Project Plan

Team MERC

Professor Adkisson

SWE 3313, Section BBB,

October 9, 2022

Table of Contents

Scope

Team MERC's proposition of the project is a coffee ordering application. That will include and utilize the following.

Customer Account

A. Creation of New Customer Account
    i. Take in customer data
    ii. Verify customer data is unique
    iii. Add customer data to database
B. Modify Customer Account data
    i. Change customer data
    ii. Delete customer data
    iii. Ask for confirmation from customer
C. Listing of Customer Accounts
    i. Display existing data of all customer accounts
    ii. Provide an Anonymous account

Menu Display

A. Lists out all menu items from database

Order information and modifications of order cart

A. Collect order data
B. Allow modifications of items
C. Allow modifications of quantity of items
D. Allow clearing of all items
E. Allow removal of items
F. Connection of Customer account with cart data
    - Assign customer data to order data
G. Completion of order
    i. Provide confirmation of order
    ii. Display order items and prices

Payment Processing

A. Prompt for payment using credit/debit card or reward points
B. Verify payment method is viable
C. Add tax to sum amount
D. Calculate reward points and add to customer account
E. Provide notification of success/failure

Complete transaction

A. Add order to customer sales record
B. Display receipt to customer

GUI Items

A. Universal elements
    i. Home button
B. Customer Listing Screen
    i. Listing of Customer data
    ii. Showcase of reward points by customer
    iii. Add new Customer button
    iv. Order Drink button for each customer
C. Main Menu
    i. Anonymous order button
    ii. Customer Listing button
    iii. Management screen button
D. Order Drink Screen
    i. Display menu items with price
    ii. Remove, modify, change quantity, clear buttons for items
    iii. Display subtotal, tax, and total
    iv. Proceed to checkout button
E. Checkout Screen
    i. Pay with Credit/debit card button
    ii. Pay with reward points button
    iii. Input of card information
    iv. Display cart items with price
    v. Display subtotal, tax, and total
    vi. Display current reward points and awarded points
        1. Not for anonymous customers
    vii. Process checkout button
        1. Verify card or enough reward points
F. Receipt Screen
    i. Display drinks and customizations purchased by customer
    ii. Display price, quantity of items
    iii. Display subtotal, tax, and total
    iv. Display option of payment method
        - Card, shows last 4 digits
        - If not anonymous customer, Reward points, show amount points used and leftover
G. Management Screen
    i. Generate CSV report button
H. Add Customer Screen

i. Text box/input box of customer information
    1. First name input box
    2. Last name input box
    3. Phone number input box
ii. Confirm new customer button
    1. If valid goes to order drink screen
    2. Display customer validation

Schedule

Task ID	Work Breakdown Structure	Start Date	End Date	Estimated Working Hours	Worked Hours	Progress
1	Project Plan	26-Sep	9-Oct	30	32	100%
1.1	Team Roles	26-Sep	26-Sep	1	1	100%
1.2	Schedule & Deliverables	26-Sep	30-Sep	4	5	100%
1.3	Scope & Team Organization	26-Sep	30-Sep	6	7	100%
1.4	Technical Details	26-Sep	30-Sep	5	6	100%
1.5	Data Management Plan	26-Sep	30-Sep	5	6	100%
1.6	Resumes	26-Sep	7-Oct	1	1	100%
1.7	Project Testing	26-Sep	7-Oct	7	6	100%
Task 1 Completed						
2	Requirements Document	9-Oct	14-Oct	21	20	0%
2.1	Case Diagrams	9-Oct	14-Oct	4	4	0%
2.2	Class documentation	9-Oct	14-Oct	5	4	0%
2.3	Entity Relationship Diagrams	9-Oct	14-Oct	6	5	0%
2.4	Decision Table	9-Oct	14-Oct	6	7	0%
Task 2 Completed						
3	UI Design	14-Oct	24-Oct	31	35	0%
3.1	Deliverable 1	14-Oct	24-Oct	9	10	0%
3.1.1	Scaling Images for Users	14-Oct	24-Oct	3	2	0%
3.1.2	Display boxes for Users	14-Oct	24-Oct	3	4	0%
3.1.3	Selection Processes	14-Oct	24-Oct	2	3	0%
3.1.4	Font selection	14-Oct	24-Oct	1	1	0%

