FitBuddy Android App

A Project Report

Submitted in the partial fulfillment of the requirement for the degree of

Bachelor of Technology

in

Computer Science & Engineering

by

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May, 2023

DECLARATION

We Nazeem Ahmad and Komal Kumari hereby declare that the project work entitled **" FitBuddy Android App "** is an authenticated work carried out by us at School of Management Sciences Lucknow Under the guidance of **Ms. Niyati Gaur** for the partial fulfillment of the award of the degree of **COMPUTER SCIENCE & ENGINEERING.** and this work has not been submitted for similar purpose anywhere else except to **School of Management Sciences, Lucknow.**

Date:16/05/2023

Place: Lucknow

Nazeem Ahmad

Komal Kumari

CERTIFICATE

This is to certify that the project report entitled " **FitBuddy Android App** " submitted by " Komal Kumari (1904230100026) and Nazeem Ahmad (1904230100036) to Dr. A.P.J. Abdul Kalam Technical University, Lucknow is a bonafide record of work carried out by him/her in the partial fulfillment forthe award of the degree Computer Science & Engineering.

Ms. Niyati Gaur
(Project Supervisor)

Mr. Sunit Kumar Mshra
HOD (CS&E)

ACKNOWLEDGEMENT

It gives us a great sense of pleasure to present the report of the B.Tech. Project undertaken during B.Tech. final Year. We owe special debt of gratitude to my faculty supervisor, Ms. Niyati Gaur Ma'am and all the professors of Computer Science & Engineering department, School of Management Science Lucknow for their constant support and guidance throughout the course of our work. We also take the opportunity to acknowledge the contribution of Professor Mr. Sunit Kumar Mishra Sir Head, Department of Computer Science & Engineering, School of management Science Lucknow for his full Support and assistance during the development of the project.

Signature,

Name: Nazeem Ahmad, Komal Kumari

Roll No: 1904230100036, 1904230100026

Date: 16/05/2023

CHAPTERS

Chapters of a project report may be broadly divided in following manner

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CHAPTER 1 - INTRODUCTION

Overview of the project

The FitBuddy Android App is an application designed to work as a pocket trainer for users. It has user-friendly interface whit makes it easier to use and allows user to works users on their fitness and track their progress.It offers various features like Personalized workout plans, Customized Diet chart, Progress tracker, BMI Calculator, Step count, Workout and meal reminders and many more. This Application is build using Java, Kotlin, Xml, Json and it is totally build on Android Studio. It has separate modules for every feature and uses GIF to demonstrate the exercises to the users. To store users progress and other data it uses Firebase Database with also allows username and password based authentication for first login in device. It have dynamic features like Step count, Calorie meter, etc which uses phones sensors to work with and dose not require any fitness band. This app is perfect solution for people who travel a lot, who are new to fitness and don't have enough money to invest in fitness initially, people having specific time problem to dedicate for fitness. It is portable and can be accessible from any location.

Objectives Scope:

The objective of this app is to develop a comprehensive mobile application that promotes physical fitness, encourages healthy habits, and assists users in achieving their fitness goals for free. The app can provide a range of features and functionalities to cater to the needs of individuals interested in fitness, such as workout tracking, diet recommendation, goal setting, personalized recommendations, progress tracker, etc.

The scope of the project encompass various aspects, including but not limited to:

1. Workout Tracking and Planning: Provide a platform for users to track their workouts, including exercises performed, sets, repetitions, and weights. Offer pre-built workout plans or allow users to create their own custom routines.

2. Exercise Database: Incorporate a comprehensive database of exercises, including descriptions, images, and videos, to guide users on proper form and technique.

3. Diet and Nutrition Monitoring: Enable users to track their daily caloric intake, macronutrients, and water consumption. Offer a food diary or integrate with existing nutrition databases to provide nutritional information for different food items.

