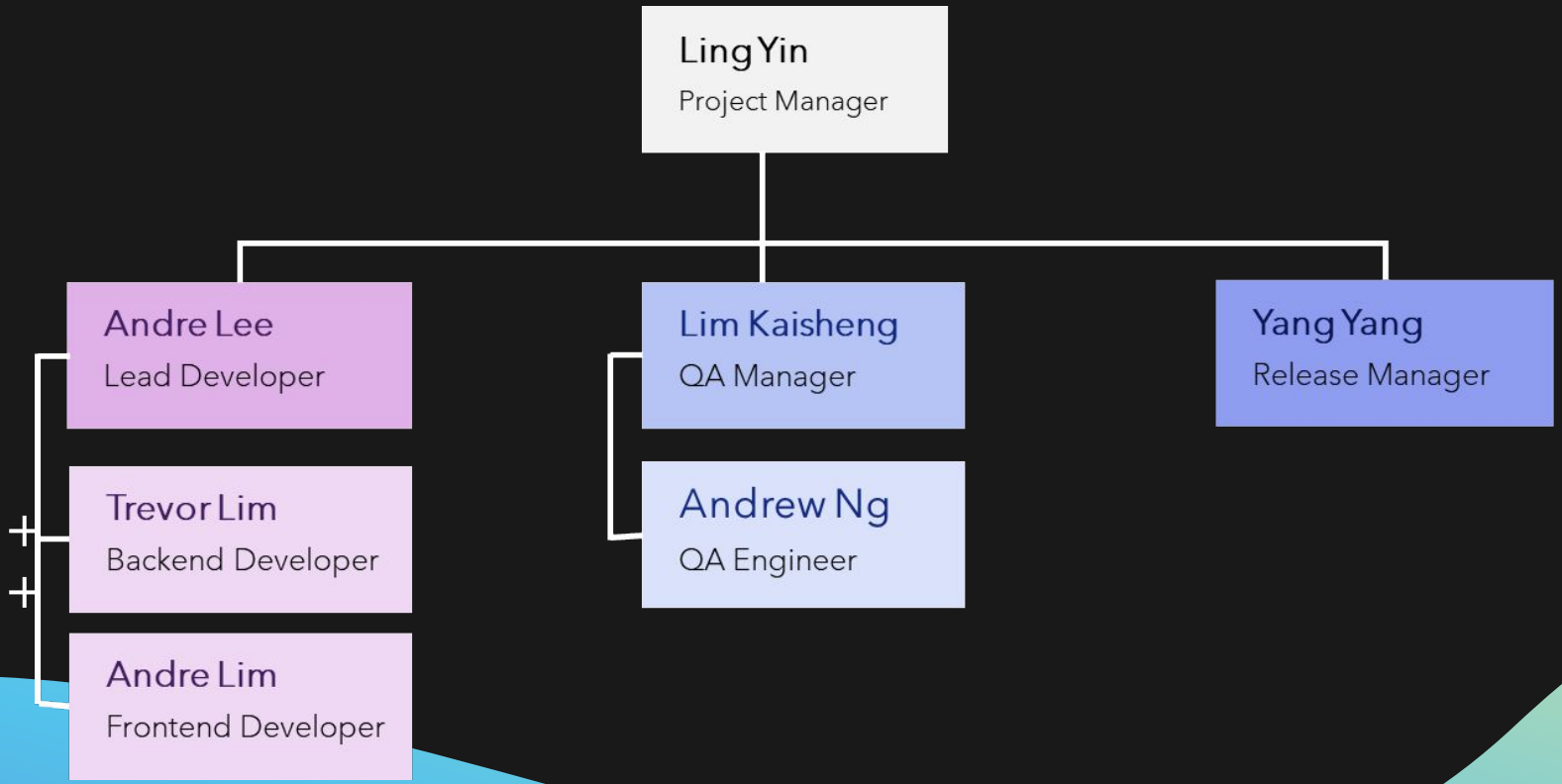
PROJECT MANAGEMENT

PROJECT ORGANISATION

PROJECT MANAGEMENT TOOLS

PROJECT ESTIMATION

ORGANISATION CHART



AGILE METHODOLOGY

Jira

Project tracking and planning app that helps to keep track of the backlog and facilitate sprint planning

\+ +

COMMUNICATION CHANNELS

Zoom

Scrum meetings are held on Zoom.

