

STYLE-MANIA

MINOR PROJECT REPORT

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Abstract

In today's fast-changing business environment, it's extremely important to be able to respond to client needs in the most effective and timely manner. If your customers wish to see your business online and have instant access to your products or services.

Online Shopping is a e-commerce application, which retails various products. This project allows the user to customise there own clothes. This project provides an easy customization of the clothes that user want to do. By this application user can get their desired clothes in various brands easily.

In order to develop an e-commerce application, a number of Technologies must be studied and understood. These include flutter, dart, google firebase for the database, flutter SDK, android SDK. This is a project with the objective to customise the products according to the customer needs.

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1 Introduction

1.1 Introduction to Project Page

E-Commerce (Electronic Commerce) is process of doing business through computer networks. The primary goal of an e-commerce site is to sell goods and services online. Online shopping is a form of electronic shopping store where the buyer is directly online to the seller's computer usually via the internet. A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products. Online Shopping System helps in buying of goods, products and services online by choosing the listed products from website(E-Commerce site).

Style-Mania is the Simple shopping Solution. In day to day life, we will need to buy any type of cloth from a shop. Customer can login and get various information about product and can purchase the suitable product. It may be food items, electronic items, house hold items etc. But sometimes when customer went out to purchase clothes from shop or from any online site then there may be problem like size, colour, design etc that customer do not want to buy. So we introduced our application with a customization feature. By which the customer can easily design their clothes from there place only. Now a days, it is really hard and risky to get some time to go out and get them by ourselves due to busy life style, lots of works and also the pandemic we are facing.

Style-Mania is a virtual store on the Internet where customers can browse the product and select products of interest and can customise them according to their needs. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and payment information such as credit card number. An e-mail notification is sent to the customer as soon as the order is placed.

1.2 Project Category

The project falls under the category of Application development. It also includes the entire online process of developing, marketing, selling, delivering, servicing, customising and paying for products and services. In order to purchase a shopping cart is provided to the user and for the customization some stickers and a drawing area is provided to the user. The amount of trade conducted electronically has grown extraordinarily with widespread Internet usage. The use of commerce is conducted in this way, spurred and drawing on innovations in electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. The E-Commerce site will let customers to view and order products online while being in any situation.

1.3 Objectives

1. The objective of this project is to develop an E-commerce application based on clothing products and customise products according to customers needs.

1.4 Identification/Reorganization of Need

1. Improvement of business transaction: E-commerce endeavours to improve the execution of business transaction over various networks.
2. Effective performance: It leads to more effective performance i.e. better quality, greater customer satisfaction and better corporate decision making.
3. Greater economic efficiency: We may achieve greater economic efficiency (lower cost) and more rapid exchange (high speed accelerated or real-time interaction) with the help of e-commerce.
4. Increasing of revenue: System use technology to either lower operating cost or increase revenue. E-commerce has the potential to increase revenue by creating new markets for old products to better serve the customers.

1.5 Existing System

The existing system of buying the clothes has several disadvantages. It requires lot of time to travel, to select the clothes and after all that the main thing arises is the customer satisfaction and fulfilment of the customer needs. Online shopping has reduced the travelling time. But sometimes it may also can't fulfil the customer needs. When we do online or offline shopping we can't customise our clothes. Because while shopping sometimes customer does not get proper colour, design, size they want. Since everyone is leading busy life now a days, time means a lot to everyone. Also there are expenses for travelling from house to shop. It is less user-friendly. In current system user must go to shop and order products. It is difficult to identify the required product. More over the shop from where we would like to buy some thing may not be open 24*7*365. Hence we have to adjust our time with the shopkeeper's time or vendor's time. In current E-commerce system user have to go shop to view the description of the product. It is unable to generate different kinds of report.

1.6 Proposed System

The proposed system helps to set up online shops, customers to browse through the shops, a system administrator to approve and reject requests for products and maintains list of orders and to customise their own products according to their needs. The basic idea is that customers can buy products from anywhere during anytime by using login facility. The database will maintain the products details information. Customers can also view their order details and track it.

1.7 Unique Features of the System

- Customization panel by which the user can customise their own clothes.

