PROFESSIONAL PHOTOGRAPHERS

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project/internship titled "Professional Photographers", submitted by Sukanta Kumar, ID No: 172-15-10011 and Faijul Islam Rupom, ID No: 172-15-9830 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 01-06-2021.

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We hereby declare that, this project has been done by us under the supervision of **Ms. Farah Sharmin, Sr. Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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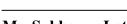
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ABSTRACT

This report provides results of a project named "Professional Photographers". This explores the occupational area of professional photographers of various sectors, users who needs to hire photographers and buy stock photos and also seeks for photography education, established appropriate committee and conducted task verification. We tried to develop an android app where three different parts are in one platform. Here we added photographer hiring system, stock photo selling system by category wise and also education system by offering different photography courses. We tried our best to make the user interface user friendly so that users feels comfortable by using our app. We have two dashboards for our app. One is for admin and other is for photographers. Users have to register and login in the app for purchasing any facilities. If any client needs to hire a photographer he have to send his event details. Admin panel will get the details and will contact with the photographer. If photographer accepts then admin panel will give confirmation email to client and will book photographer. In stock photos photographers will upload stock photos for selling through their dashboard. For buying stock photos we showed payment methods. In educational sector we added three courses. Also for the educational courses we showed payment methods.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In the time of when all the people are using smartphones which are similar to personal computers offering advanced technologies and advanced functionalities. We all the people are now dependent to our mobile phones for any kind of work. There was time when people searched for any kind of services by going through vehicles or on foot to the offices or institutions. But now who has a smartphone he has everything in his hand. Just by searching or installing any app they can get the desired service easily. We are talking about the photography services here. Actually people nowadays are searching for an application where they can get some more services in one application or in one platform.

We named it "Professional Photographers". It's a native application and for this application we made two dashboards. One we named "Admin Dashboard" and other "Photographers Dashboard". The application we made is for users or for clients or anybody having a mail can register and login here and can get all the three services. Which services we are giving here are hiring photographers for any kind of events or other purposes, photographers can sell their stock photos here and users can buy them easily going through the payment methods, photographers or any user can get educational courses here and they can just grab the courses they desire through the payment methods. A user or client can get all this services from our app very easily.

1.2 Motivation

We noticed there are lots of freelance photographers who are not getting works properly nowadays and many of the photography service offices are closing. Some companies buy stock photos for many official or promotional purposes. Also other people buy stock photos from different sites by a huge price. Some amateur photographers, professional photographers and some other people are doing online photography courses from many sites or apps. Actually in this time people don't like to go to the offices for hiring photographers for their events or photographers don't gets enough time to go to the institutions for study purpose. So, we thought if we bring this three services in one platform then it will be helpful for both clients and photographers. Our motive was to help both by making an application where clients will get their desired services and photographers will earn both by doing event photography and selling their photos and also get their desired educational courses.

There are some apps which don't have all this three services in one application. Also most of the applications which worked for single service they have bugs. This app will ensure users and photographers interaction smoothly.

1.3 Objectives

- 1. To reduce unemployment of photographers.
- 2. To reduce waste of time for searching photographer office to office for hiring.
- 3. To Provide photography study courses.
- 4. To reduce office operating costs.
- 5. To provide photography services.
- 6. To provide stock photos for clients.

1.4 Expected Outcome

- 1. It will reduce unemployment of photographers.
- 2. It will reduce waste of time for searching photographer office to office for hiring.
- 3. Photographers and clients will get photography study courses.
- 4. It will reduce office operating costs.
- 5. It will provide photography services.
- 6. Clients and companies will be able to buy stock photos.

CHAPTER 2

BACKGROUND

2.1 Introduction

Our application is an android application which is made for photographers and clients or users for dealing. In this time everyone is using an android smartphone which is reliable and efficient for all classes of people. For making life easier everyone chooses the things which makes their life more and more easier. Using or installing three apps for three services in an android phone is waste of time. People needs more user friendly applications which can save their time and work too. There are lots of applications in websites but no one is having three services in one platform and also they have poor maintenance. As there is all class of people so the application should not be complex.

It should be simple, unique and user friendly. So we made it after analyzing all this stuffs.

2.2 Related Works

- BD Photographers [8]: It has just photographer hiring system. It has not stock photo selling feature nor education feature.
- Photographers On-Demand [9]: It has also photographer hiring system. It has not the other two features.
- Canvera View Photobook, Hire Photographer [10]: It is a photographer hiring app. Clients can view the photobook of photographers. But it has not stock photo selling feature or education feature.
- Learn Photography. Photographic Course [11]: It has just some articles on basic photography. It has not the hire photography feature nor the stock photos selling feature.