Main Coding begins (Sprint 1)						
3.2	Deliverable 2	14-Oct	24-Oct	22	25	0%
3.2.1	Creating base project	14-Oct	24-Oct	6		0%
3.2.1	Create data storage classes	14-Oct	24-Oct	12	13	0%
3.2.1.1	Customer Data collection	14-Oct	24-Oct	4	6	0%
3.2.1.2	Customer records and rewards	14-Oct	24-Oct	8	7	0%
3.2.2	Menu	14-Oct	24-Oct	10	12	0%
3.2.2.1	Item Selection with prices	14-Oct	24-Oct	4	5	0%
3.2.2.2	Customizing item and prices	14-Oct	24-Oct	3	4	0%
3.2.2.3	Order Confirmation and receipt.	14-Oct	24-Oct	4	3	0%
Task 3 Complete						
4	Technical Design	24-Oct	7-Nov	17	15	0%
4.1	Designing	24-Oct	7-Nov	5	4	0%
4.2	Data Management Plan	24-Oct	7-Nov	9	9	0%
4.3	Class Diagrams	24-Oct	7-Nov	3	2	0%
Task 4 Complete						
5	Application (Sprint 2 begins)	7-Nov	28-Nov	80	88	0%
5.1	GUI	7-Nov	28-Nov	70	75	0%
5.1.1	Login Screen	7-Nov	28-Nov	10	9	0%
5.1.2	Add or find a customer	7-Nov	28-Nov	5	7	0%
5.1.3	Main Menu	7-Nov	28-Nov	5	6	0%
5.1.4	Item Selection with prices	7-Nov	28-Nov	9	11	0%
5.1.5	Customize Items	7-Nov	28-Nov	6	8	0%
5.1.6	Finalize Items	7-Nov	28-Nov	10	9	0%

5.1.7	Accept Payment (Cash or Card)	7-Nov	28-Nov	16	18	0%
5.1.8	Receipt Printing	7-Nov	28-Nov	4	3	0%
5.1.9	Allow manager to view data	7-Nov	28-Nov	5	4	0%
5.2	Database Management	7-Nov	28-Nov	16	17	0%
5.2.1	Connecting database to code	7-Nov	28-Nov	10	9	0%
5.2.2	Testing the connected database.	7-Nov	28-Nov	6	8	0%
5.3	Final test (UI and Code)	7-Nov	28-Nov	4	5	0%
Task 5 Complete						

Deliverables

Project Plan – 7 October.

Requirements – 14 October.

UI Design (Sprint 1) – 24 October.

