Chapter 6: System Implementation

6.1 Tools Used

- Visual Studio Code
- Dart
- Flutter SDK (Frontend User Interface)
- Firebase (Backend service)

The description of each software tool is described below:

1. **Visual Studio Code:**

   Visual Studio Code, also commonly referred to as VS Code, is a source-code editor made by Microsoft with the Electron Framework, for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.

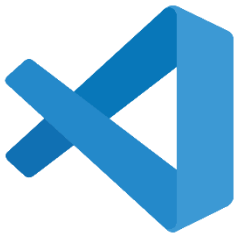

Figure 28 VS Code

2. **Dart:**

   Dart is a programming language designed for client development, such as for the web and mobile apps. It is developed by Google and can also be used to build server and desktop applications. It is an object-oriented, class-based, garbage-collected language with C-style syntax.

Figure 29 Dart SDK

3. **Flutter:**

   Flutter is an open-source UI software development kit created by Google. It is used to develop cross-platform applications for Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web from a single codebase.

Figure 30 Flutter SDK

4. **Firebase:**

   Firebase is a comprehensive mobile and web application development platform that offers various services such as real-time database, authentication, cloud storage, hosting, and more. It is known for its ease of use, scalability, and integration with other Google services. Developers often use Firebase to build high-quality apps quickly, leveraging its robust backend infrastructure and powerful features for user authentication, data storage, and analytics.

Figure 31 Firebase.

6.2 I/O interface

Interface Implementation using the Flutter SDK in Visual Studio Code.

6.2.1 Login/Register pages

Returning users log in, newcomers choose an account type and sign up, then validate their email addresses.

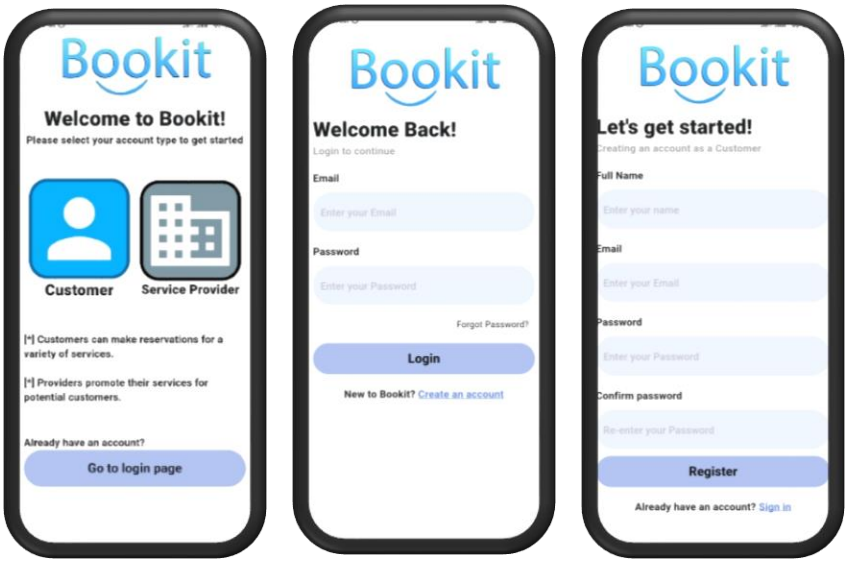

Figure 32 Register/Login interface

6.2.2 Customer Pages

Customers can browse services from the dashboard and track their points from their profile pages.

