IMPLEMENTATION ON DIGITAL FOOD ORDERING APPLICATION IN RESATURANTS USING FLUTTER

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Abstract: An Online Food Ordering Application is proposed here which simplifies the food ordering process. this Restaurant Ordering Application project is developed to transform the old and traditional system that mostly used by the restaurants to a new and more efficient ordering system. The traditional ordering system brings inconvenience to both staffs and customers as it requires a lot of manual work. The manual work done by the staffs will cause some human errors such as give the incorrect bill to the customers, ugly handwriting of the waiter, incorrect sequence of the order. All these human errors will cause the customer dissatisfaction towards the restaurant. Therefore, this restaurant ordering system is designed and developed to help the restaurant to have a better management. By having this ordering system, the time of placing order has reduced. The customers do not need to wait to be served when they eat in the restaurant. The customers will be more satisfy at this ordering application, the proposed application shows an user interface and update the menu with all available options so that it eases the manual work. Its a Mobile Based Android Application and is a modern and interactive way to order food. the main purpose of this project is to manage the food ordering process through waiter to kitchen and keep records of all the orders which helps owner to know the daily and monthly collection. we are using flutter and dart language for frond-end part and Firebase for backend development.

Keywords: Flutter framework, Dart language, Flutter SDK, Firebase.

I. INTRODUCTION

This application is design for online Food Ordering management System in restaurants using flutter This application built with Flutter SDK and Google Firebase. This Readymade Food ordering management Application will help you out to build your business with minimum hustle and grow your business. This multi restaurant firebase/firestore app is a food ordering app to take order from users through mobile app and process order deliver. This application has fully customizable features so you can customize, in case you required any changes as per your customers order demands. We can add and updates food items daily basis. Its a Mobile Based Android Application and is a modern and interactive way to order food. It has a user-friendly interactive interface which provides easy and quick ordering of the guest. It is not only a digital menu instead of printed menu but its a sales and marketing tool. It will show the class of restaurant by replacing outdated paper menus and at the same time it will provide guest with attractive features. the main purpose of this project is to manage the food ordering process through waiter to kitchen and keep records of all the orders which helps owner to know the daily and monthly collection. we are using flutter and dart language for frond-end part and Firebase for backend Development.

we are making three Apps which for Owner, Waiter and Chef and through waiter app it will take order and process it to chef app instantly then chef will accept the order and status of order card will change to cooking once the order is ready chef will change status to ready and waiter will serve the order if customer want to add order he or she can add more once the table orders get finished the waiter will change the status to finish and table will again showed blanket this activity will showed on owner app also .Owner will have the rights to add and updates menus of the hotel, disabled or enable the table and authenticate the waiter and chef at the joining of restaurant.

II. FRONT-END

Flutter-

- Flutter is an open-source framework by Google for building beautiful, natively compiled, multi-platform applications from a single codebase. In a few words it allows you to create a native mobile application with only one codebase. this means that you can use one programming language and code base to create two different apps (Ios and android).
- Flutter consist of two main parts:
  - An SDK :- A collection of tools that are going to help you develop your applications.
  - A Framework(UI Library based on widgets).
To develop with flutter we will use a programming Language called dart. The language was created by google in october 2011. Dart focuses on Frontend Development to create mobile and web applications.

Increased productivity- Using the same codebase for iOS and Android saves both time and resources.
Flutter’s native widgets also minimize time spent on testing by ensuring there is little to no compatibility issues with different OS versions.

**Easy to learn** - Flutter allows developers to build native mobile applications without needing to access OEM widgets or use a lot of code. This, in addition to Flutter’s particularly appealing user interface, makes the mobile app creation process much simpler.

**Great performance** - Users report that it is difficult to notice the difference between a Flutter app and a native mobile app. Cost-effective. Building iOS and Android apps with the same codebase is essentially building two apps for the price of one. Available on different IDEs. Developers are free to choose between Android Studio and VS Code to edit their code on Flutter.