Telegram

Telegram is used for informal discussions within the team

VERSION CONTROL

Google Drive

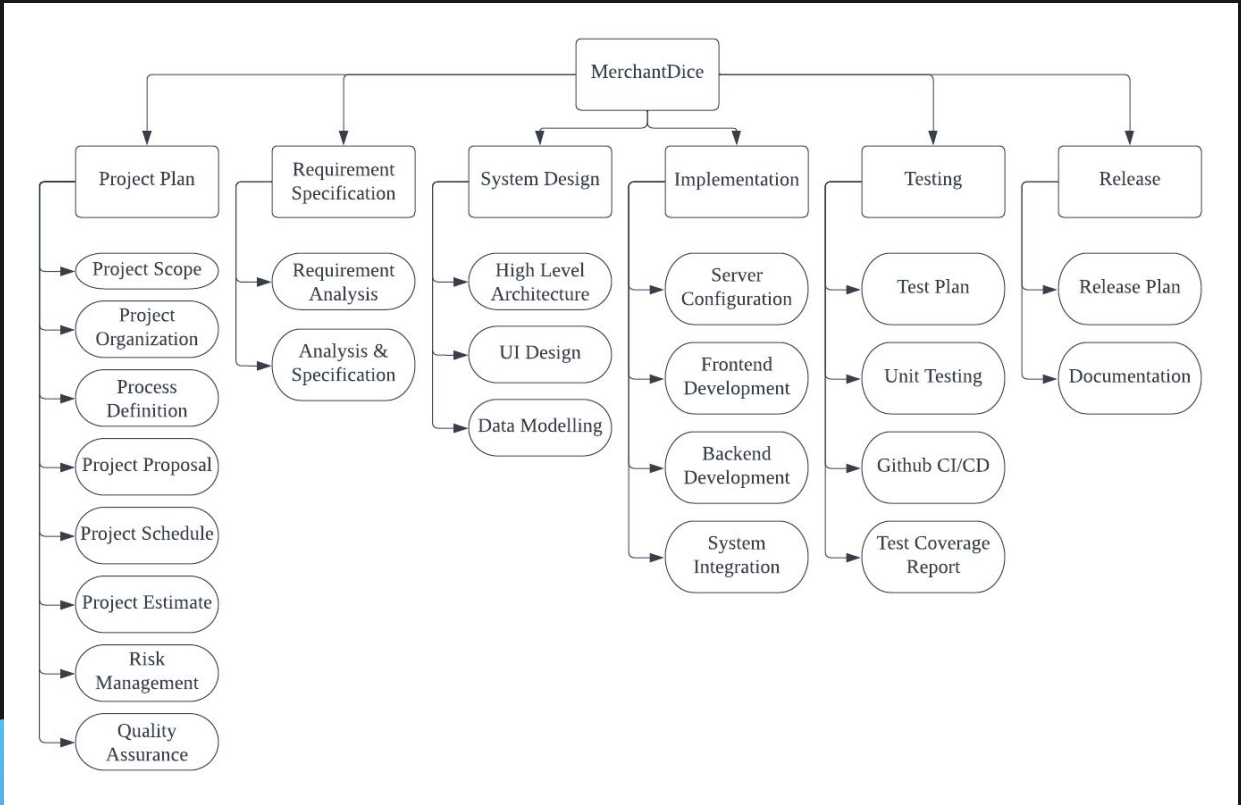
Used to do version control for documentation. Used to store meeting minutes