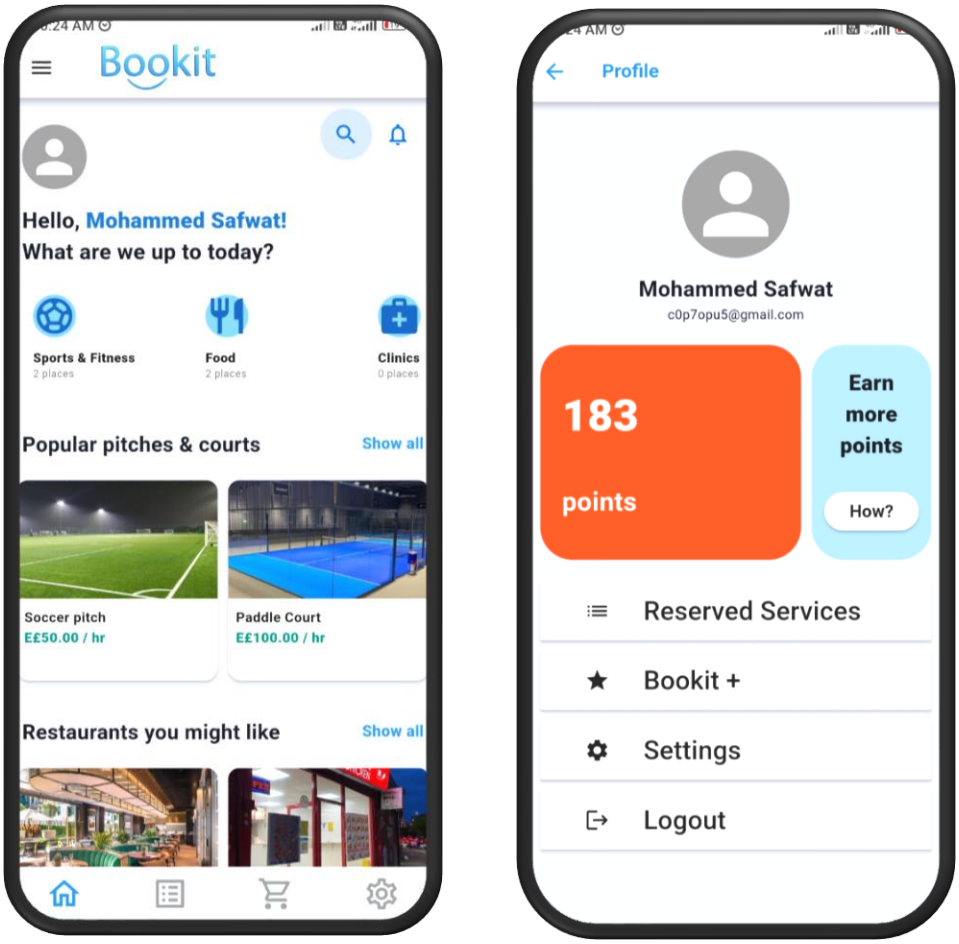

Figure 33 Dashboard and Profile (Customer)

They can view service details and choose to add to the cart.