2.3 Comparative Studies

Comparatively, there is no such application which have this three services in one application. Which applications are giving single services they are also not much active. Some applications have only photographer hiring option or other applications have stock photo selling services or others have only education services. Some of them have lots of bugs. No one tried to make this kind of application yet which having this three services.

2.4 Scope of the Problem

Obviously for our application we faced some problems. The main scope of the problem is the source of information and idea. Actually every classes of people will use this application so the application should be user friendly and simple. For making user friendly and simple we had to talk with some clients and also with some photographers for information and ideas. Getting information or ideas from them was tough.

2.5 Challenges

Faced Errors: We faced lots of errors during the whole project period. The most challenging matter was to fulfill the design of the app so that the user willingly can use our application. During developing this application sometimes version updated and we worked with bug problems. Sometimes there was some invisible error that was very much tough to find and correct them. It needs lots of time to spend fixing those.

Time Scheduling: As we worked on a big project it was too tough to complete the whole project in this short time. We had to make several meetings and time schedules for completing our project.

Poor Communication: As for the coronavirus pandemic time we couldn't always work together. We two members are developing this project. It was very tough to get together always and solve every stapes of the project problem. After all we tried to communicate all the time and it was very important to make this project successful.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

The DFD model we used in our project is given below. The business process model is a systemic way to represent the workflow of a system. A dataflow diagram is a graphical way to represent the follow of data through an information system. The logical data flow diagram describes the flow of data through a system to perform certain functions of a business. We can link up our DFD and business process diagram for connecting our system processes and business activities. Our system DFD model is shown:

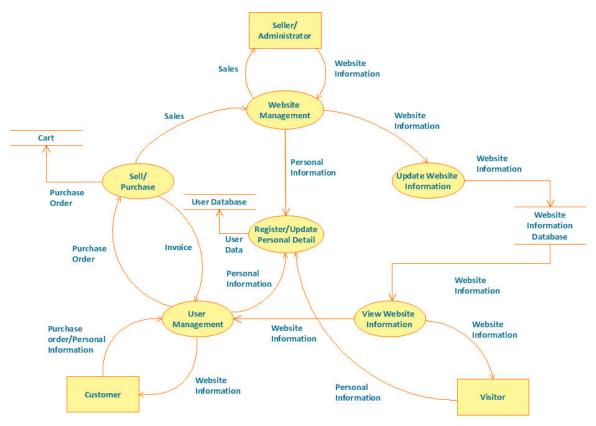


Figure 3.1: Data Flow Diagram [5]

3.2 Requirement Collection and Analysis

There are some criteria in primary condition development. The primary conditions of development are requirement analysis and requirement collection. There are two types of requirements for development. One is the functional requirement and the other requirement is nonfunctional. Those activities performed by software are called functional. Nonfunctional requirements generally define the personality of an application.

Functional Requirement: In our project, there are many functional requirements. There is an authentic login, a photographer hiring system, stock photo buying system, educational course purchasing system, photographers have to give their details with their portfolio.

Nonfunctional Requirement: Nonfunctional requirements usually depend on how much user-friendly UI someone is using. UI should be user-friendly and simple but unique for excellent user experience.

3.3 Use Case Modeling and Description

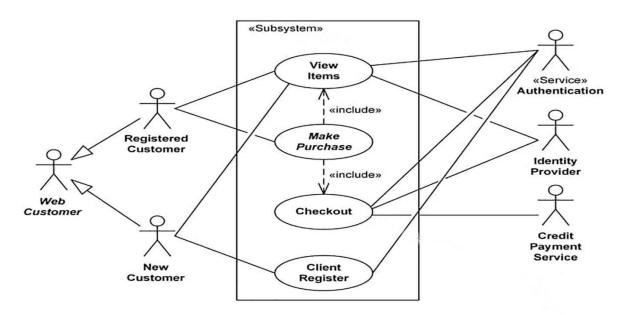


Figure 3.2: Use Case for The System [6]

Clients or users can log in, register and reset their password in their accounts. They also can see photographers, hire photographers by sending them event details, buy stock photos from the stock photos categories, enroll in any photography courses by payment through app. If any user or client does not register he can see almost everything but cannot go through any action. After registering they can do that.

Photographers can log in in dashboard to update their profile or portfolio. They can upload or delate any photos from their portfolio and also they can do the same from stock photos. They also can give their categories in which sectors they work.