Github

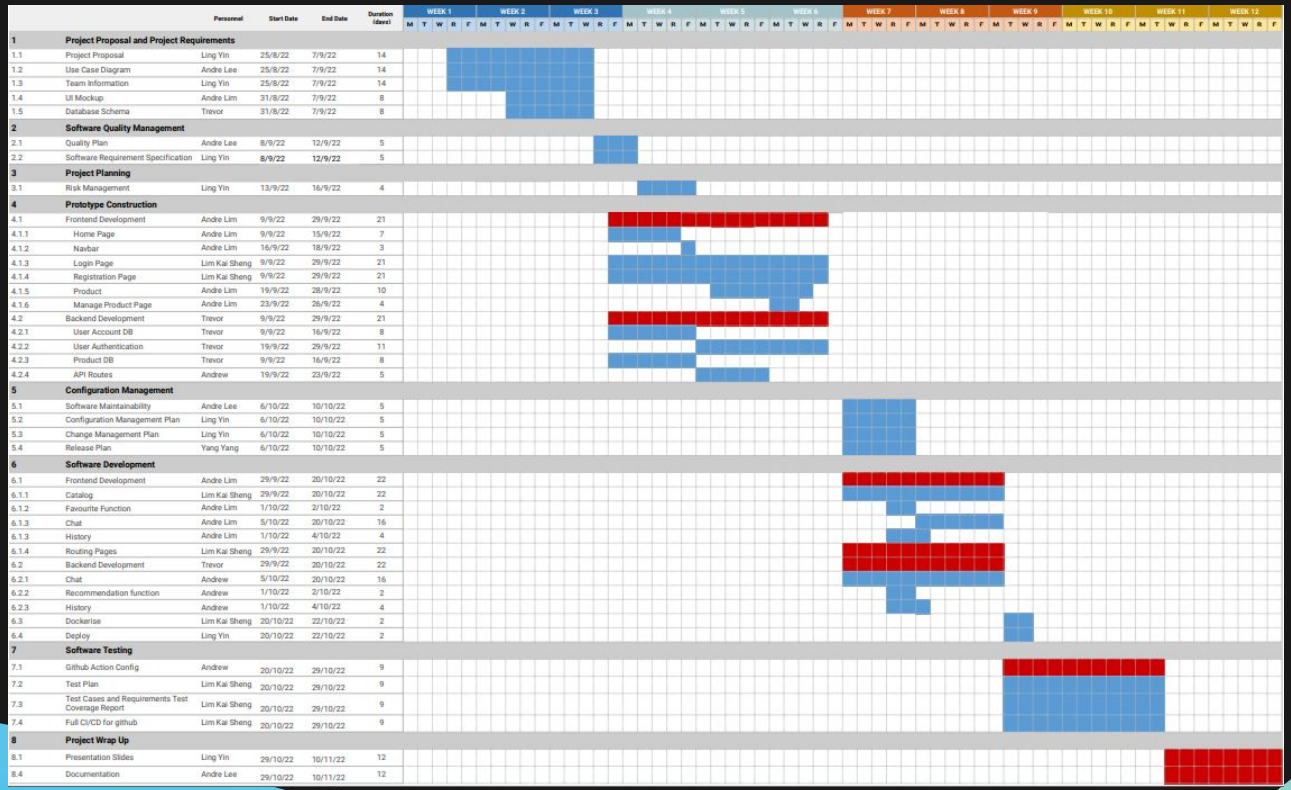
Version control for our code base

+ +

WORK BREAKDOWN STRUCTURE



PROJECT TIMELINE



		Personnel	Start Date	End Date	Duration (days)
1	**Project Proposal and Project Requirements**				
1.1	Project Proposal	Ling Yin	25/8/22	7/9/22	14
1.2	Use Case Diagram	Andre Lee	25/8/22	7/9/22	14
1.3	Team Information	Ling Yin	25/8/22	7/9/22	14
1.4	UI Mockup	Andre Lim	31/8/22	7/9/22	8
1.5	Database Schema	Trevor	31/8/22	7/9/22	8
2	**Software Quality Management**				
2.1	Quality Plan	Andre Lee	8/9/22	12/9/22	5
2.2	Software Requirement Specification	Ling Yin	**8/9/22**	**12/9/22**	5
3	**Project Planning**				
3.1	Risk Management	Ling Yin	13/9/22	16/9/22	4
4	**Prototype Construction**				
4.1	Frontend Development	Andre Lim	9/9/22	29/9/22	21
4.1.1	Home Page	Andre Lim	9/9/22	15/9/22	7
4.1.2	Navbar	Andre Lim	16/9/22	18/9/22	3
4.1.3	Login Page	Lim Kai Sheng	9/9/22	29/9/22	21
4.1.4	Registration Page	Lim Kai Sheng	9/9/22	29/9/22	21
4.1.5	Product	Andre Lim	19/9/22	28/9/22	10
4.1.6	Manage Product Page	Andre Lim	23/9/22	26/9/22	4
4.2	Backend Development	Trevor	9/9/22	29/9/22	21
4.2.1	User Account DB	Trevor	9/9/22	16/9/22	8
4.2.2	User Authentication	Trevor	19/9/22	29/9/22	11
4.2.3	Product DB	Trevor	9/9/22	16/9/22	8
4.2.4	API Routes	Andrew	19/9/22	23/9/22	5
5	**Configuration Management**				
5.1	Software Maintainability	Andre Lee	6/10/22	10/10/22	5
5.2	Configuration Management Plan	Ling Yin	6/10/22	10/10/22	5
5.3	Change Management Plan	Ling Yin	6/10/22	10/10/22	5
5.4	Release Plan	Yang Yang	6/10/22	10/10/22	5
6	**Software Development**				
6.1	Frontend Development	Andre Lim	29/9/22	20/10/22	22
6.1.1	Catalog	Lim Kai Sheng	29/9/22	20/10/22	22
6.1.2	Favourite Function	Andre Lim	1/10/22	2/10/22	2
6.1.3	Chat	Andre Lim	5/10/22	20/10/22	16
6.1.3	History	Andre Lim	1/10/22	4/10/22	4
6.1.4	Routing Pages	Lim Kai Sheng	29/9/22	20/10/22	22
6.2	Backend Development	Trevor	29/9/22	20/10/22	22
6.2.1	Chat	Andrew	5/10/22	20/10/22	16
6.2.2	Recommendation function	Andrew	1/10/22	2/10/22	2
6.2.3	History	Andrew	1/10/22	4/10/22	4
6.3	Dockerise	Lim Kai Sheng	20/10/22	22/10/22	2
6.4	Deploy	Ling Yin	20/10/22	22/10/22	2
7	**Software Testing**				
7.1	Github Action Config	Andrew	20/10/22	29/10/22	9
7.2	Test Plan	Lim Kai Sheng	20/10/22	29/10/22	9
7.3	Test Cases and Requirements Test Coverage Report	Lim Kai Sheng	20/10/22	29/10/22	9
7.4	Full CI/CD for github	Lim Kai Sheng	20/10/22	29/10/22	9
8	**Project Wrap Up**				
8.1	Presentation Slides	Ling Yin	29/10/22	10/11/22	12
8.4	Documentation	Andre Lee	29/10/22	10/11/22	12

PROJECT BUDGET

Hardware

7 x 14-inch Macbook Pro	Total Cost: $17,500
10-Core CPU	
16-Core GPU	
16GB Unified Memory	
1TB SSD Storage[1]	

PROJECT BUDGET

Software

Visual Studio Code	$0.00
Amazon AWS EC2 Instance (Deployment)	$0.00
MongoDB Database Server	$0.00
Google Drive	$0.00

