OMG Mobile

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Because OMG Mobile's codebase is private and has been handed off to the client, I have made this short presentation to allow for some more context of the OMG Mobile project!

OMG Mobile

Project Context

OMG Mobile was developed by myself and 4 other students for the *Software Engineering* capstone course at Trent University. Our team was approached by Oasis Mediterranean Grill **(OMG)**, a local owned restaurant in downtown Peterborough.

Their online presence was small - they wanted something to allow them to stay competitive. The client was interested in finding something that could reduce their dependence on courier apps (i.e SkipTheDishes, UberEats) due to high fees.

Project Objectives

❖   Build a mobile application that can be easily configured on both iOS and Android devices,

❖   Introduce desired features such as **creating user accounts, placing orders, redeeming coupons, earning and redeeming loyalty points, and more.**

❖   Create a well-structured and documented codebase so that OMG IT staff can easily maintain it in the future

System Architecture

To complete our objective, we chose to use the **Flutter framework.**
Flutter is built with **Dart** in order to create high-performance, cross-platform applications.

Dart and Flutter allow developers to create structurally sound layouts with Widgets and States. That means it is very **similar to React** and other component-based UI frameworks, but has the advantage of utilizing core concepts from **object-oriented programming**.

Our project then leverages the Firebase platform. Using Firestore, we can run real-time, powerful queries efficiently. Firebase also allows us to implement user authentication, notifications, cloud messaging, and analytics. We also use Firebase Cloud Functions in order to process back-end code, including HTTPS requests to 3rd party APIs such as Stripe, in a serverless managed environment.
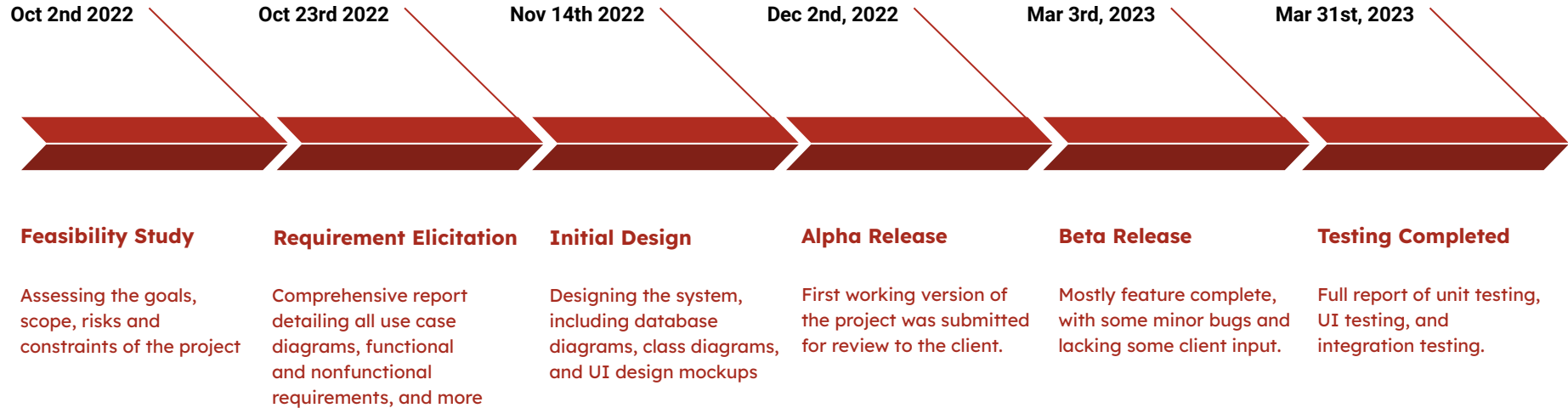
Software Architecture

A main focus from the beginning was to create an organised, maintainable codebase with the use of good architectural patterns. Through my previous professional experience working on enterprise applications, I was able to assist and lead my team to implement a strong architectural foundation.

The main architecture followed in OMG Mobile is the **Model-View-Controller (MVC)** pattern, which is loosely coupled thanks to **dependency injection.** Our program logic is divided by its purpose, handles specific development aspects and interfaces with each other only *when necessary.*

Like in React, the nested structure of Flutter widgets can pose an issue in large codebases. To access state data across multiple pages requires many levels of prop drilling or extensive callback functions. To simplify this, we implemented the state management framework **Provider**, which lets us share, access and manipulate data models in any widget, and allows us to take advantage of **data binding**.

Project Deliverables and Timeline

Oct 2nd 2022	Oct 23rd 2022	Nov 14th 2022	Dec 2nd, 2022	Mar 3rd, 2023	Mar 31st, 2023

Feasibility Study

Assessing the goals, scope, risks and constraints of the project

Requirement Elicitation

Comprehensive report detailing all use case diagrams, functional and nonfunctional requirements, and more

Initial Design

Designing the system, including database diagrams, class diagrams, and UI design mockups

Alpha Release

First working version of the project was submitted for review to the client.

Beta Release

Mostly feature complete, with some minor bugs and lacking some client input.

Testing Completed

Full report of unit testing, UI testing, and integration testing.