Admin can register, update, delete any photographer and can see photographer details. An admin has total right to change or update anything in the dashboard or in the application any time they want or need to.

Clients or users will pay through payment method and admin will get the payment first and admin will pay the photographers.

Every users or clients and photographers have their authentic account.

3.4 Logical Data Model

The logical data model presents the Entity-relationship diagram called the ER diagram. An entity-relationship diagram (ERD) shows the relationships of entity sets stored in a database. An entity in this context is an object, a component of data. An entity set is a collection of similar entities. These entities can have attributes that define its properties. An entity is a piece of data of object or concept about which data is stored. The ER diagram of our system is given below.

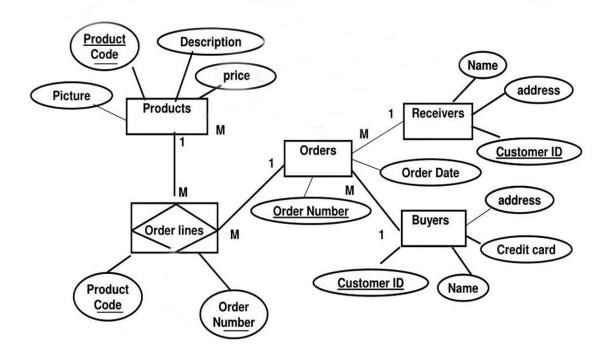


Figure 3.3: Entity-Relationship Model [7]

3.5 Design Requirements

All system or software have some issues must be considered that reproduced the overall design of the goals that the system expected to achieve. The project design will differ from the system of other systems. We find out some points for the design requirement are given below.

User-Friendly: Our application is very much user-friendly. People will easily be able to access all of the features smoothly. The design is very simple and all the layouts are very well decorated.

Efficient: Running the application faster on any devices is very important. We made our application very smoother and bug-free. We made this application design very light.

Compatible to various devices: Our application is compatible with any android smartphone that supports the minimum SDK [3] level.

Features:

- There are four types of users: Admin, User, Photographer, Student.
- Admin can add / delete / update Photographers.
- Admin can supervise all other account details.
- Admin can see the users or clients hiring or buying things.
- User/Client will register and update an account.
- Users can easily hire a photographer.
- Users can buy stock photos from stock photos section.
- Stock photos are in categories.
- Users can enroll in any educational courses by paying.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

The part that can be seen that means the visual part of an application is called Front-End. Front-End Design consists of two parts: XML file for the design and structure of the user interface and class for developing logical operations of that user interface. We used CSS bootstrap [4] here. In the XML file of our user interfaces, we are using various activity layouts and various types of labels such as recycler view, card view, edit text, image view, button, text view, slider, and various animation and custom fonts. We have also used some extra XML files and classes to make our application much more user-friendly and attractive user interface so that it becomes easy.



Figure 4.1: User Welcome Page

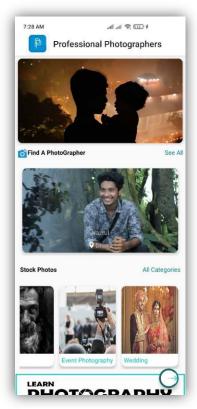


Figure 4.2: User Home page

Figure 4.1 shows the user's welcome page for our app. When one user will open our app in their phone they will see this page.

Figure 4.2 shows the home page of our app. After the welcome page users will see the home page. In our home page there is five things. There is top banner which is an auto slider, hire photographer section which is also an auto slider also it has all viewing option, stock photos section which is a slider and there are lots of categories and also all viewing option, educational sector and log in and registration option.

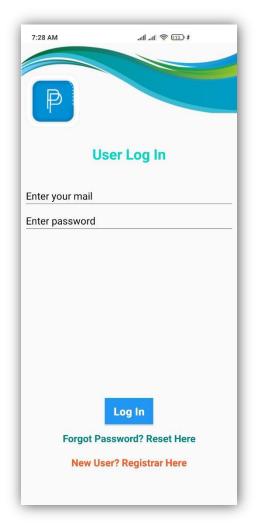


Figure 4.3: User Login Page

Figure 4.3 shows the login page. Here if user is registered from before he or she can log in by giving their mail and password.