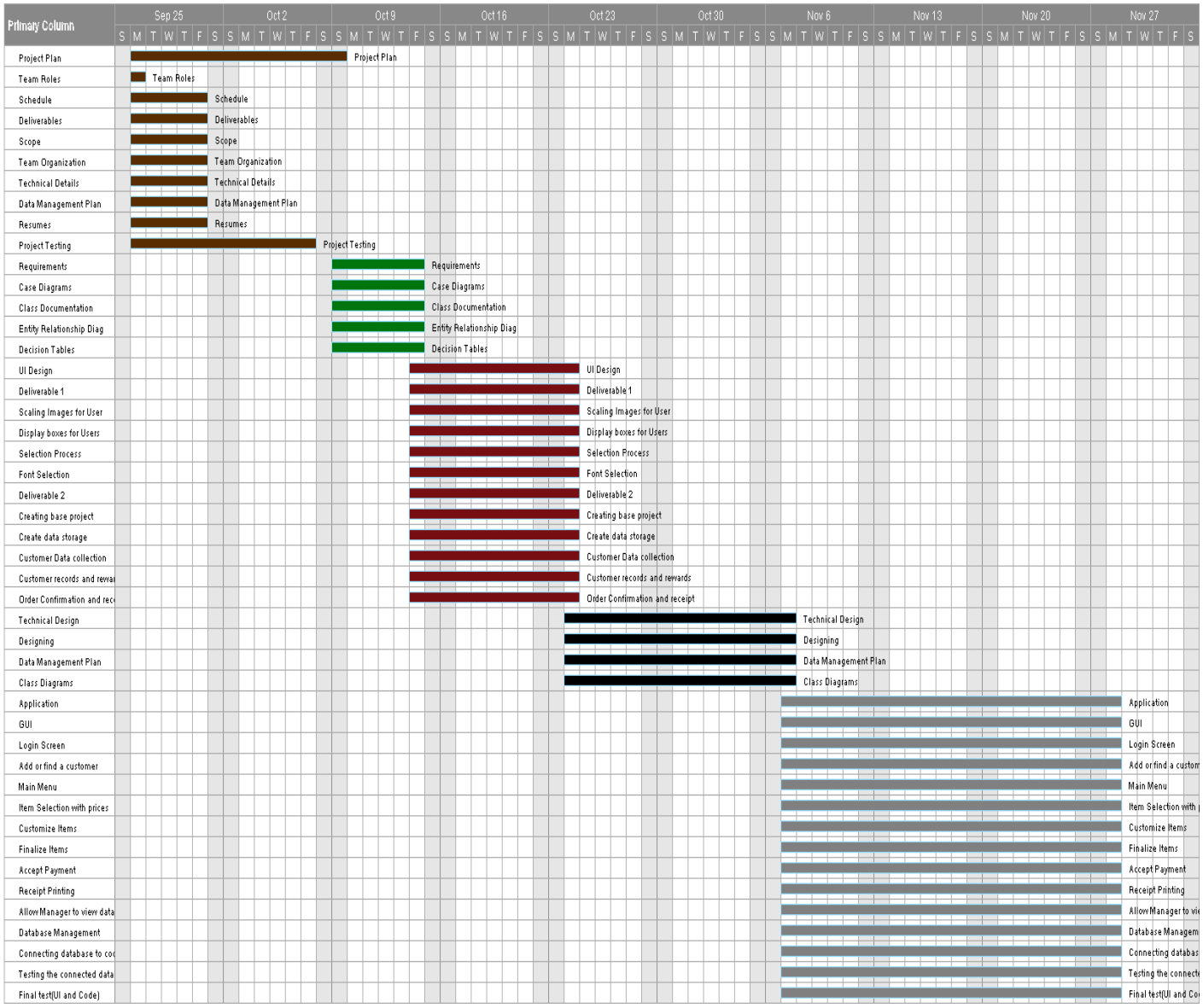
Technical Design – 7 November.

Application (Sprint 2) – 28 November.

Presentation – 28 November.

Project Peer Review – 28 November.

Gantt Chart.


Primary Column
Sep 25
Oct 2
Oct 9
Oct 16
Oct 23
Oct 30
Nov 6
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46 Final test(UI and Code)

Team MERC Organization

Merrick – Product Manager & Document Writer

Ethan – Lead Programmer

Chris – Database Engineer & Secondary Programmer

Rakshak – Visual Designer & Record Keeper

Jeff Adkisson – Product Owner/Customer

Technical Description

Jeff Adkisson aka the product owner/customer, is requesting the program be able to run on an average PC with no internet connectivity required. Meaning that program data, user information, and transactional records will be stored locally. As the program is expected to run on an average PC, it will require to have the reasonable amount of storage needed to run our program. As also requested from the customer, the program will be built using C# with the user's computer able to run C# programs. In general, our technicians will assume that the user's computer's operating software was released within the last 11 years, Windows 8, and that the hardware of the computer can run C# programs and store small amounts of data for purpose of the program.

Before building the program, our team will ask questions to the customer to confirm the specifications of the user's computer, proper functions, and the requirements of the project, whether they be major or minor. The goal of this will be to not have any scope creep be placed upon the final days/weeks of production. As well as communication between the customer and project team members will be open and recorded. This will predictively have the potential effect of a shorter development period and precise communication of requirements.

The development of the project will utilize a multitude of tools to help create a well fine tune product. The implementation of the project, as chosen by the customer, will be using C#, a high-level programming language, and its visual component of Winforms. The independent development environment, IDE, of choice our coders will be using is Visual Studio, as this is the best environment for C# projects to be built upon. As requested by the customer, the data storage will be done locally, and will be stored in a JSON formatting. Sharing, developing, and organizing code, we will be using Git and the widely used GitHub service for storing our repository of the program. This will allow us to easily monitor and implement changes throughout our team, as well as keeping a back-up of our code. C# is an object-oriented language, and our team will use object-oriented programming to maximize efficiency and usage

of the language's capabilities, as this allows for modular code that can be easily adjusted once complete meeting any changes necessary from customer data, menu display, or transactional records.