April 12th, 2023: Finalized application submitted to client

My Contributions

Requirements

23 UML Diagrams

18 User Stories

Identified project constraints

Non-functional requirements report

Design

Software/System Architecture Research

Database Diagram

Class Diagram

12 UI mockup pages

Feature Implementations

Things I am fully responsible for

Menu
Menu Items + Modifiers
Orders and Order History
Shopping Cart
Payment

Contributions

Things I helped develop

Redeeming Coupons
Earning Points
Redeeming Points

Maintenance

Code Reviews

Team Feedback

Wiki Documentation

Testing

68 total unit tests

13 total widget (UI) tests

Over 6 pages of reported bug and their fixes

Project Outcome

- ❖ All deadlines met, all client-requested features and deliverables completed
- ❖ Well-structured, heavily documented and organized codebase, as well as project wiki
- ❖ 96% final mark in COIS 4000Y - Software Engineering Project

Skills & Lessons Learned

Team Collaboration

Working in a team effectively was the factor that made OMG Mobile the successful project that it turned out to be.

- Actively listening to other ideas
- Working to integrate all contributions

Conflict Resolution

Having to deal with conflict is normal for any work environment, so effective resolution is an important skill.

- Positive strategies
- Finding ways to help your team members - you have a common goal to reach

Time Management

I had to learn how to manage my time effectively in order to meet project deadlines.

- Breaking deliverables down into smaller, clearer goals
- Identifying urgent tasks and prioritizing them

Stronger Understanding of Software Engineering

Reinforced my technical knowledge in all aspects

- Software development life cycle
- Git version control, Agile practices

Applying OMG Mobile to future positions

Time Management

Application Development and Design

Agile workflow

Quick learning ability and ability to adapt to new stacks & technologies

System/Software architectural knowledge
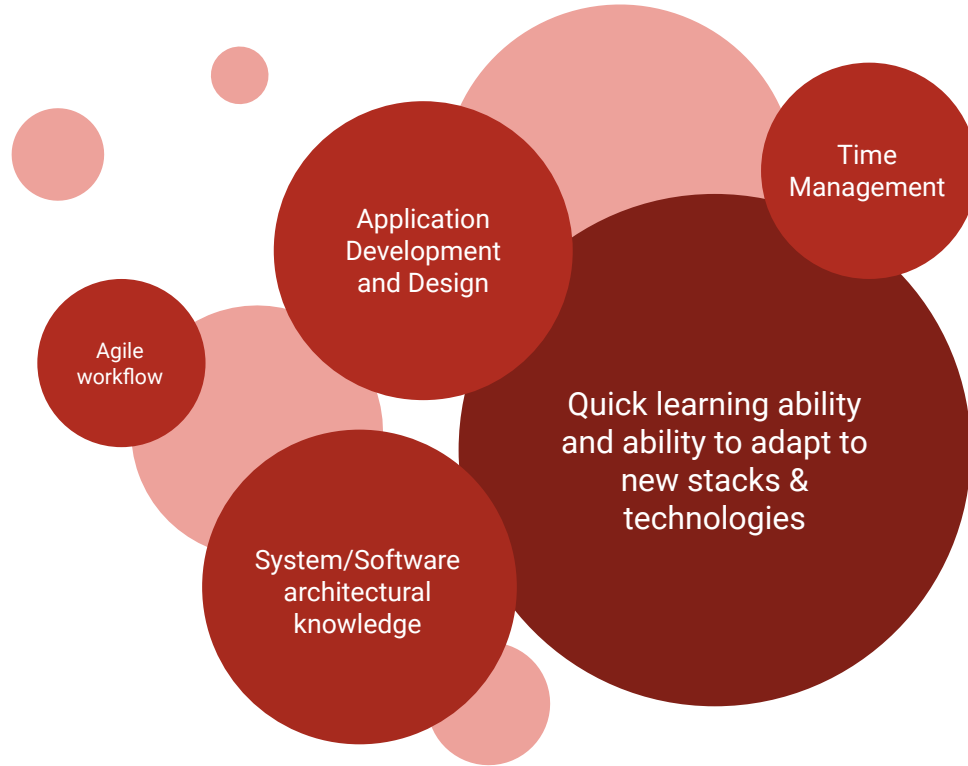
Product Screenshots

OMG Mobile

Sandwiches **Platters** Burgers Combo

Search this category...

Aleppo Platter
$19.49

Beef Kebab Platter
$25.99

Chicken Kebab Platter
$22.49

Home

OMG Mobile

Toppings   Choose one or more

☐ Tomatoes
☐ Cucumbers
☐ Onions
☐ Pickles
☐ Pickled Turnips
☐ Pickled Banana Peppers
☐ Pickled Jalapeños

Sauces   Choose one or more

☐ Garlic Sauce
☐ Hot Sauce

Your Cart

Pickup
460 George St N, Peterborough, ON

Chicken Shawarma Sandwich
$11.99   − 1 +

Toppings: Tomatoes, Cucumbers, Onions, Pickles, Pickled Turnips, Pickled Banana Peppers, Pickled Jalapeños

Sauces: Garlic Sauce, Hot Sauce

Add-ons: None

Enter additional notes...

Subtotal   **$11.99**

Place Order

Place Order

Select Pick-Up Time

○ ASAP

○ Scheduled

Location Details

Pickup Address
460 George St N, Peterborough, ON

Reward Points

You will earn   11 points

Points Redemption
Redeeming 0 points   >

Order Summary

Total   **$13.55**

Pay $13.55