PROJECT BUDGET

Other Resources

7 Employees with 772.8 working hours with $16.00/hour	$12364.80

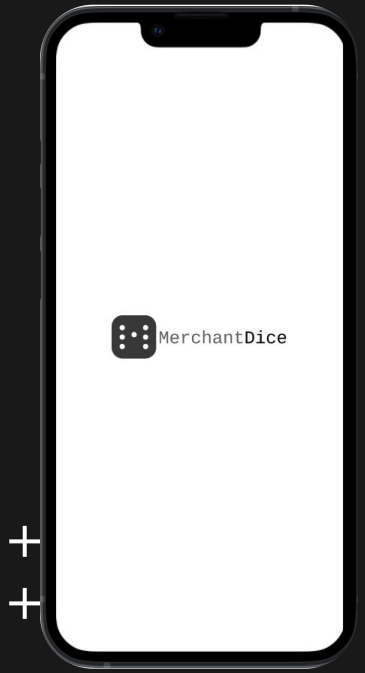
$29,864.80

Total Proposed Budget

03

DESIGN for MAINTAINABILITY

EARLY PLANNING DESIGN FOCUS



SCALABILITY

Basic vs Future Functionalities

MODULARITY

Functional requirements can change

- bcrypt
- jwt
- multer

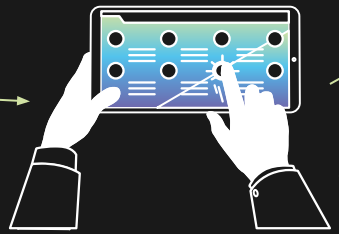
MAINTAINABILITY

Future of the project

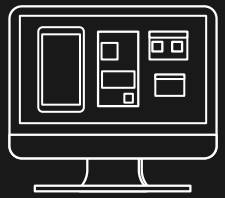
- GitHub
- ES6 Standard
- SwaggerUI

MVC ARCHITECTURE

Buyers/Sellers



Viewl



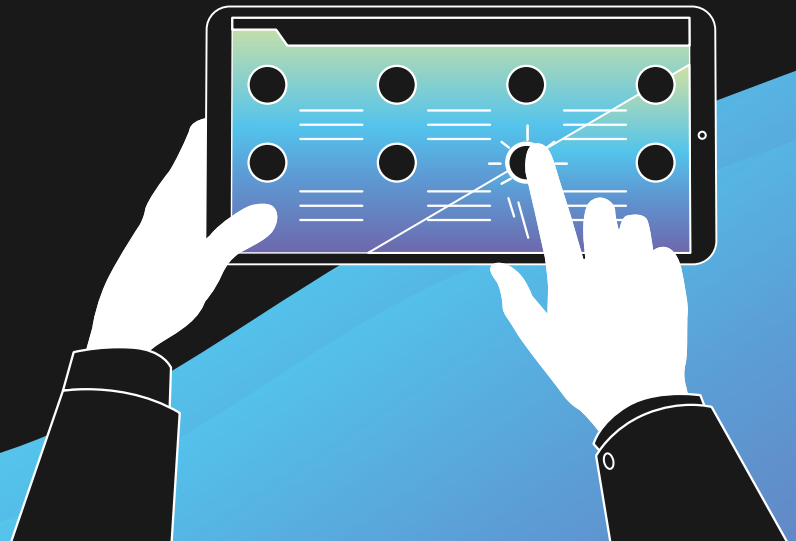
Controller

Model

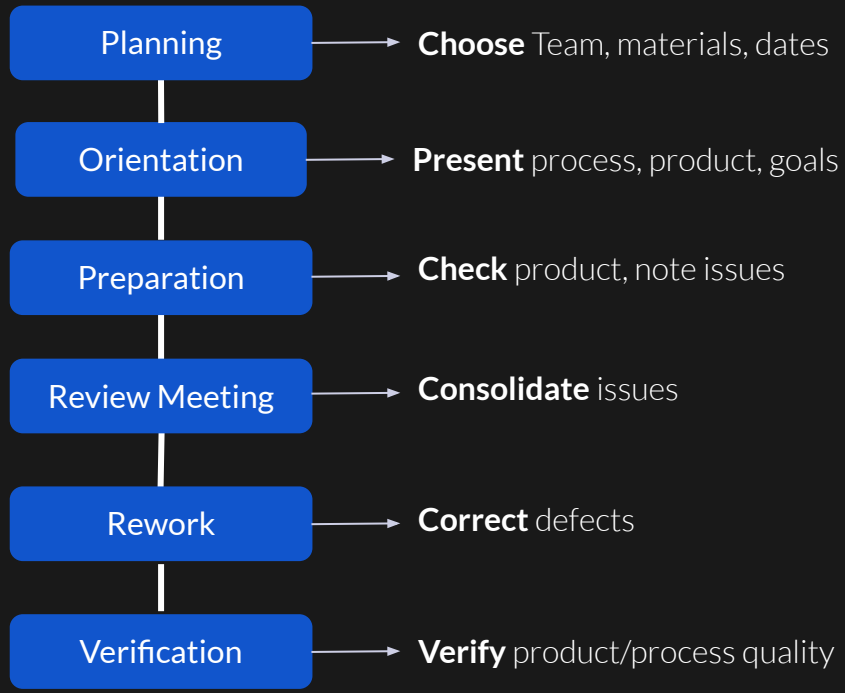
Database

04

Software Quality Assurance



TECHNICAL REVIEW



TECHNICAL REVIEW

Walkthroughs

- Informal walkthrough
- Developers not directly involved to perform review and raise issues found
- Iterative rectification of issues identified

Inspections

- Formal inspection from external reviewers with defined roles
- Identify issues and severity, for the entire project
- To be done repeatedly until all errors resolved