About the user interface (UI), we plan to have an ease-of-use design that is both evident and appealing to our users. Our color palette for the UI will have a reddish-brown to stick with the business that the program is designed for, that being a coffee shop. Icons will be used to present options to users and apply navigation to the program. Icons such as a back button will be placed on every screen presented to the user to navigate back to the main menu. Our visual designer and programmers will handle UI by the implementation of buttons, text fields, dropdown menus, and other dynamic visual elements to simplify the use of the program.

The program will have 7 screens that the user can navigate to with all screens serving a necessary function for the program. These major functions and layouts of the screens will be:

1. Main Screen
    a. Buttons to go to screens 2, 4, & 7
2. Customer List Screen
    a. Lists each customer and their data (last name, first name, phone number, rewards)
    b. Has an anonymous customer at the top of the list for one-time orders
    c. Buttons to add a new customer, order a drink (for each customer) and go back
3. Add Customer Screen
    a. Requires valid data to be entered for every value:
        i. First name
        ii. Last name
        iii. Phone Number
    b. Goes to Order Drink screen when complete
    c. Button to cancel and go back
4. Order Drink Screen
    a. The chosen customer (can be anonymous) orders a drink
    b. Each drink can be customized, and relevant price modifications applied

    c. There will be two windows (Left- Drink creator, Right- Complete order)
    d. Button to go to Payment screen when there is at least one drink
    e. Cancel button to go back to the main menu
5. Payment Screen
    a. Customers can pay with rewards points or a card (10 rewards points is $1)
    b. Rewards points awarded for the purchase are displayed
    c. Can cancel payment and return to main, or can complete and go to Receipt screen
6. Receipt Screen
    a. Shows the total order (with customizations) and the price of each item
    b. Shows tax and final total
    c. Shows payment method and remaining rewards points (not for anonymous)
    d. Button to return to Main screen
7. Management Screen
    a. Button to generate a CSV file with a list of sales. File opens in Excel
    b. Button to return to Main screen

Ethan Douglas Robert Johnson

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Skills

Intelligent, Quick, Intuitive, Creative, Personable, Willing to learn, Actor, Computer skills, Intermediate C# coding knowledge, Quick to understand technology in and out of work situations, beginner Java coding knowledge.

Experience

June 2020 – September 2021

Server, Buffalo Wild Wings

1. Responsible for greeting customers, taking their order, and delivering their food to them.
2. Cleaning and stocking the restaurant, washing dishes, and performing opening and closing duties.
3. Performed and assisted with customer service whenever a customer was unhappy with their food or had another issue.

March 2019 - June 2020

Bagger/Stocker, Piggly Wiggly

4. Stocked the shelves with groceries, cleaned the store, performed opening and closing duties, and assisted with customer service.
5. Bagged customer's groceries and assisted the customers in taking their purchases to their vehicles.

August 2018 - May 2020

Office Aide, Haralson County High School

6. Assisted with administrative office work, including filing papers, delivering mail, addressing letters, and other forms of assisting the vice principal.
7. Assisted teachers with preparing class work and delivering mail.
8. Performed basic receptionist duties in the vice-principal's office.

Education

Kennesaw State University

Currently attending Kennesaw State University pursing a Bachelor of Science in Computer Game Design and Development. Expected to graduate in the spring of 2024.

MERRICK MCPHERSON

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404-956-0341

2021 Castlemaine Cir, Woodstock GA

https://github.com/lildebbi3

https://www.linkedin.com/in/merrick-mcpherson-4ba44a21b/

PROFILE

Junior Computer Science student studying at Kennesaw State University. Eager to obtain an internship that will allow me to use my skills in programming and develop new ones.