2 Requirement Analysis and System Specification

2.1 Feasibility Study

Feasibility is the determination of whether or not a project is worth doing. This type of study determines if a project can and should be taken. A feasibility study is carried out to select the best system that meets performance requirements. A feasibility study of a system proposal is according to its workability, which is the impact on the organization, ability at meet their user needs and effective use of resources. Thus when a new application is proposed it normally goes through a feasibility study before it is approved for development. The document provide the feasibility of the project that is being designed and lists various areas that were considered very carefully during the feasibility study of this project such as Technical, Economic and Operational feasibilities . To check whether the proposed system is worth making or not I conducted the feasibility study in which I studied the following aspects.

1. Economic Feasibility: This project is based on an Android phone with low-cost electronic components such as my Processor, camera modules, and relay switches which are the most cost-effective structures to construct.
2. Technical Feasibility: This proposal is based on wireless radios that are incorporated in a way that is reasonably in phase with current technology. As a result, it is highly valued by technology.
3. Operational Feasibility: This programme will feature a simple, user-friendly interface that will appeal to anyone with a basic understanding of how to operate an Android phone. Controlling house appliances with a push of a button might be beneficial for physically challenged people as well. As a result, it is possible from a practical standpoint.

2.2 Software Requirement Specification Document: (Security Requirement)

This document is meant to delineate the features of OSS, so as to serve as a guide to the developers on one hand and a software validation document for the prospective client on the other. The Online Shopping System (OSS)for clothing application is intended to provide complete solutions for vendors as well as customers through a single get way using the internet. It will enable vendors to setup online customization, customer to browse through the products, customize them and purchase them online without having to visit the shop physically.

1. Data Requirement: For cloth customization we require product details that we are selling, database that record the user details and password of several users.

2. Function Requirement: The functionalities that a developer must incorporate into software to accomplish use cases are referred to as functional requirements. These functions will be built in such a way that vendor independent system-to-system communication is possible like Signup, Login are the function requirements.
3. Performance Requirement: If the system is not connected, it must not add more than two seconds to the time it takes to accomplish an action. There must be no more than a ten-second delay in the logging of researcher data to the research centre. The speed with which directives are provided to the system will be affected by the efficiency of the software code.
4. Maintainability Requirement: The system is as simple to use as feasible, with all capabilities accessible.
5. Security Requirement: As the system is meant to run on a network like the internet, there are security concerns connected with utilising it. When evaluating the system, the user must ensure that intruders, such as hacker attempts and third-party invasions, are prevented from gaining access.

2.3 Validation

To validate the performance of our system a software and hardware implementation is done.

1. MANUAL-SCENARIO IMPLEMENTATION-For the hardware implementation(manual scenario), we have used our mobile phone to check the proper interface at the user end.
2. AUTOMATIC-SCENARIO IMPLEMENTATION-The android studio provides us with a very useful feature called 'Emulator', where we can run our code easily. Its fully functional like a real mobile phone.

2.4 Expected hurdles

There are several external and internal hurdles that are associated with our project.

1. As we are working with flutter, Flutter only works with the system that is 64 bits. So for that we should have that system with us.
2. Many problems arise while setting up the Flutter SDK in Android studio.
3. First we had Flutter version 14, after updating our Flutter version our emulator has stopped working.
4. In JDK 14 same thing happens our SDK are not working properly.

3 System Design

3.1 Design Approach

In this project, we have adopted object-oriented approach in which objects are used to represent real world entities. The objects hold data about them in attributes. First the user is visitor to our application. After registering with us they become user. After that they can view the products, select the category, add custom designs to their selected clothes. And all these things are tracked.