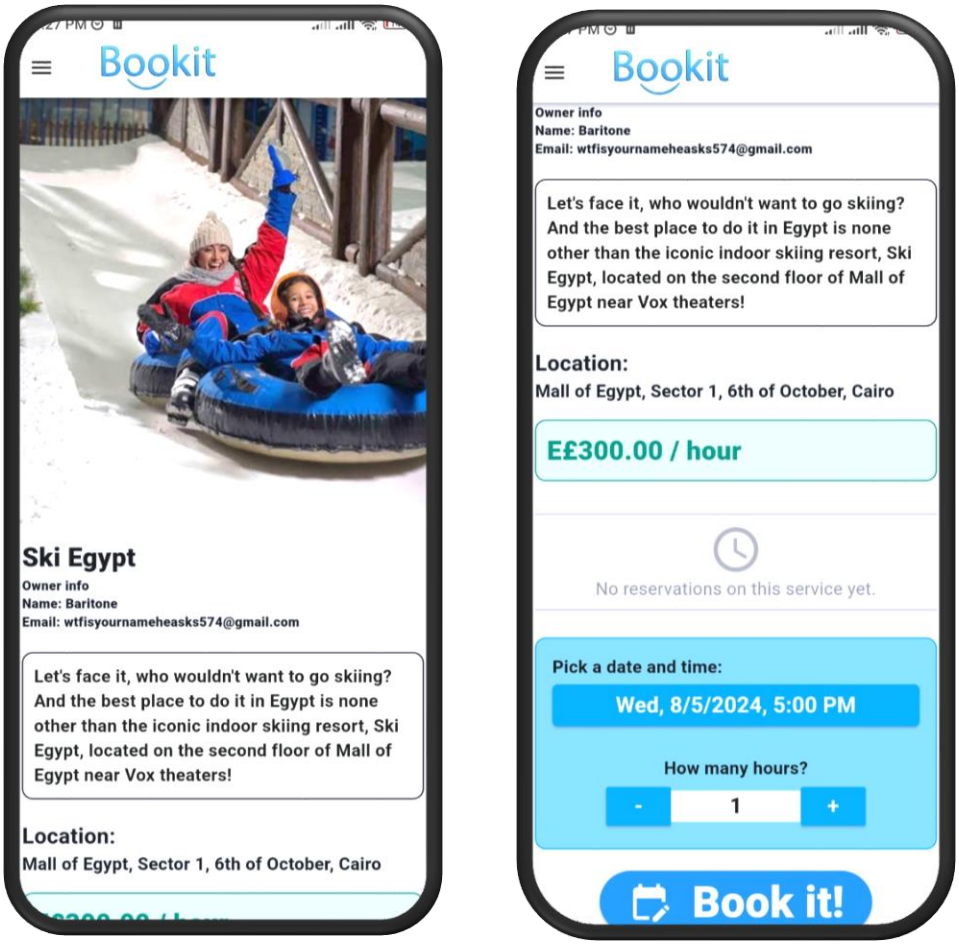

Figure 34 Service Details (Customer)

From there they may add more services to the cart before checking out and even redeem points for a discount.

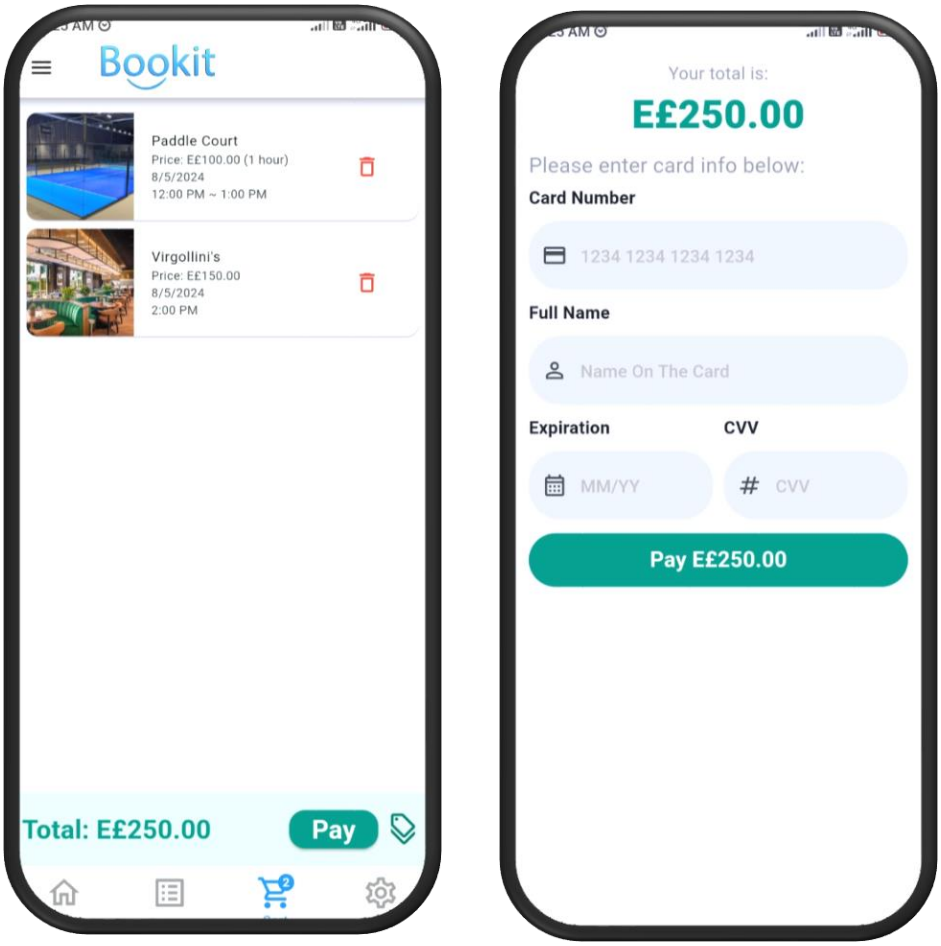

Figure 35 Cart and Checkout

It is possible to track current reservations through "My Reservations" and revisit previously reserved services.