MANAGEMENT REVIEW

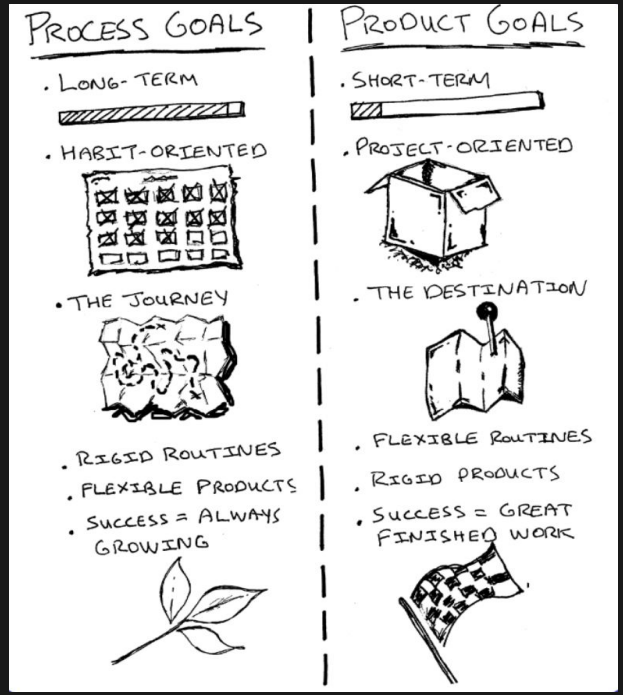
- By Project manager, Quality Manager and Lead Developer
- Every 2 weeks
- Include:
  - Status of Schedules
  - Confirm requirements
  - Verify effectiveness
- Help meet time and budget constraints

AUDITS

1. Consult people external to the organisation to conduct independent evaluation
2. Audit to be conducted once per year
3. For conformation to regulations, standard and plans such as the Project Plan

Process Goals

- Identify key areas of improvement
- Establish a **Quality Culture** in the team
- Traceability in product lifecycle, technical soundness, conformance to requirements etc.



ABILITY TO PERFORM

Resources & Training

- All required hardware and software resources
- Training as part of CZ3002 and relevant industry standard.

Tools

- Project Management using Google Drive
- Version Control by Git
- VS code and docker as development tool

Organizational Structure

- 2 subteams: Frontend & Backend.
- Members from 2 sub-teams with same component work together to integrate.

ACTIVITIES PERFORMED

Plans & Procedures

- System Requirement Specifications
- Change Management Plan
- Configuration Management Plan
- Design report on software maintainability
- Project Plan
- Quality Plan
- Risk Management Plan
- Release Plan

Traceability

- All the documents are tracked and kept in SVN.
- Necessary corrections through a change request workflow.

MEASUREMENT AND ANALYSIS

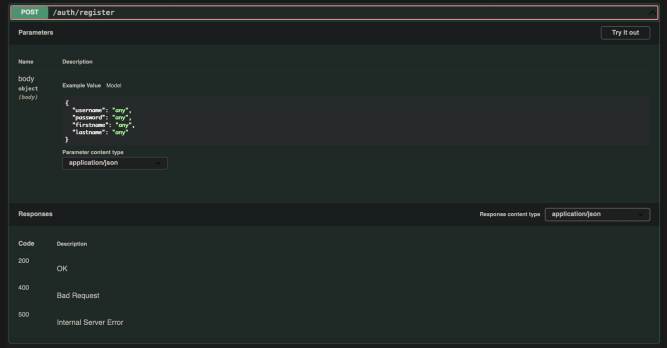
- Weekly assessments and discussions
- Quantifiable and verifiable performance metrics.
- Analysis and suggestions based on PM and current state.
- Changes follow Software Quality Assurance and management