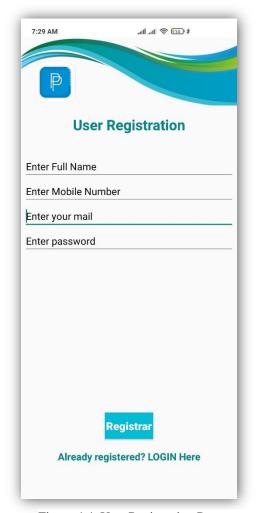


Figure 4.4: User Registration Page

Figure 4.4 shows the user registration page. Here user have to give their full name, their phone number, their mail address and their password for registering as a user. Here is also an option, if any user has registered before then he can log in by tapping there. It will take them to the login page again.

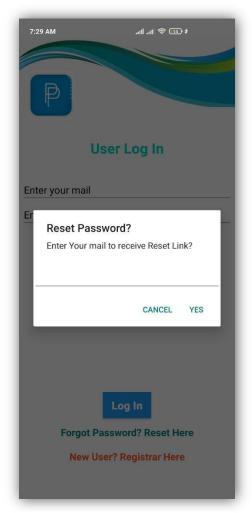


Figure 4.5 Password Reset Page

Figure 4.5 shows the password reset page. If someone forgets their password they just can give their mail by tapping forgot password and reset here. When one user will give his mail he will get a password reset link in his mail. By the link he will be able to update a new password.



Figure 4.6: User Login



Figure 4.7: Successful Login

Figure 4.6 shows the user's log in. User have to give their real user id and password for log in to the app.

Figure 4.7 shows the user profile. If the log in id and password gets correct then there will be a toast and it will say that log in successful.





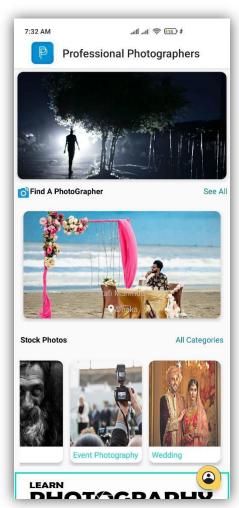


Figure 4.9 Photographers Auto Slider

Figure 4.8 shows the top banner auto slider where there are the best photos kept to auto slide all time.

Figure 4.9 shows photographers auto slider where there are all photographers with their name and location. From here users can pick a photographer and can visit their profile for viewing their portfolio.





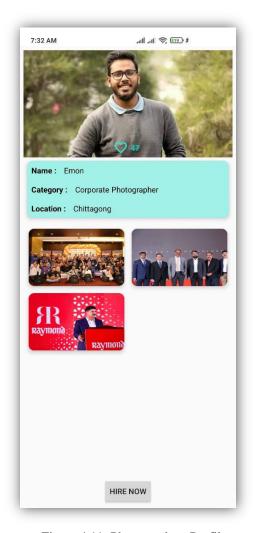
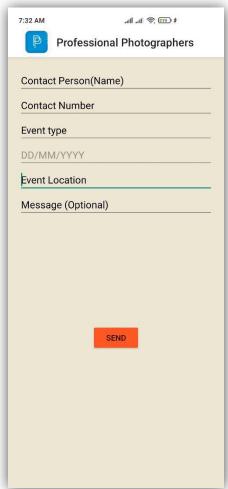


Figure 4.11: Photographers Profile

Figure 4.10 shows photographers list. In this list there will be all the photographers who logged in in the photographer dashboard. Here photographers name, location and category shows.

Figure 4.11 shows photographers profile. Here is also their name, category and location given. The portfolio they uploaded are shown here. From here users can hire them by clicking hire now.





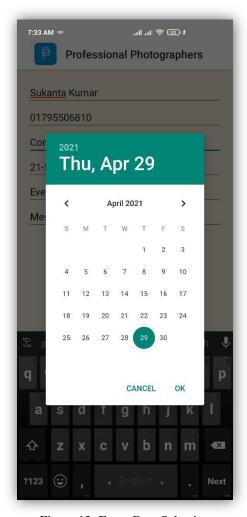


Figure 13: Event Date Selection

Figure 12 shows sending event details to the photographers. Here user have to give his name, his contact number, for which event he is going to book, event date, event location and if wants to send any messages.

Figure 13 shows the event date selection. User can select the date by this calendar.



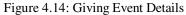




Figure 4.15: Confirmation Toast

Figure 4.14 shows one's event details. Here any user can give their event details like this and send the details to the admin panel.

Figure 4.15 shows the confirmation toast that the admin got the event details of the users. The toast will show we'll contact with you. It will be shown in the user profile.