3.2 Detail Design

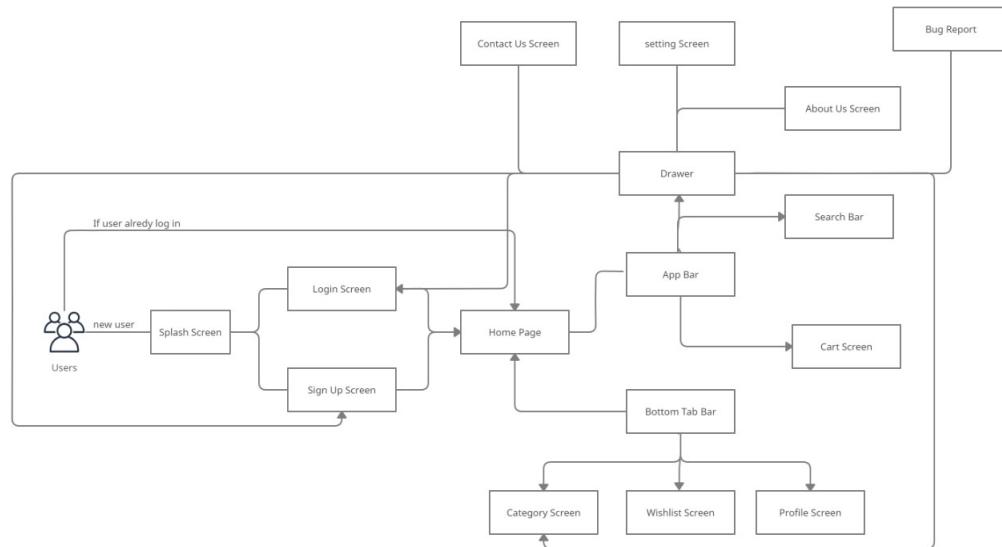


Figure 1: Application Detail Design

3.3 Database Design

3.3.1 ER Diagrams

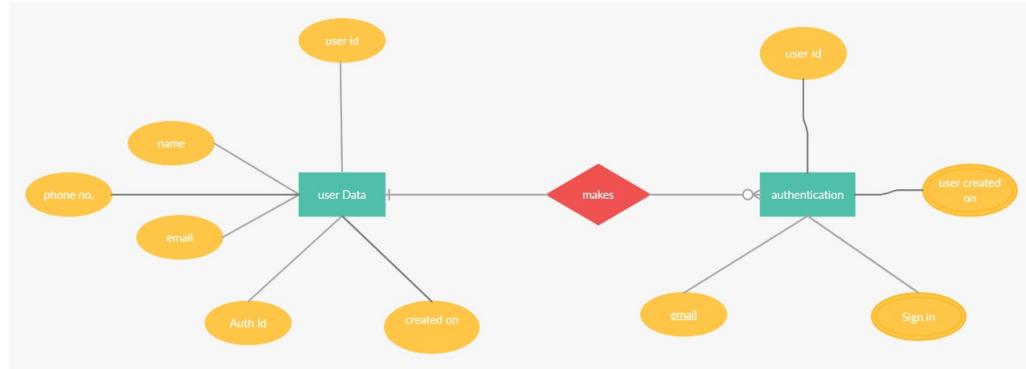


Figure 2: ER diagram for Database

3.3.2 Normalization

Normalization is a database design technique that reduces data redundancy and eliminates undesirable characteristics like Insertion, Update and Deletion Anomalies. Normalization rules divides larger tables into smaller tables and links them using relationships.

3.4 Methodology

1. Divide the application in two major parts - FRONTEND (includes dart) and BACKEND (includes utter SDK, utter x, google rebase).
2. Design a wireframe and prototype the application.
3. First module is User Interface which includes: Authentication screen that contains sign in/sign up page, forget password, Homepage that contains oer page, bottom bar, top bar, side bar, Product list, product detail, add to cart page, order page, payment gateway.
4. Second module is Authentication module which includes: Sign in/ sign up page (google authentication).

4 Implementation, Testing, and Maintenance

4.1 Introduction to Languages, IDE's, Tools and Technologies used for Implementation

These are the necessary tools and materials needed to build the application both the front end and the back-end. These include software and open source materials.