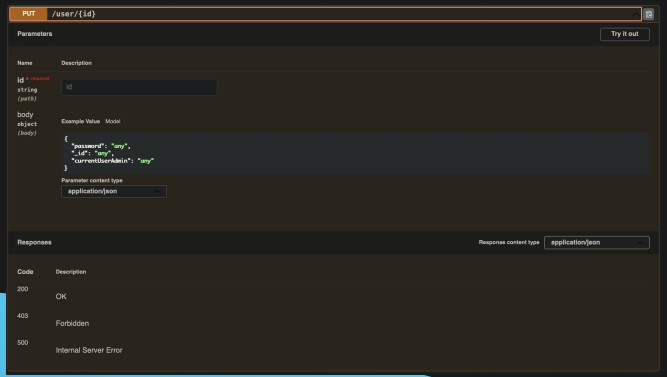
API MANUAL TESTING

Swagger
Supported by SMARTBEAR

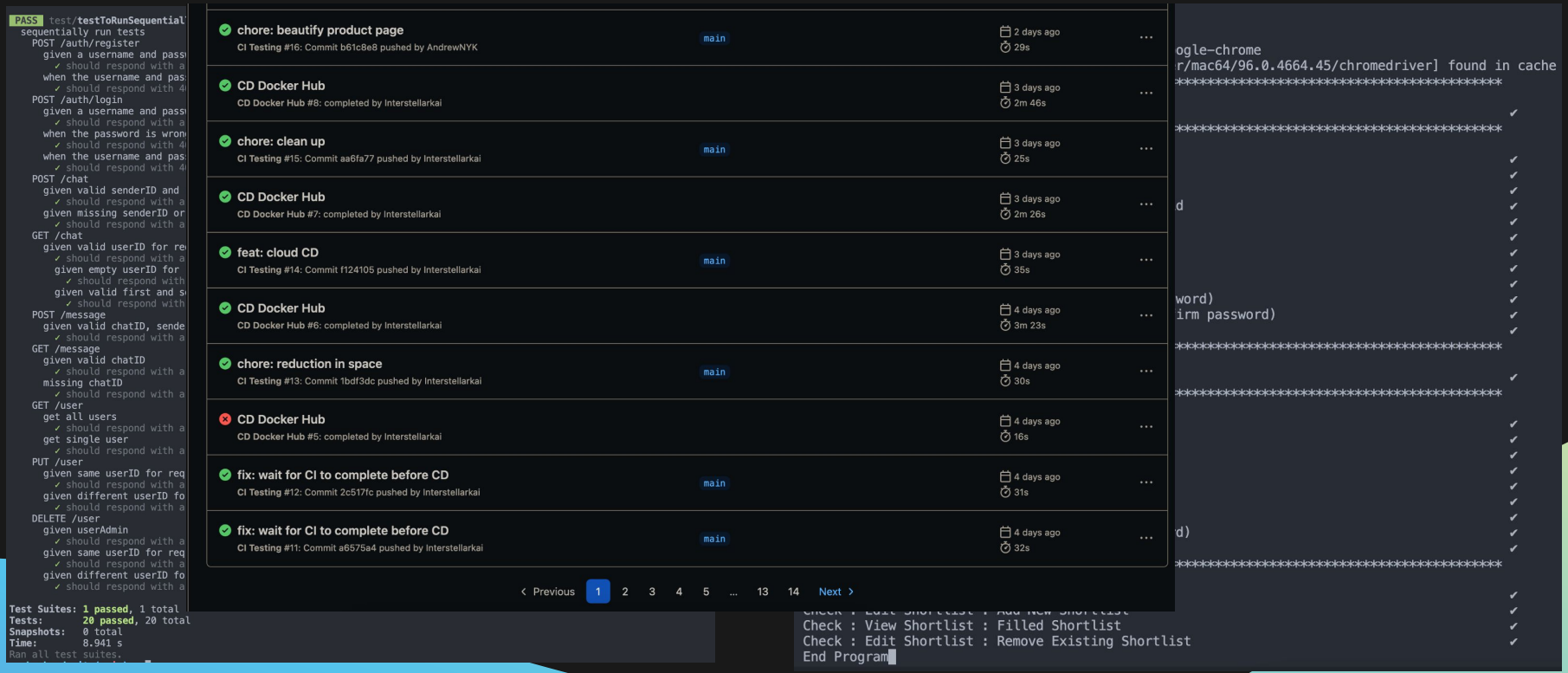
REST API 1.0.0
[Base URL: localhost:3001/]

Schemes
HTTP

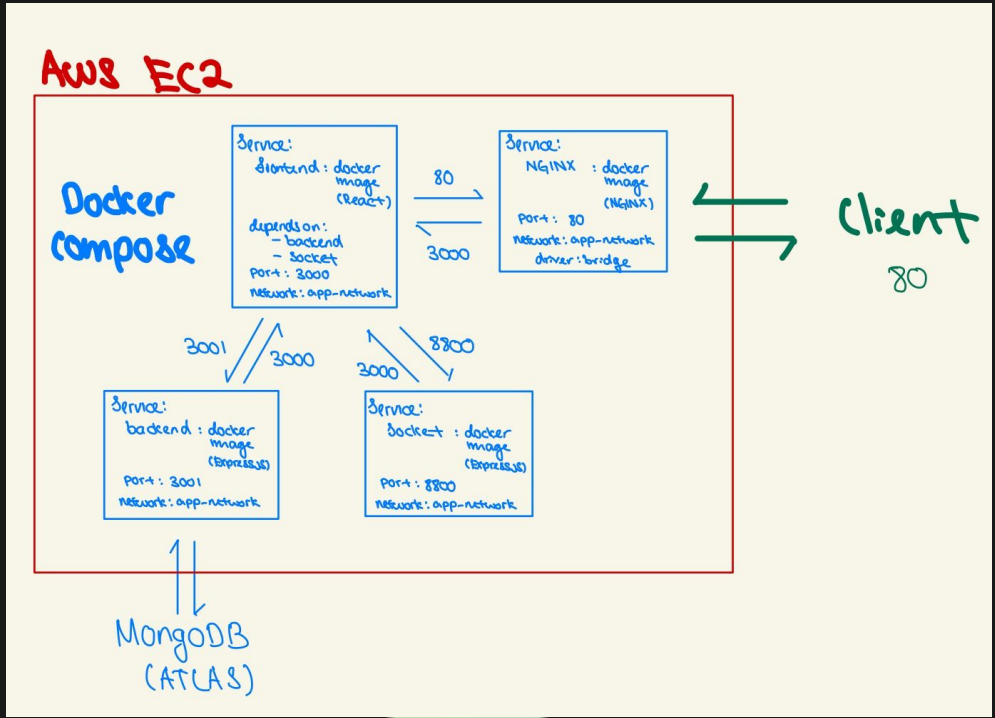




AUTOMATED TESTING



System Architecture



05

Risk MANAGEMENT

RISK MANAGEMENT PROCEDURE

Identification 

Analysis 

Response Planning 

Monitoring, Controlling and Reporting 

RISK IDENTIFICATION

Who?
- APT200
- Potential users of MerchantDice

What?
- Organizational culture
- Project scope
- Cost/effort estimates
- etc.