Figure 4.16: Stock Photos Category

Figure 4.16 shows stock photos category. When user clicks in all categories from the stock photos section it takes them in the all categories of stock photos page. In stock photos category there is twelve categories. Wedding, Event Photography, Portrait, Product, Fine Art, Fashion, Architectural, Sports, Corporate, Wildlife, Travel and Documentary are the categories.



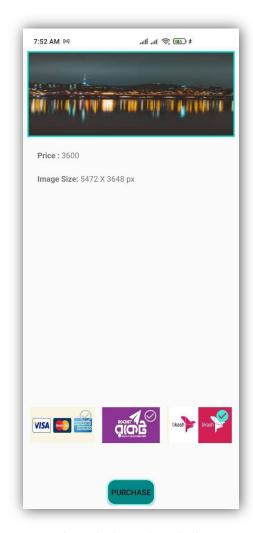
Figure 4.17: Photos Inside Corporate
Photography



Figure 4.18: Photos Inside Travel
Photography

Figure 4.17 shows photos inside corporate photography. Which photos one photographer uploads for sell all the photos comes here in their profile with the price they give in the dashboard.

Figure 4.18 shows photos inside travel photography. Actually there are twelve categories total and every category will have photos if photographers uploads in the stock photos section in the dashboard.



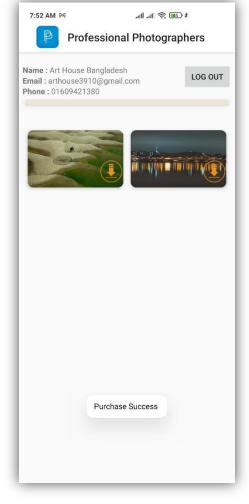


Figure 4.19: Purchase Options

Figure 4.20: Purchase Success

Figure 4.19 shows purchase options for buying the selected photo. There is photo size and also the price of the photo. There is three option to pay. One is by credit or debit card, other is by rocket and other is by bKash.

Figure 4.20 shows purchase success toast. When user clicks on the purchase his selected photo adds on his profile like cart.



Figure 4.21: Learn from Experts

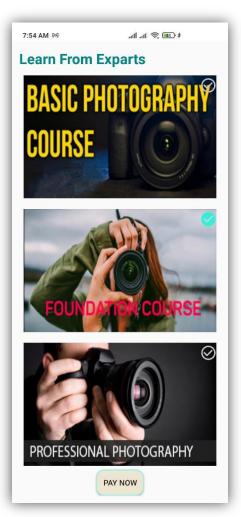
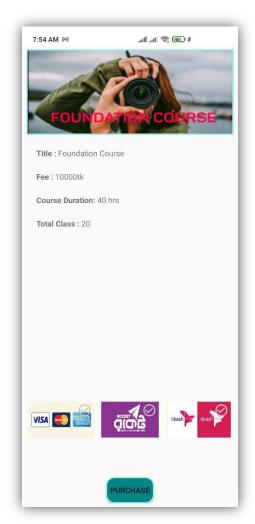


Figure 4.22: Choose Course

Figure 4.21 shows all the courses in learn from experts. There are three courses now. One is basic course, second is foundation course and the other and last is professional photography course.

Figure 4.22 shows course choosing. User can choose any course from here which they want to take. There is pay now option for completing the payment. Users can choose a course and click on pay now to pay the course fee.





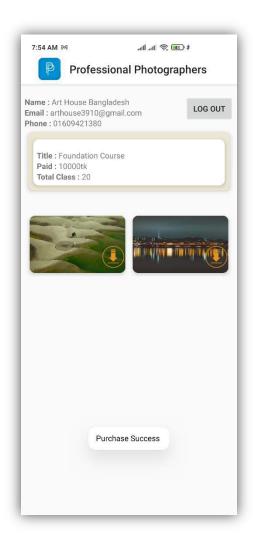


Figure 4.24: Course Purchase Success

Figure 4.23: shows course purchase option for the selected course. Here is foundation courses banner, course title, course fee course duration and total classes given. User can pay here by credit or debit card, by rocket or by bKash. They have to click on the purchase to complete the payment.

Figure 4.24 shows the course purchase success. Which course is purchased that will be shown in user profile.