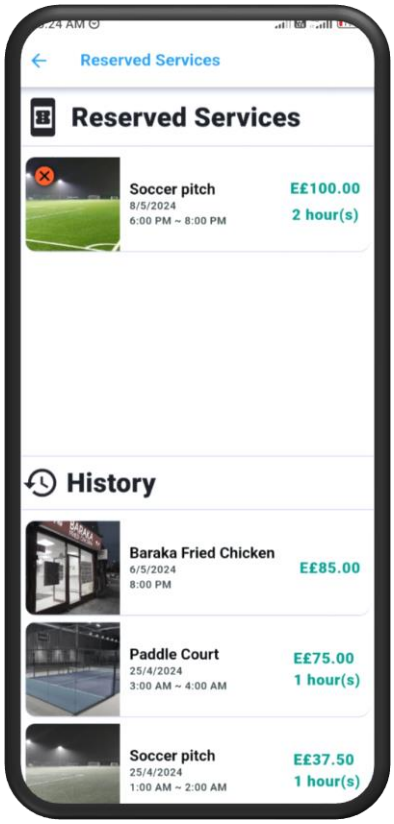

Figure 36 Reservation Log & History

6.2.3 Service Provider Pages

The dashboard and profile pages look different for the service providers, for they see only their own services and instead of points, they have an e-wallet where the revenue they make goes.

They can also add, edit, and delete their services from the system, as well as track how successful their services are.