SKILLS

- Skilled in C# and Java
- Familiar in Node JS and Git
- Familiar in SQL
- Problem-Solving
- Strong Communication

COURSES

- Data Structures
- Database Management Systems
- Programming and Problem Solving 1 and 2

EDUCATION

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Kennesaw State University

2021 - 2024

Dean's List in 2022 Spring

HIGH SCHOOL DEGREE

Etowah High School

2018 - 2021

Graduated with Honors

EXPERIENCE

KSU HACKATHON FALL 2021

1st Place in BlackRock Fall 2021 Hackathon

Fall 2021 Semester

- Leadership position in Hackathon team
- Created a web-based application
- Demonstrated knowledge in scripting
- Gained knowledge of API's and was able to demonstrate that knowledge in the final product

FRESHMAN STUDENT SCHOLAR RESEARCHER

Research into Diabetes Care using AI

2021-2022

- Re-Created a machine learning algorithm to detect Diabetes using inputs of medical information
- Learned about how machine learning algorithms work and the properties used to create them
- Gained experience in software deadlines and meetings

DEVELOPMENT IN SMALL APPLICATIONS

Development of applications and use of Git/Github

2019-2022

- To-do list web application, using CSS/HTML and Javascript
- Permanente Desktop file/folder Delete application, using Node JS
- Many small console-based projects showcasing skills in C# and Java

Rakshak Nath Gurung

Rgurung3@students.kennesaw.edu || 470-807-7288|| Girhub.com/grakshak001

EDUCATION

Kennesaw State University. Kennesaw, GA
Bachelor's Degree in Computer Science Aug 2020 – May 2024
GPA: 3.59
Concentration: Data Science.
Relevant Coursework: Data Structures & Algorithms(Ongoing), Object Oriented Programming, Computer Organizations and Architecture(Ongoing), Introduction to Software Engineering(Ongoing), Intro to Database(Ongoing).

SKILLS

Programming: (proficient)Java, (working knowledge) C#, (working knowledge) SQL, (ongoing)R studio.
Developer Tools & Frameworks: Git, IntelliJ, VS Code.
Languages: English (proficient), Nepali (proficient), Hindi (proficient).

EXPERIENCE & ACTIVITIES

Maitidevi Family Industry January 2018-January 2020
Family Business.

- Managed a small business where we cleaned and packaged different types of spices such as: cumin seeds, chili flakes and seeds etc.
- Worked along with 4 other people where we grinded, mixed and then packaged all of the spices throughout different stores in Kathmandu.
- Handled and processed budget of up to $600-$700 per month including paying taxes, salaries and different expenses in the business.

Brand Ambassador for Fantech Nepal March 2016 – April 2019
Team Captain.

- Worked in a team with 5 guys to represent Fantech Nepal (A gaming brand famous in Nepal).
- Competed in various tournaments and were able to win and qualify for different events resulting in us being sponsored to get many different headphones, mousepads, mouse and other gaming tools.

Marketing at a fair. December 2016 – January 2017
Team Member

- Worked in a team of 5 students where we built ideas of how to innovate a new game that can be played by a huge crowd of up to 10 people at once.
- Managed and delivered the game within a budget set by the school and were awarded with the highest earning as well as the most popular game in the fair.

Volunteering Activities

Co-director – Charumati (2019).

- Worked with a team of 30 members to direct a play called 'Charumati' relating to the life of the people during the past in Nepal.
- Performed in the play.

High School Team Captain.

- Worked with 11 other captains to support the school administration to maintain budget as well as host events such as talent shows, sports day and other competitions so that students could express their talents.

Christopher Flores-Santos

Undergraduate Student - Software Engineering

Phone: 678-382-8133 Email: christopher.floressantos@gmail.com

KSU Email: cfloress@students.kennesaw.edu

Profile

Driven and eager first-year software engineering student, with a developing programming skill set. Looking to expand and gain experience through projects, events, and internships in software engineering and related fields.