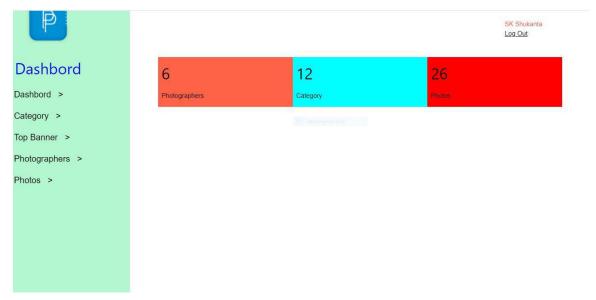


Figure 4.25: Admin Dashboard

Figure 4.25 shows admin dashboard. Here admin can see the number of photographers logged in, number of categories and number of photos uploaded. On the bottom of the right corner admin can log out.

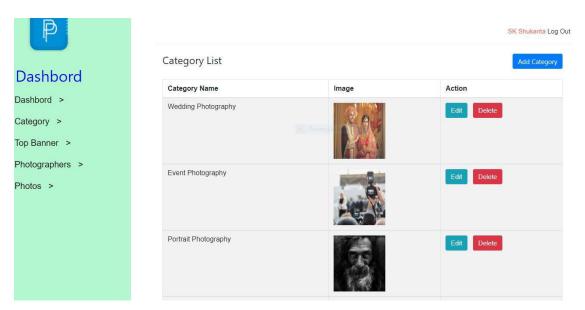


Figure 4.26: Category List

Figure 4.26 shows category list of stock photos. Photographers uploads the stock photos in their dashboard and the photos are shown to the admin dashboard category wise.

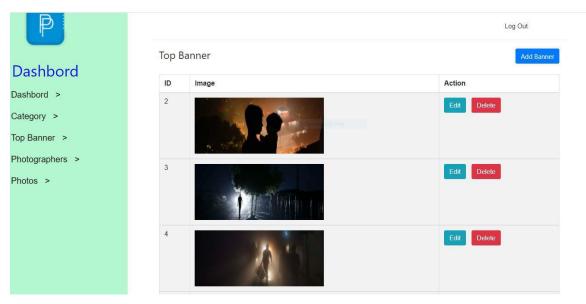


Figure 4.27: Top Banner

Figure 4.27 shows the top banner. Admin can upload banner in the top banner. They can edit the photos and also can delete them.

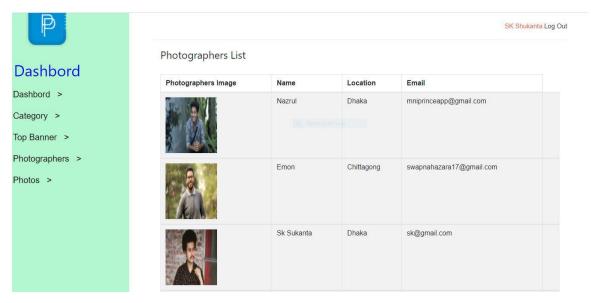


Figure 4.28: Photographers List

Figure 4.28 shows the photographers list. Which photographers logged in from their dashboard this list shows them with their name, location, email address and also with their profile photos.

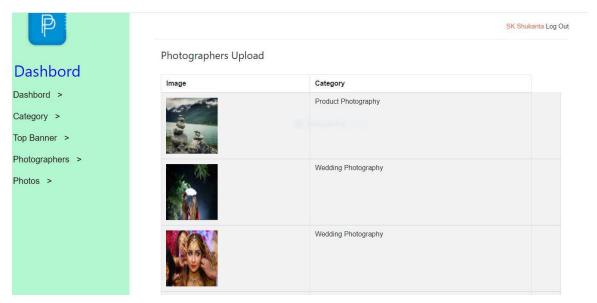


Figure 4.29: Photographers Upload

Figure 4.29 shows photographers upload. The photos which photographers upload in their dashboard are shown here with the categories.



Figure 4.30: Photographers Dashboard

Figure 4.30 shows photographer dashboard. Here are three sections: dashboard, profile content and photo list. Number of photos one photographer uploads are shown in dashboard.

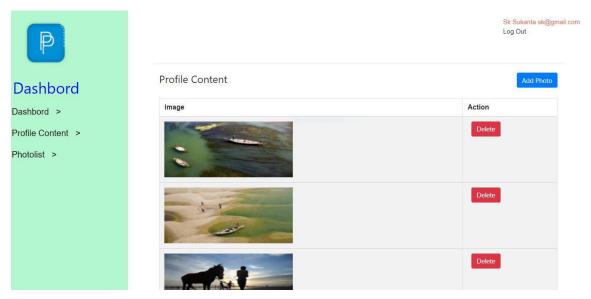


Figure 4.31: Profile Content

Figure 4.31 shows photo content. Actually it's the photographer portfolio. This pictures will be shown in photographer profile. Photographer can add photos and also they can delete them anytime.

