

Mobile COMPUTING

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**Introduction**

Without your smartphone, how would your life be? Today, this question is quite significant and calls for a lot of thinking, but twenty years ago, it didn't. The tremendous changes in lifestyle that have taken place throughout time are the result of developments in an area called mobile computing. The development of portable gadgets that permitted network connectivity significantly altered the course of history. Today, smartphones are commonplace, Alexa is in every home, and computers are growing lighter and smaller without sacrificing processing speed. As the restrictions of mobile computing are being removed, personal computers are becoming less and less common. Today, smartphones are commonplace, Alexa is in every home, and computers are growing lighter and smaller without sacrificing processing speed. As the restrictions of mobile computing are being removed, personal computers are becoming less and less common. Mobile computing is therefore an area that is always growing and has enormous impact, from the early days of bulky laptops to the paper-thin displays of the present and future. We try in this report to show our effort in building a mobile application from scratch.

**Overview implementation**

In this project we implement a mobile application developed through android studio using java and xml languages and firebase from google as the database. Our mobile application is a basic hotel booking application where users can sign up and access their accounts book one of the three hotels available then check their reservation information all with a few buttons.

**Technical implementation**

There are two types of programming that occurs in android studio. One is the xml phase which is responsible in building the windows or frames with texts, images and buttons that are later on have logical functions added to it using java. There are 11 main activities. Main activity, sign up, login, search, hotel1, hotel2, hotel3. Datepicker, RoomPicker and confirm. For user credentials we used firebase from google as our database. We created three slots requiring user to enter Email, Username, Password. Then it goes into if conditions to check for error. We authenticate by using CreateUserWithEmailAndPassword() function inside we create a reference called users and we use userID generated from firestore itself after we inserted Fname for full name and Email for email. No Errors must appear in order for user to log in. Login page user is required to enter E-mail and password and if its correct authentication happens and “toast” activates than moves to Home Activity. Home activity shows username that it was entered in sign up we fetch it here. There are 2 buttons reservation if any and booking which take us to search activity. Reservation if there any it would be visible and fetch check in date and check out date and address. Search activity has 2 drop down lists for city and location. We created 2 arrays to store cities and location. When sp city is selected there are 3 if conditions if position is 0 it shows the location 0 position in location spinner. Once select is clicked we upload city and location picked and depending on city the it would choose one of 3 activities hotel1, hotel2, hotel3. Hotel1, hotel2, hotel3 we just fetch data we display them to user. We go to room picker here the user will see 4 checkboxes of features to choose from and spinner of what kind of room is needed. Once select button is clicked a list of if conditions to update database. Depending on the city chosen the price will vary and will be stored in price variable. And all will be updated to firestore. Datepicker script we used MaterialDatePicker function for our check-ins and check outs Confirm activity shows the information stored from firestore to Confirm with user.

This sums up how in details our entire application works. For future work we hope we can increase functions and better designs and better authentication services such as SMS OTP.