1. 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, Mac, Windows, Google Fuchsia, and the web from a single codebase. The first version of Flutter was known as codename "Sky" and ran on the Android operating system.
2. Flutter SDK: For Android development Java/Kotlin are the programming languages, for cross-platform development using flutter, DART is the official programming language. It contains all the libraries, tools, documentation, etc. required to build software. It is an accessory and not a programming language.
3. Android SDK: Android software development is the process by which applications are created for devices running the Android operating system. Google states that "Android apps can be written using Kotlin, Java, and C++ languages" using the Android software development kit, while using other languages is also possible.
4. Android Studio: Android Studio is the official integrated development environment for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.
5. 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. Dart is an object-oriented, class-based, garbage-collected language with C-style syntax.
6. Google Firebase: Firebase is a platform developed by Google for creating mobile and web applications. Google acquired the platform and it is now their flagship offering for app development.

4.2 Coding standards of Language used

1. Style Guide: This defines the rules for laying out and organizing code, or at least the parts that dart format doesn't handle for you. The style guide also specifies how identifiers are formatted: camelCase, using_underscores, etc.

2. Documentation Guide: This tells you everything you need to know about what goes inside comments.
Both doc comments and regular, run-of-the-mill code comments.
3. Usage Guide: This teaches you how to make the best use of language features to implement behavior. If it's in a statement or expression, it's covered here.
4. Design Guide: This is the softest guide, but the one with the widest scope. It covers what we've learned about designing consistent, usable APIs for libraries. If it's in a type signature or declaration, this goes over it.
5. A library member is a top-level field, getter, setter, or function. Basically, anything at the top level that isn't a type.
6. A class member is a constructor, field, getter, setter, function, or operator declared inside a class. Class members can be instance or static, abstract or concrete.
7. A member is either a library member or a class member.
8. A variable, when used generally, refers to top-level variables, parameters, and local variables. It doesn't include static or instance fields.
9. A type is any named type declaration: a class, typedef, or enum.
10. A property is a top-level variable, getter (inside a class or at the top level, instance or static), setter (same), or field (instance or static). Roughly any "field-like" named construct.

4.3 Testing Techniques and Test Plans

To affirm the online store assessments had been made at distinct stages of the task. We checked the reliability of all of the functions. The test is built on the user Unit. The customer test proved that an account could be created, login can be established, viewing the homescreen where all the products are added.

5 Results and Discussions

5.1 User Interface Representation

5.1.1 Brief Description of Various Modules of the system

1. Product Features Listing: E-commerce application demands the listing of the products with detailing of the products features. The process enables the admin to add/edit/delete item or product details, product dimensions, product color (if any) with option to upload images of the product and pricing.
2. Product Category: By making different categories its easy for the user to select particular category and then shop the product from that category.
3. Customer Database Management: Our online application enables the users to register themselves with the ecommerce portal. This way the application can store user history, by which we can provide services to them according to their needs.

5.2 Snapshots of system



Figure 3: Emulator Screen

The Emulator Screen is the mobile dummy screen.

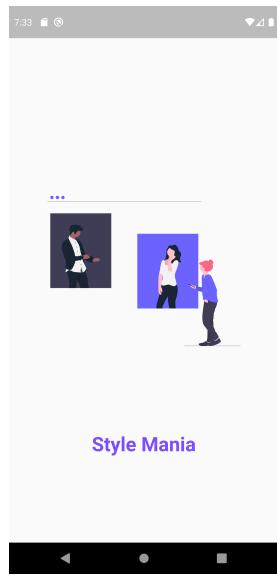


Figure 4: Splash Screen

The Splash Screen is the welcome screen for our application.

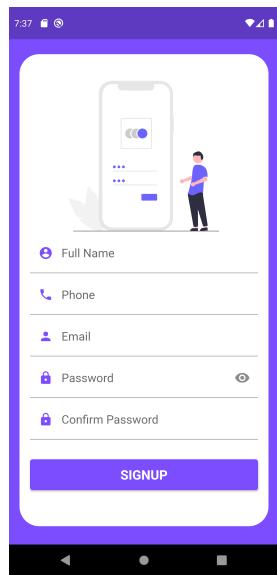


Figure 5: Signup Screen

Here the new user register himself/herself to get the access to homepage of the application.