How?
- Bi-weekly discussions
- Document risks in shared folder

RISK ANALYSIS

Qualitative
- Utilize knowledge and experience
- Impact severity (high, medium, low)

Quantitative
- Estimated numerical rating
- Probability of occurrence (e.g. 25%)

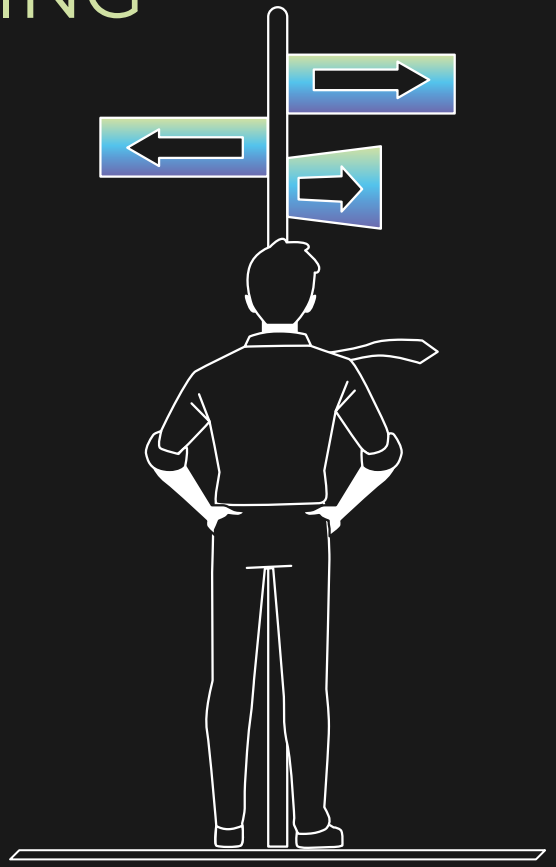
RISK RESPONSE PLANNING

Avoid

Mitigate

Accept

Transfer



RISK MONITORING, CONTROLLING AND REPORTING

Monitor existing risks
- Residual risks

"Top 10 Risk List"
- Maintained by APT200

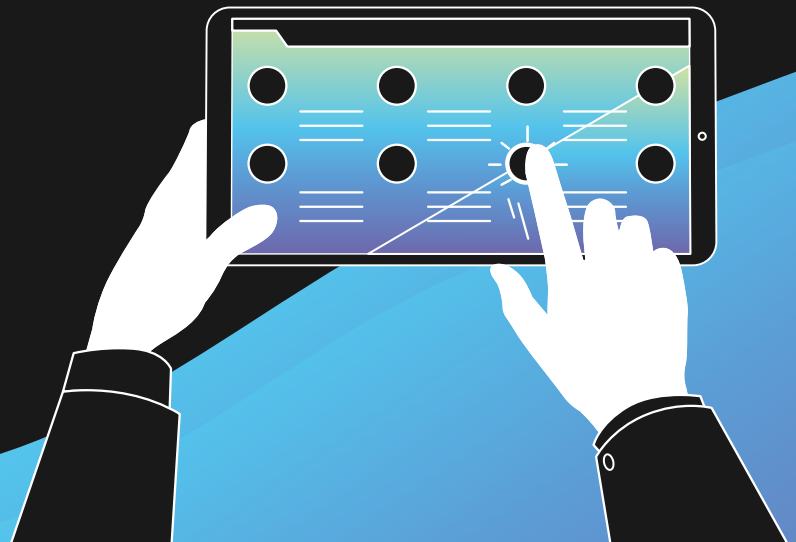
Analyze project change requests
- Assess Risk impact
- Update Risk Status