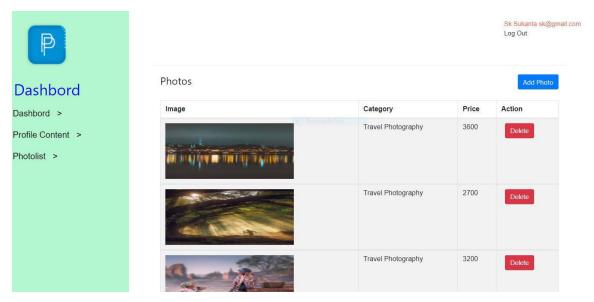


Figure 4.32: Stock Photos

Figure 4.32 shows stock photos. Photographers can upload stock photos here by category. They also can give price here for the photos. Photographers can also delete the photos when they want.

4.2 Back-End Operations

Which thing in the app is not visual that means which works in the back of the application is called Back-End Design. As we are developing an android application, we must consider some important Back-End operations. The database is the major of them because of all the tasks performed based on the database. The databases we used are the Firebase [2] database and MySQL [1] database. Firebase database and MySQL database are very fast and real-time. Some basic Back-End Operation of our application is given below:

- Real-time data synchronization
- Easy user authentication
- Firebase data storage
- Automatic server maintenance
- Synchronizes data across many devices
- Admins and photographer data are in MySQL database

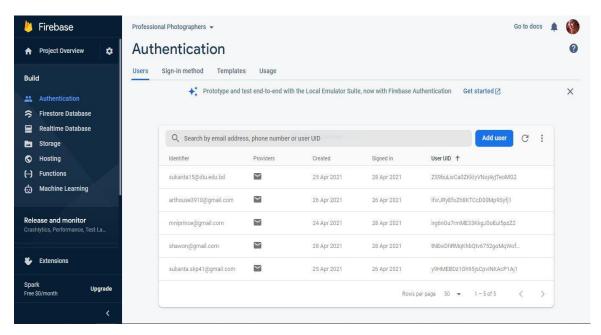


Figure 4.33: All user authentication

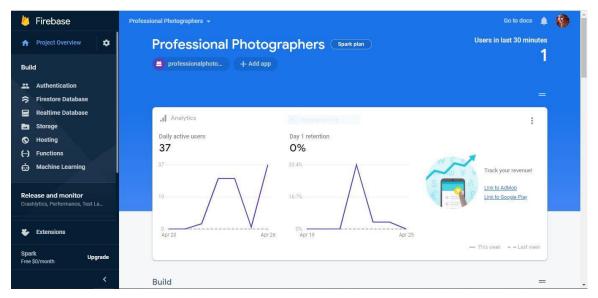


Figure 4.34: Daily active users

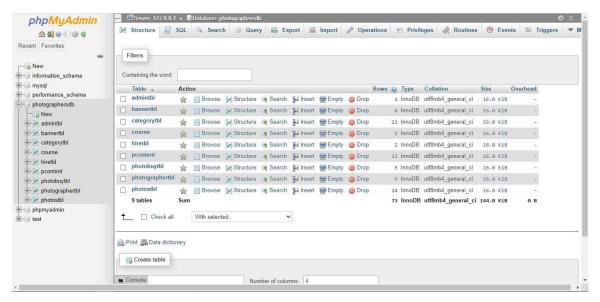


Fig 4.35: MySQL database

4.3 Interaction Design

It's important to do the interaction design for android mobile phone apps. The interaction design makes the app more user-friendly and attractive to every user. When people talk about interaction design it tends to be software product like apps or websites. The main goal of interaction design is to create products that enable the user to achieve their objectives in the best way possible.

Interaction design is the proper way which observes the interaction between a system and its user. On the other hands user experience focuses on the overall experience interaction design between a user and an application.

4.4 Implementation Requirements

To implement the project, we needed Android Studio to design and development of the whole project. On the other hands for the backend we needed a browser and a google account. For testing purposes, we needed JDK and SDK. We also needed a virtual device to run and test the app on the PC. Adobe illustrator, Photoshop is also used for making different types of icons and backgrounds and banners. We also needed a strong internet connection to update some files of the Android studio. We used Java as the programming language. We used retrofit library to fetch and store data to MySQL database. We used app-glide library to load image from server. Also we used firebase authentication for user login or registering.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Database Implementation

For the purpose of data loading we had to create database and tables. MySQL and Firebase are so simple and easy to do it. We connected our app to this both database and through our app we made all the data collations easily. We updated data frequently by using queries initially. We also made queries to load data from database. Here is the implementation of our database. Here are the three major process:

- Firebase Authentication
- Firestore Database
- MySQL Database

We used Query to store and retrieve data from the database. In this case, we stored all image files to the MySQL database storage section and generated an image link to the database using some queries. So that we can access it easily. Besides we stored all the data into a life server. We used Firebase Authentication to make using a unique id for the separation of all user role-based. Authentication also helps to recover user passwords very easily by sending recovery email to the users.