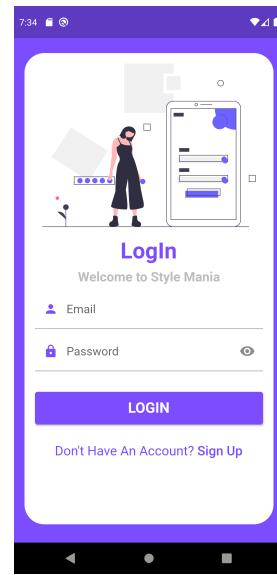


Figure 6: Login Screen

Here the registered user Login to go to the homepage.

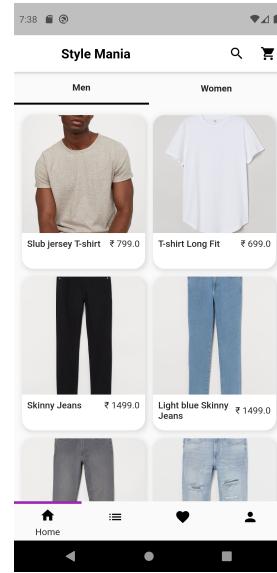


Figure 7: Homepage Screen Men's Section

This is our Homepage Screen Men's Section, where we can view all the products related to men are available.

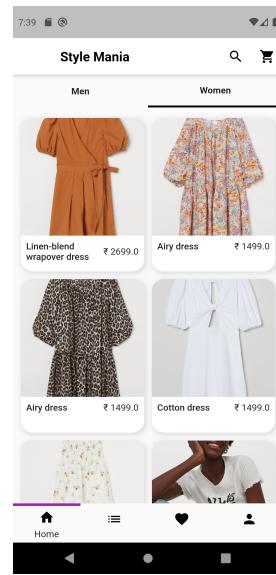


Figure 8: Homepage Screen Women's Section

This is our Homepage Screen Women's Section, where we can view all the products related to women are available.

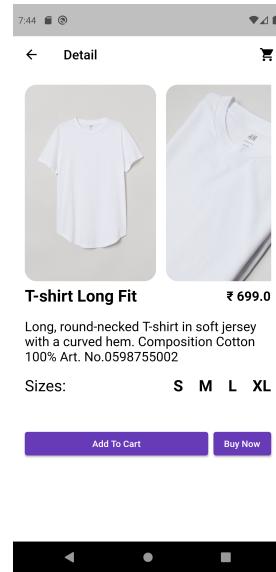


Figure 9: Product Detail Screen

This is Product Detail Screen, where we can view detail of the product we want to buy.

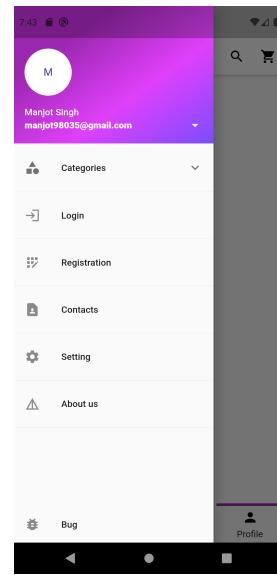


Figure 10: Drawer Screen

This is the drawer available in the application.

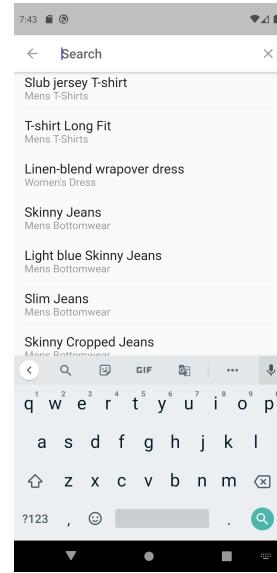


Figure 11: Search Screen

When we click the search icon, search screen is visible.

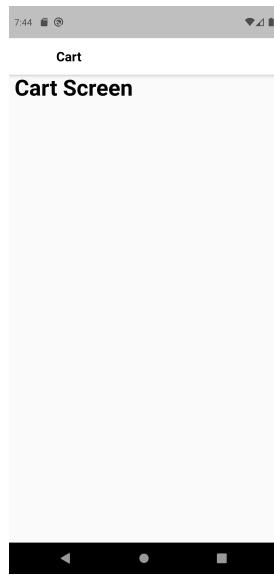


Figure 12: Cart Screen

When we cart icon, cart screen is visible.