Education

Highschool – Gwinnett School of Mathematics Science and Technology

August 2016 – May 2020

Undergraduate – Georgia Gwinnett College: Applied Mathematics (transferred)

August 2020 – December 2021; 4.0 Institutional GPA

Undergraduate – Kennesaw State University: Software Engineering

January 2022 – Present; 3.760 Institutional GPA

Relevant Courses

- Calculus I & II
- Linear Algebra
- Discrete Mathematics
- Programming and Problem Solving I & II
- Data Structures
- Database Systems
- Computer Organization & Architecture
- Intro to Software Engineering
- Probability and Data Analysis
- Physics I & II

Languages:	**Programming:**	**Technical Skills and Software:**
English, Spanish	Java, C++, C#, SQL	IntelliJ IDEA, VS Code, Git, Dia, SSMS

Data Management Plan

How the data will be stored

This point of sale system will be making use of JSON to handle all data interchanges performed by the system. There will be three primary JSON files in use, first of which will be a file handling configuration data such as the menu, tax rate, and reward points per dollar, this will be in “appsettings.json.” The second JSON file will store all customer and sales data, the IStorageDevice service provided will handle the reading and writing to this file. The third JSON file will hold the drink menu and drink customization data, once again the IStorageDevice service will handle reading the data from this file. Furthermore, drink menu and drink customization data will not be updated via code, rather it will be written to this file and read into the memory upon application startup.

Types of data to be collected

I. Configuration Data:
    c. Drink menu - String
        iv. Customizations - String
    d. Tax rate - Decimal
    e. Rewards points per dollar - Integer
J. Consumer Data:
    f. First Name - String
        v. Default: “Anonymous”
    g. Last Name - String
        vi. Default: “Anonymous”
    h. Phone Number - Integer
        vii. Default: 000-000-0000
    i. Customer ID - GUID/String

j. Reward Points - Integer
    viii. N/A if “Anonymous”

K. Sales Data:
    k. Customer ID - GUID/String
    l. Date/Time - Date Time
    m. Tax - Decimal
    n. Subtotal - Decimal
    o. Total - Decimal
    p. Payment Method - Boolean
        ix. Credit Card or Rewards Points
    q. Drink List
        x. Name -String
        xi. Customization - Single comma separated String
        xii. Total Price - Decimal

Other concerns

1. Reading and Writing Data

Reading and writing of all JSON data will require the open source Nuget package “Newtonsoft JSON”. Customer and sales data *(Read and Write)* will be re-written to the relevant .json file after any and all data entry events with the most recent data. Configuration data *(Read Only)* and drink menu/customization data will be read and uploaded to the system memory upon starting up the application, this data will not be editable during operation.

2. Financial Data Handling

Financial data such as credit card information will not be collected or stored*. However, it will be verified upon each transaction made by credit card. This verification will take place using the provided “CreditCardValidator” open source Nuget package and will consist of validating name, expiration, numeric values, etc.

*Last 4 digits of CC will be temporarily stored to be used in receipt screen

3. CSV

Open source Nuget package “CSVHelper” will be utilized to generate CSV data files. A sales report CSV file will be produced upon request (through management screen) and opened in Microsoft Excel.

Test Plan

In order to have a well-developed product, multiple testing methods will be used in the project. We will utilize programming testing methods of writing unit tests when possible and creating user experience tests that will include a practice user going through the process of the program, in searching for errors or poor UI/UX designs. Our goal for our test plan is to find errors and bugs in the production code and be able to maximize our efficiency in UI and UX design.

Our 1st testing strategy for developing a better UI/UX will be to have test leaders designated to our visual designer and lead programmer present small prototypes of screens and have our technical testers the secondary programmer and project manager act as the technical user going through the prototype screen to find any bugs that occur. Having both a technical test leader and a technical test user will have a smoother communication of what errors are occurring and the reasoning behind them. For our 2nd testing strategy for our UI/UX will be to have our visual designer present a prototype screen to a non-technical user to find better ways of presenting options, button layout, and ease of use. As going back to production in the creation of a prototype screen to be called back for inefficiency, we will have a weekly meeting to discuss UI layout with our visual designer and lead programmer leading the conversation.

As for production code, this includes data management and method functionality, we will have our lead programmers in these fields present tests before developing in order to find a clear path of production. As lead programmer will develop unit tests for both them and the secondary programmer to follow in developing their code. Our database engineer will consult with the project manager before developing code. The database engineer will also write unit tests when possible and will converse with the project manager on data management procedures. This is to allow for smoother production of vital data management code and allow the project manager, and by extension team, to understand the development of our database.