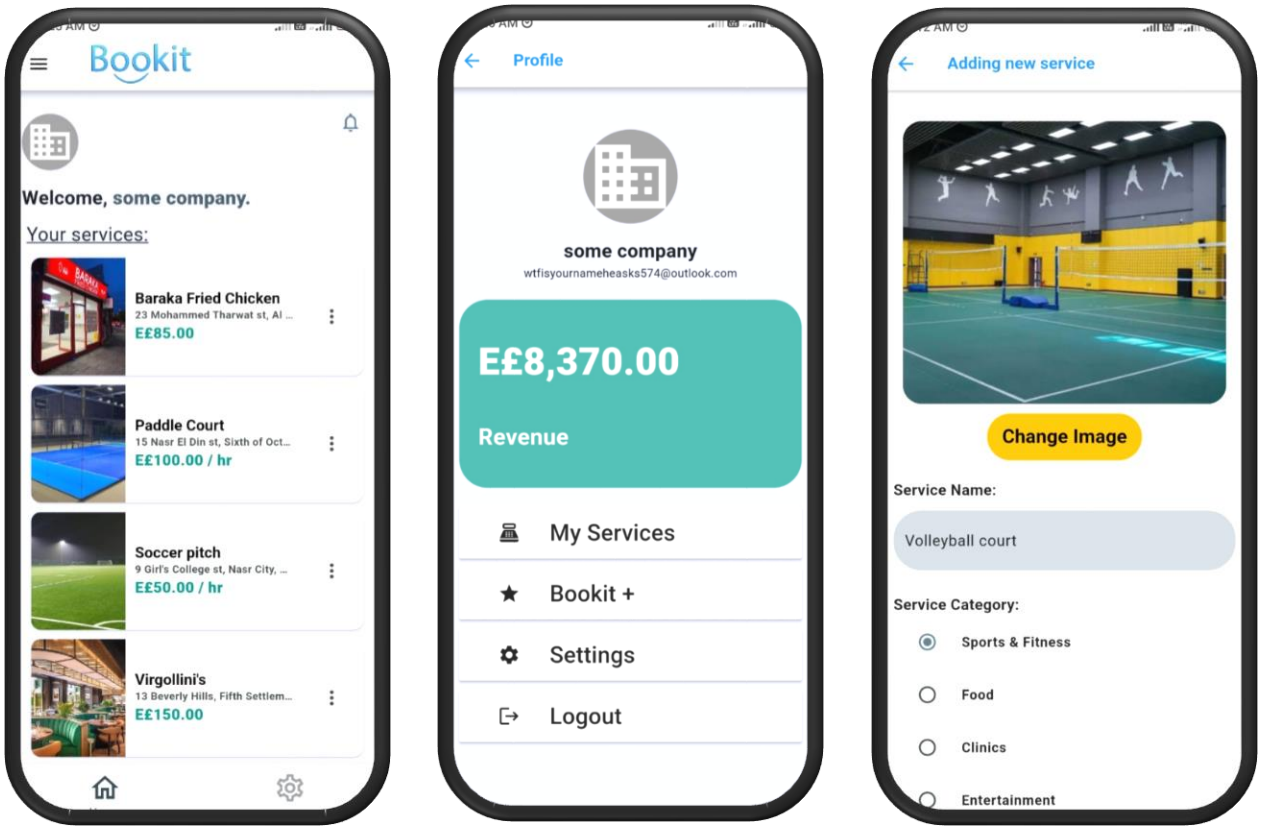

Figure 37 Dashboard, profile & service addition pages (SP)

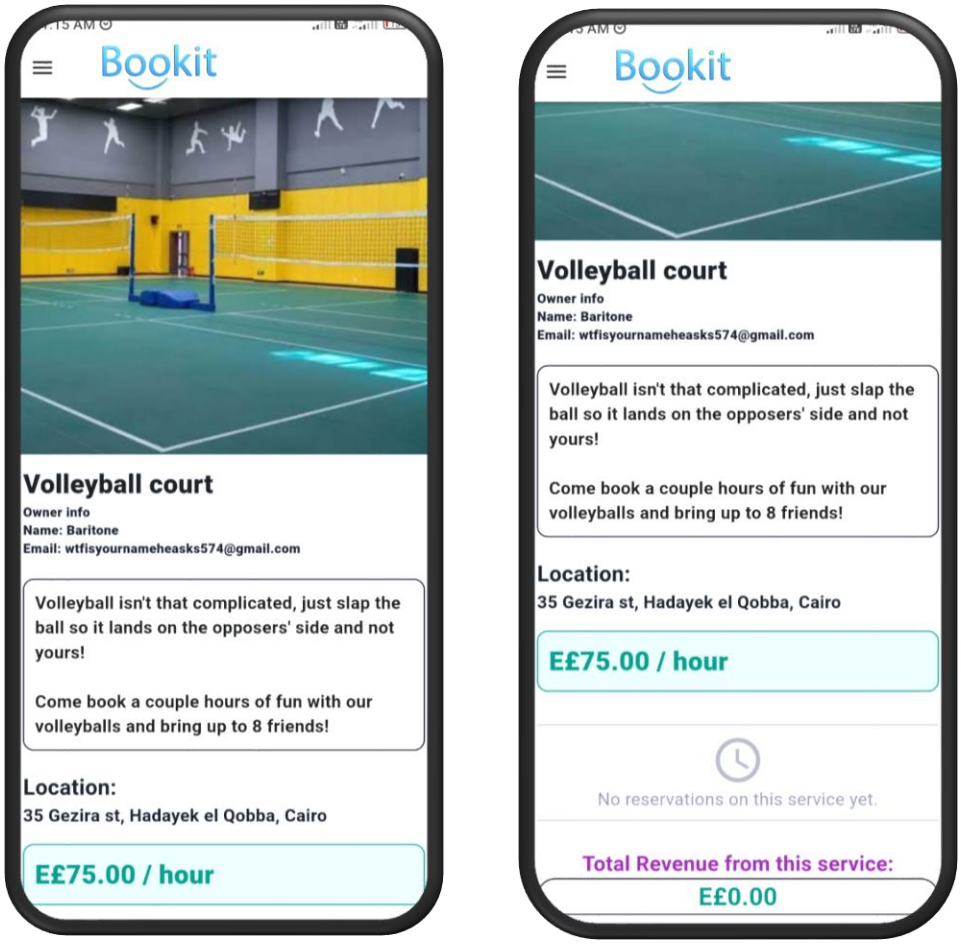

Figure 38 Service Details (SP)