**Great documentation & community** - Flutter has many great resources to answer your questions, thanks to its ample documentation with easy-to-follow use cases. Flutter users also benefit from community hubs like Flutter Community and Flutter Awesome for exchanging ideas.

Flutter app performance is equivalent to that of native real-time applications. Unlike other frameworks, Flutter apps do not need a bridge to interact with native components. Since these bridges typically cause performance issues, this gives Flutter a decided advantage.

- Flutter’s “hot reload” feature allows developers to change the code on emulators, simulators, or real devices, and see results in real-time. The changed code is then reloaded immediately while the app is running. No restart required. Hot reloads make building UIs, adding features, and bug fixing simpler than ever.

**Dart:**

- Dart is an open-source, general-purpose, object-oriented programming language with C-style syntax developed by Google in 2011. The purpose of Dart programming is to create frontend user interfaces for the web and mobile apps. It is under active development, compiled to native machine code for building mobile apps, inspired by other programming languages such as Java, JavaScript, C#, and is Strongly Typed. Since Dart is a compiled language so you cannot execute your code directly; instead, the compiler parses it and transfer it into machine code.

- It supports most of the common concepts of programming languages like classes, interfaces, functions, unlike other programming languages. Dart language does not support arrays directly. It supports collection, which is used to replicate the data structure such as arrays, generics, and optional typing.

**Firebase:**

- Google firebase is a backend application development software that enables us to develop ios and android apps. it’s a development platform for known for its real-time database. Firebase is the central part google cloud development tool. It provides various services like authentication, firebase database, locations, notifications etc.

- We are using dart language and flutter as UI development kit. Dart allows flutter to avoid the need for a separate declarative layout language like JSX and XML.
IV. IMPLEMENTATION OF DIGITAL FOOD ORDERING APPLICATION IN RESTAURANT

1. On Boarding Screen

Fig. On-Boarding

Above images of On-Boarding Screen these screen common in Waiter, Chef and Owner app.

2. Authentication-Screen

Fig. Authentication

Above images of our authentication screens for accessing the user account in a restaurant application. And join restaurant screen only comes when waiter and chef have to join restaurant. After clicking the send request button it goes request to owner app and owner has an authority to confirm or reject the sent request.
First image shows the owner has the authority to accept or reject the request coming from chef or waiter. Third screen and 2nd image is the splash screen of owner app. And others screens shows that owner has the authority to see all real time working of restaurant.

Fig. Owner

Fig. Waiter
Above 1st image shows profile of waiter and 2nd screen for taking order from customer by clicking take order arrow then we can select the menus from menus list then place order button appear on clicking place order button it goes request to chef app to confirmation. Then waiter app change the status waiting to cooking and last screen for owner can see timeline of his order.

5. Chef

Above 1st and 2nd screen shows the profile of chef and he/she can also edit the profile. 3rd screen shows the accept order status request coming from waiter after accepting the order on chef app, waiter app status change to waiting. For confirmation order Make ready status show on chef app. Chef can see the service order records.

V. CONCLUSION

In this paper, we proposed the digital food ordering application in restaurant using flutter technology. Instead of taking manual order from customer by using pen/pencil and paper, we are using smart phones or tablet to provide necessary interfaces with customer to view and order menu. With private login system, waiter can view and make order and receive updates in real-time we are making three Apps which for Owner, Waiter and Chef and through waiter app it will take order and process it to chef app instantly then chef will accept the order and status of order card will change to cooking once the order is ready chef will change status to ready and waiter will serve the order if customer want to add order he or she can add more once the table orders get finished the waiter will change the status to finish and table will again showed blank this activity will showed on owner app also. Owner will have the rights to add and updates menus of the hotel, disabled or enable the table and authenticate the waiter and chef at the joining of restaurant. Our experience in developing digital food ordering application in restaurants using flutter technology in fulfilling and improving business management and service delivery. This system is convenient, effective and easy so that it improves the performance of restaurant’s staff.

REFERENCES

[1] https://flutter.com