We took all of the facilities of the MySQL Database to our application by java classes, various libraries, and dependencies. To execute our application with the connection of the database we used many methods to upload data, retrieve data and register users.

5.2 Implementation of Front-end Design

We worked for our front-end design in the android studio which is related to XML files and Java classes. XML files are used to design the user interface (UI). In XML file, we added the Buttons, edit text, Relative Layout, Recycler view, Card view, various shapes for the backgrounds, icons, and backgrounds. We related all the things with class by calling them. This classes play logical operations. Front-end design of a app is so much important.

5.3 Implementation of Interactions

We shared our goals and visions for the comparison of our opinion to our friends and supervisor and some of our faculty members about their opinion about the app. We took their suggestions and opinions in some cases. Then we our project members discussed for a friendly user interface, we used pictures and buttons with enough information so that the design is more interactive. All the things we made are more user friendly and interactive applications thinking about the users.

5.4 Testing Implementation

The whole system we tested mainly for the correctness of our application. Testing systems is an integral part of an application. Ultimately, the software is interfaced with other software/hardware systems. Testing systems is a series of outputs. Here are some test cases of our application are given below:

TABLE 1: WHITE BOX TEST CASE FOR THE SYSTEM

Tes	st case	Test input	Expected outcome	Obtained outcome	Pass/Fail	Tested date
1.	Register	Register with correct info	Create account successfully	Account create	Pass	29.04.2021
2.	Register	Register with incorrect info	Create account unsuccessfully	Account create unsuccessful	Pass	29.04.2021
3.	Log In	Login with a valid email or valid password	Login successfully	Successfully Login	Pass	29.04.2021
4.	Log In	Login with invalid email or an invalid password	Login failed	Login failed	Pass	29.04.2021
5.	Select Photographer	Select Photographer	Select successfully	Successfully selected	Pass	29.04.2021
6.	Hire Photographer	Hire now	Hire successfully	Successfully hired	Pass	29.04.2021
7.	Select Stock Photos Categories	Select categories	Select successfully	Successfully selected	Pass	29.04.2021
8.	Select Photo	Select photo to buy	Select successfully	Successfully selected	Pass	29.04.2021
9.	Select Payment Option	Select payment options	Select successfully	Successfully selected	Pass	29.04.2021
10.	Select Photography Course	Select courses	Select successfully	Successfully selected	Pass	29.04.2021
11.	Select Payment Option	Select payment options	Select successfully	Successfully selected	Pass	29.04.2021
12.	Select Purchase	Purchase operation	Complete Purchase	Purchase Done	Pass	29.04.2021

5.5 Test Results

It is a formal way of testing. Test case is the easiest way to estimate testing. It is a document that records data obtained from an evaluation experiment in an organized manner, describes the environment or operating conditions. It actually shows the comparison of the test results with objectives. Here are the test results:

- Login System
- Registration System
- Updating System
- Store Information
- Retrieve Information
- Show Information
- Hire Photographer
- Choose Photographer
- Update Profile
- Update Password
- Choose Stock Photos
- Purchase Photos
- Choose Course
- Purchase course

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

We thought about many purposes of making this application. Photographers are now searching for a app like this where they can get education, can sell their photos and also they can be hired for events. Everybody now having a smartphone so it's so easy to do a business from home. Users or clients will be benefited as they will get their most needy things from here. In just one app they will buy stock photos for their company, they will hire photographers for their different kinds of events and also who are seeking for photography courses they will get that from here. The most important and unique thing is, nobody done it yet or may be not thought about it and we did it. We gave three photography services in one application.

6.2 Future Development Scope

We will develop our app day by day for making it more and more user friendly. Actually photography sector is a big sector. Every year something upgrades in this sector. We have some more attractive and unique plans for our app. Here are some given below:

- Add chat system to chat with the admin panels
- Virtual assistant for the users.
- Use several languages.
- Camera and accessories selling
- Add more courses.
- Add workshops and seminars.

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