4. Progress Tracking: Implement features to track and visualize users' progress over time, including weight, body measurements, fitness achievements, and statistics. Graphs, charts, and milestone notifications can be included to motivate users.

Chapter 2- Requirement Analysis and Specification

Feasibility Study

Before embarking on the development of the FitBuddy Android App and conducting a thorough analysis of the existing functionalities and required features, it is essential to perform a feasibility study for the project. While all projects can be deemed feasible when unlimited resources and infinite time are available, the feasibility study entails evaluating different approaches to address the given problem. The proposed solution must fulfill all user requirements and exhibit flexibility to accommodate future changes based on upcoming requirements.

Technical Feasibility

Assess the technical capabilities and resources required for implementing and maintaining the system. Determine if the proposed solution aligns with the existing technology infrastructure and anticipate any potential technical challenges.

Economical Feasibility

Evaluate the project's financial aspects, including development, deployment, and maintenance costs. Analyze the potential return on investment (ROI) and ascertain whether the benefits outweigh the associated expenses.

Operational Feasibility

Examine the operational impact of implementing the system, such as changes in workflow, staff training needs, and overall efficiency improvements. Identify any potential obstacles or resistance to change from users and stakeholders.

Problem Definition

In today’s time most of the gyms are having their own trainers with a paid membership that everyone can't afford initially, it also creates problem for those who have to travel a lot and constantly have relocate for their work. And in most of the areas people are not accessible to the gyms. A beginner in fitness journey need to be guided to perform proper exercise and to follow a proper guided diet.

Hardware Requirements

ARMv7 or higher chipset.

ARMv7 is a 32-bit instruction set architecture (ISA) developed by ARM Holdings. It was released in 2011 and is the successor to the ARMv6 ISA. ARMv7 is designed for use in mobile devices, such as smartphones and tablets.

ARM-based chipsets are a type of processor that is used in a wide variety of devices, including smartphones, tablets, laptops, and even some servers. ARM stands for Advanced RISC Machines, and it is a reduced instruction set computing (RISC) architecture. RISC architectures are designed to be simple and efficient, which makes them ideal for mobile devices that need to conserve power.

RAM : Minimum 2 GB

RAM, or random-access memory, is a type of main memory in which certain contents may be retrieved directly by the central processing unit in a very short amount of time, independent of the order (and hence location) in which they were recorded. Random-access circuits can support two forms of memory: static RAM (SRAM) and dynamic RAM (DRAM).

Storage Space: 300 MB

The storage space is required to store files of application. Smartphones use a variety of storage devices to store data, including Internal storage, External storage, Cloud storage. Here are some of the most common types of storage devices used in smartphones:

1. eMMC: eMMC stands for embedded MultiMediaCard. It is a type of flash memory that is used for internal storage. eMMC is a popular choice for smartphones because it is relatively inexpensive and it offers good performance.

2. UFS: UFS stands for Universal Flash Storage. It is a type of flash memory that is used for internal storage. UFS is faster than eMMC, but it is also more expensive.inexpensive and it offers good performance.

3. MicroSD card: microSD cards are a type of flash memory that can be used for external storage. microSD cards are relatively inexpensive and they offer a lot of storage space.

Software Requirements:-

Android OS V4.4 or Higher:

Android is a mobile operating system based on a modified version of the Linux kernel and other open-source software, designed primarily for touchscreen mobile devices such as smartphones and tablets. Android is developed by a consortium of developers known as the Open Handset Alliance, though its most widely used version is primarily developed by Google.

Android is a popular choice for mobile devices because it is open-source, which means that it can be modified by anyone. It is a popular and versatile operating system that is perfect for a wide variety of users. It is open-source, has a large selection of apps, and is highly customizable. Android is built upon the Linux kernel, which forms the core of the operating system. The Linux kernel provides the essential services and hardware abstraction layer necessary for Android to run on a variety of devices.

The operating system encompasses a vast array of technologies and components that work together to provide a powerful and versatile platform for mobile devices.