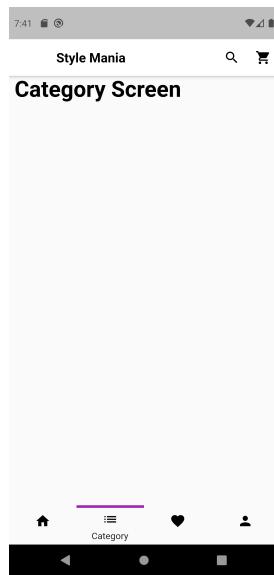


Figure 13: Category Screen

This is a Category Screen.

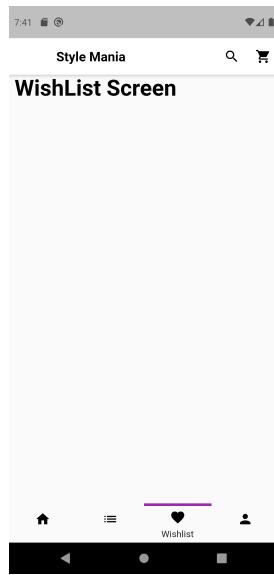


Figure 14: WishList Screen

This is wishlist screen.

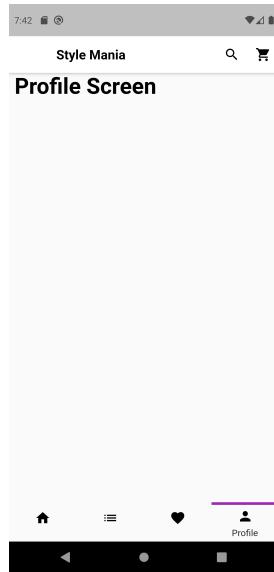


Figure 15: Profile Screen

This is profile screen for user.

5.3 Back Ends Representation

We are using Google Firebase for our backend database. Firebase is a platform developed by Google for creating mobile and web applications. Google acquired the platform and it is now their flagship offering for app development.