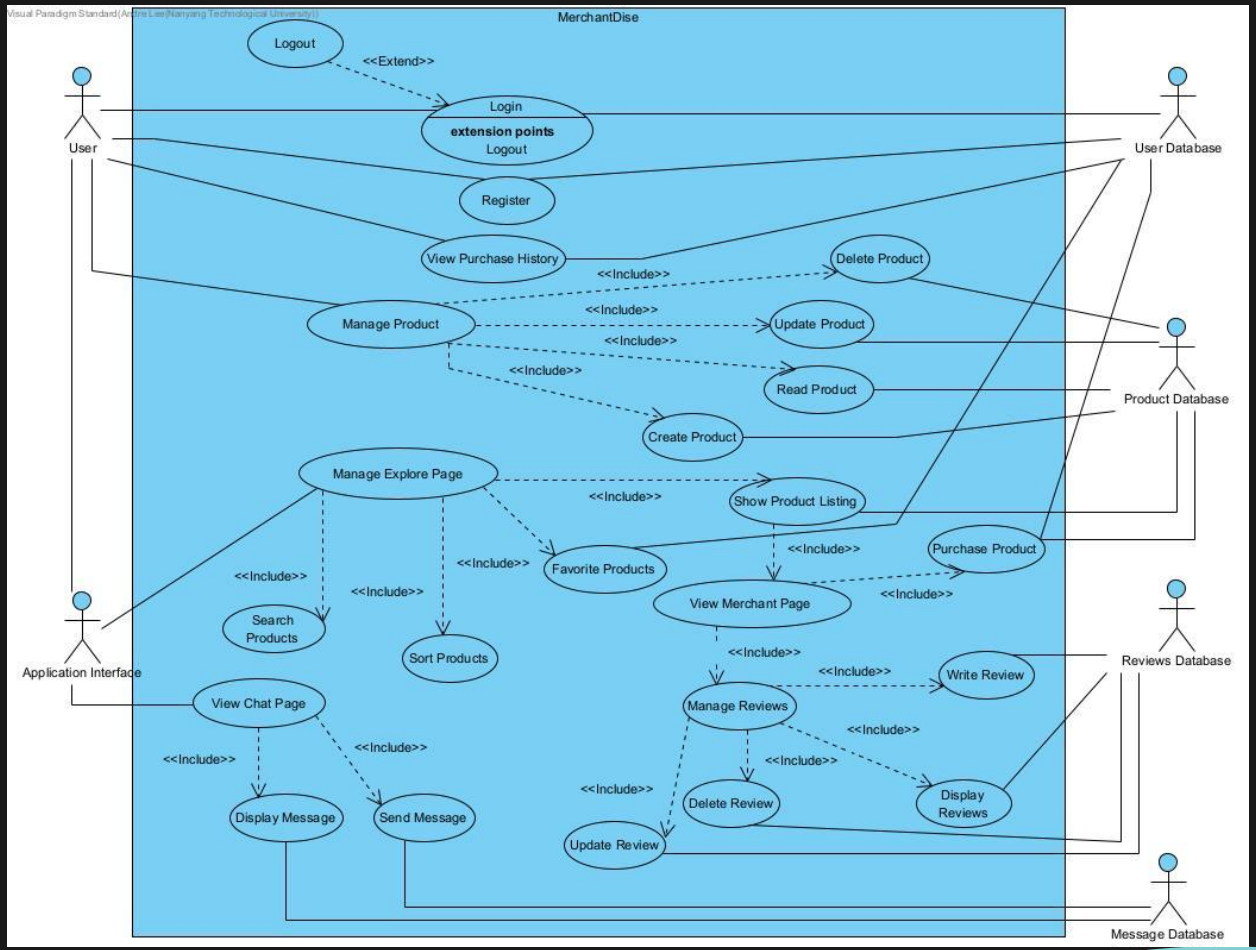
RISK LOG

Risk Identified	Impact Severity	Probability	Impacts	Risk Reduction
More changes to requirements than anticipated	High	25%	Need for a requirements documentation update/complete redesign	Be rigorous in eliciting requirements. Make customers aware of potential repercussions of requirement changes.
Problems coordinating within group	Moderate	40%	Inability to measure progress/portions of projects not completed	Manages and motivate team members. Ensure effective communication between team members

06

USE CASE DIAGRAM




MerchantDise
Logout
<<Extend>>
Login
extension points
Logout
Register
View Purchase History
Delete Product
<<Include>>
Manage Product
Update Product
Read Product
Create Product
Manage Explore Page
Show Product Listing
Favorite Products
Purchase Product
View Merchant Page
Search Products
Sort Products
View Chat Page
Display Message
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Manage Reviews
Write Review
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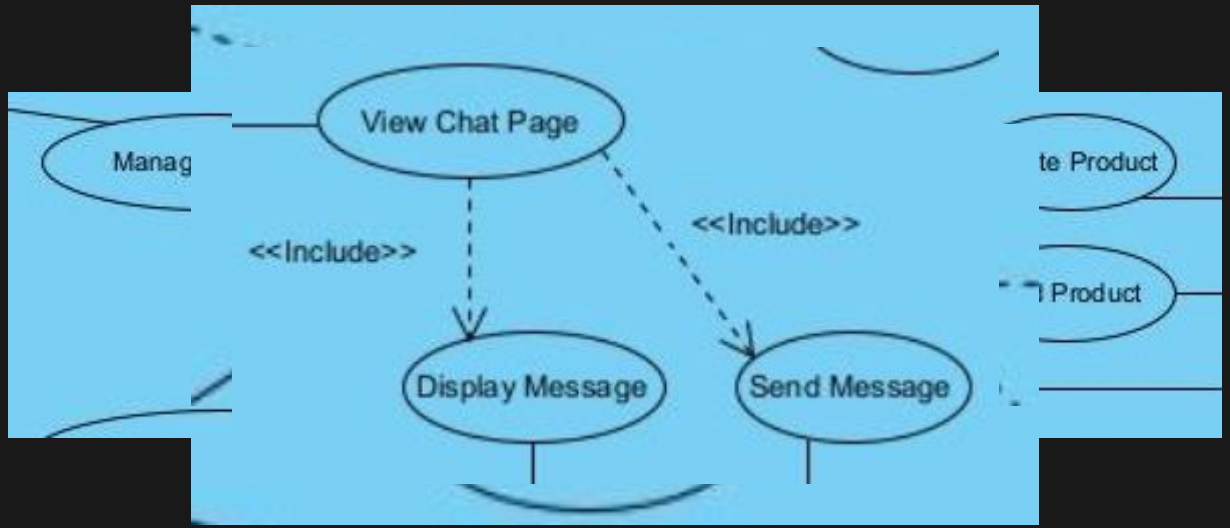
Display Reviews
Update Review
User
Application Interface
User Database
Product Database
Reviews Database
Message Database

Main Functionalities



07

DEMO