5.3.1 Snapshots of Database Tables with brief description

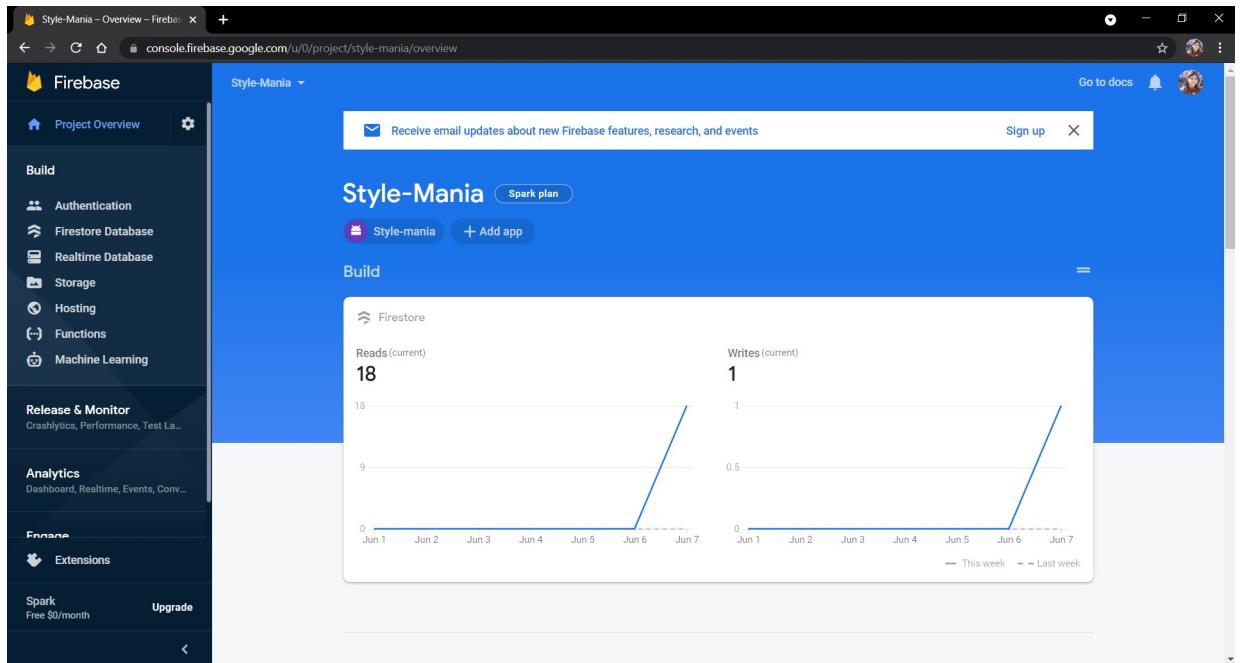


Figure 16: Google Firebase Screen

This is the main screen of google firebase.

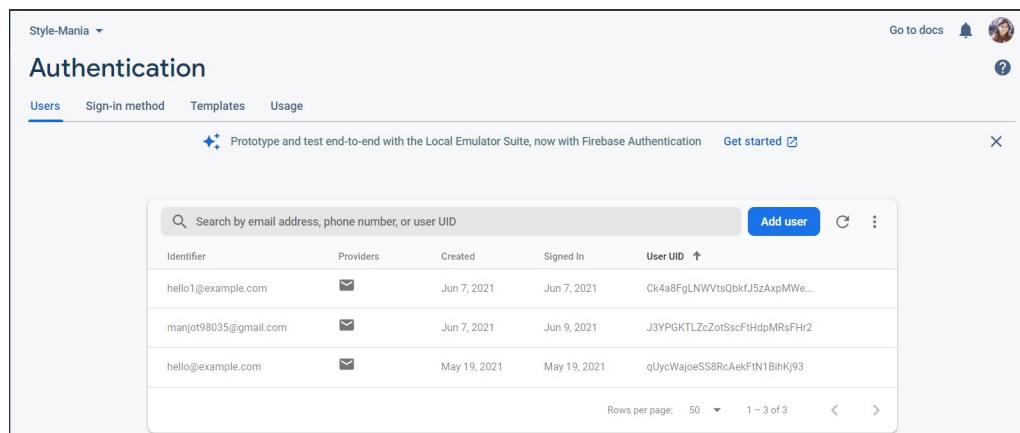


Figure 17: Google Authentication Screen

This shows the user that have signup in our application.

The screenshot shows the Google Cloud Firestore interface. At the top, there's a navigation bar with 'Style-Mania' (dropdown), 'Go to docs', a notification bell, a profile picture, and a help icon. Below the navigation is the title 'Cloud Firestore'. A horizontal menu bar has 'Data' (selected), 'Rules', 'Indexes', and 'Usage'. A banner at the top says 'Prototype and test end-to-end with the Local Emulator Suite, now with Firebase Authentication' with a 'Get started' button. The main area shows a hierarchical tree view: 'style-mania' > 'User_data' > 'A2StVxRq600bGsV1pVbQ...'. On the right, a detailed view of the document 'A2StVxRq600bGsV1pVbQ...' is shown. It contains the following fields and their values:

Field	Type	Value
authId	String	J3YPGKTLZcZotSscFtHdpMRsFhr2
createdOn	Timestamp	June 7, 2021 at 4:45:39 PM UTC+5:30
docId	String	A2StVxRq600bGsV1pVbQ
email	String	manjot98035@gmail.com
name	String	Manjot Singh
phone	String	9875434244

Figure 18: Google Database Screen

This shows the user information.

6 Conclusion and Future Scope

The electronic shop was developed using Flutter SDK, Android SDK, Dart and Google Firebase technology. Any consumer can signup, login, view products according to the categories and customise them. The consumer can log in, with his information such as his email and password. If the login does not go through, the user can re-register. After login, the user can see the product in the home screen and proceed onwards. The product can be customised according to the consumer needs. The user information get saved in the database.

6.0.1 Future Scope

Invoices need to be implemented in the shop, emails and notifications need's to be sent to customers for new arrivals or discount. The shop has to have a search engine where users and customers can search for the various product from the shop. Debit and credit cards need's to be implemented in the shop as well. There have to be language varieties so that none-English users and customers can shop easily without any difficulty.

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