Blue Stacks or any android Emulator:

BlueStacks is an Android emulator that allows users to run Android applications and games on their computers. It provides a virtual Android environment on a PC or Mac, enabling users to access the Android ecosystem and experience mobile apps on a larger screen.

BlueStacks serves as a bridge between the Android ecosystem and computers, It leverages virtualization and performance optimization techniques to create a seamless Android experience within a virtual environment.

Chapter 3- System Design

Data Flow Diagrams :

Level 0:

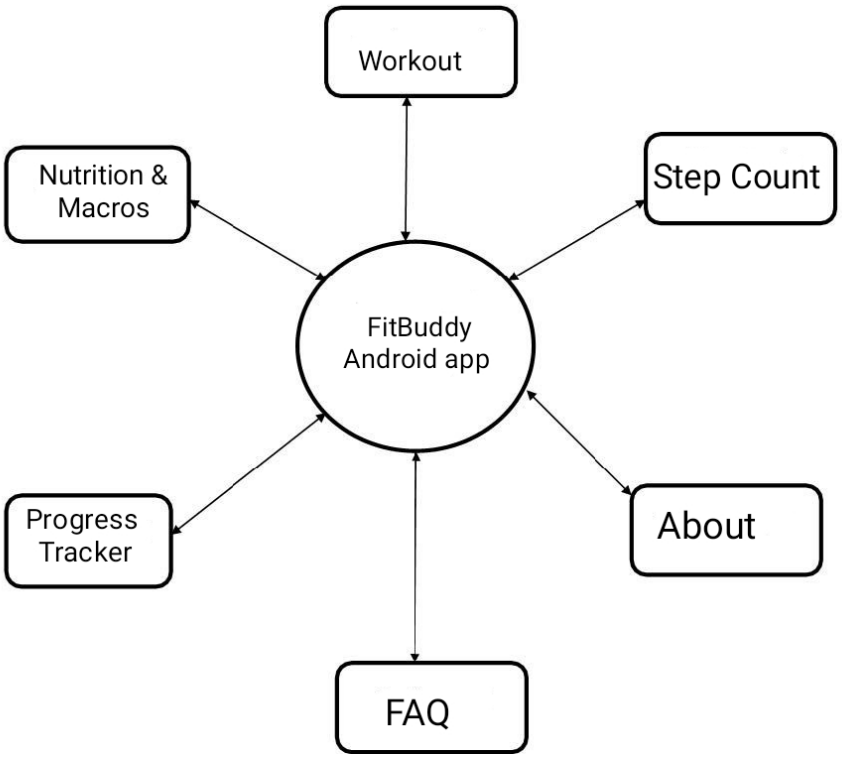

Fig. (3.1)

Level 1:

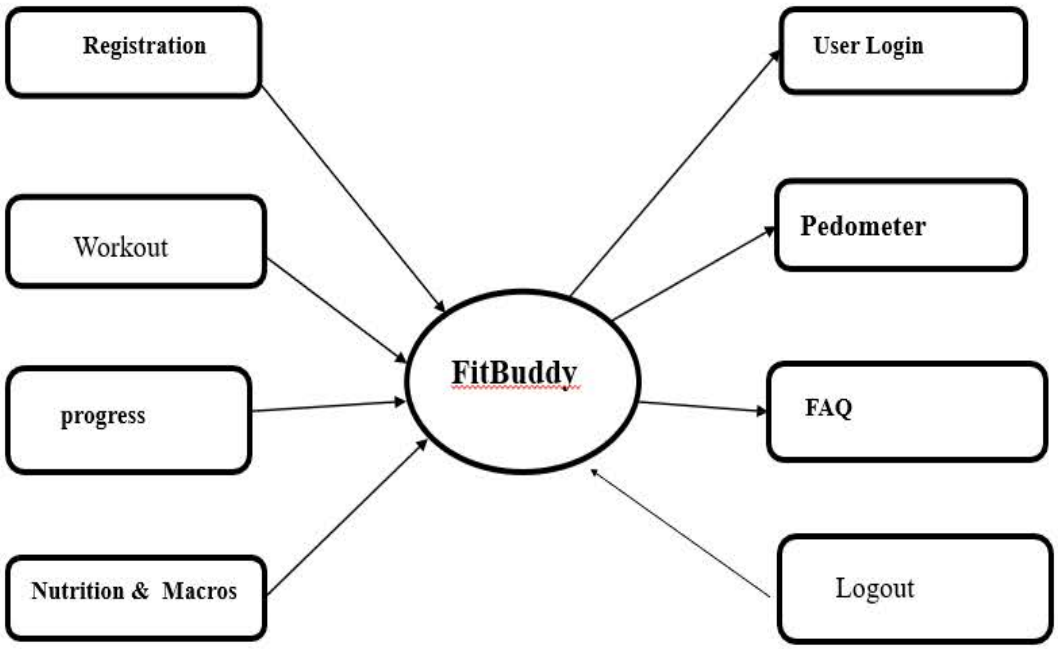

Fig. (3.2)

Level 2:

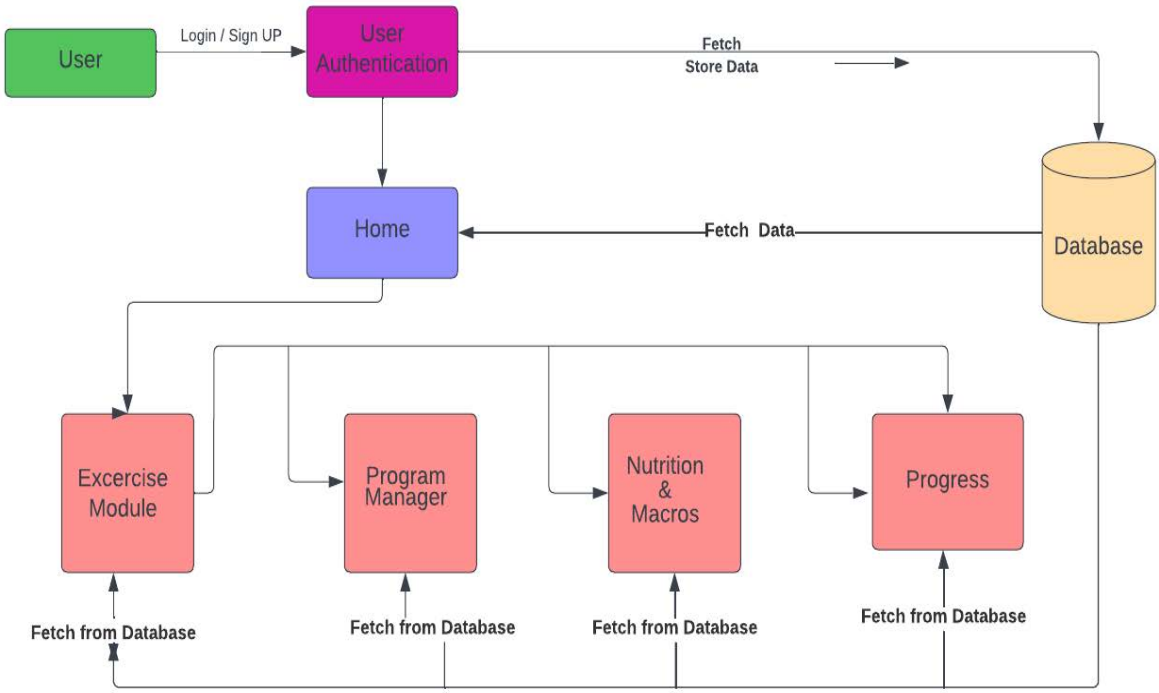

Fig. (3.3)

ER Diagram

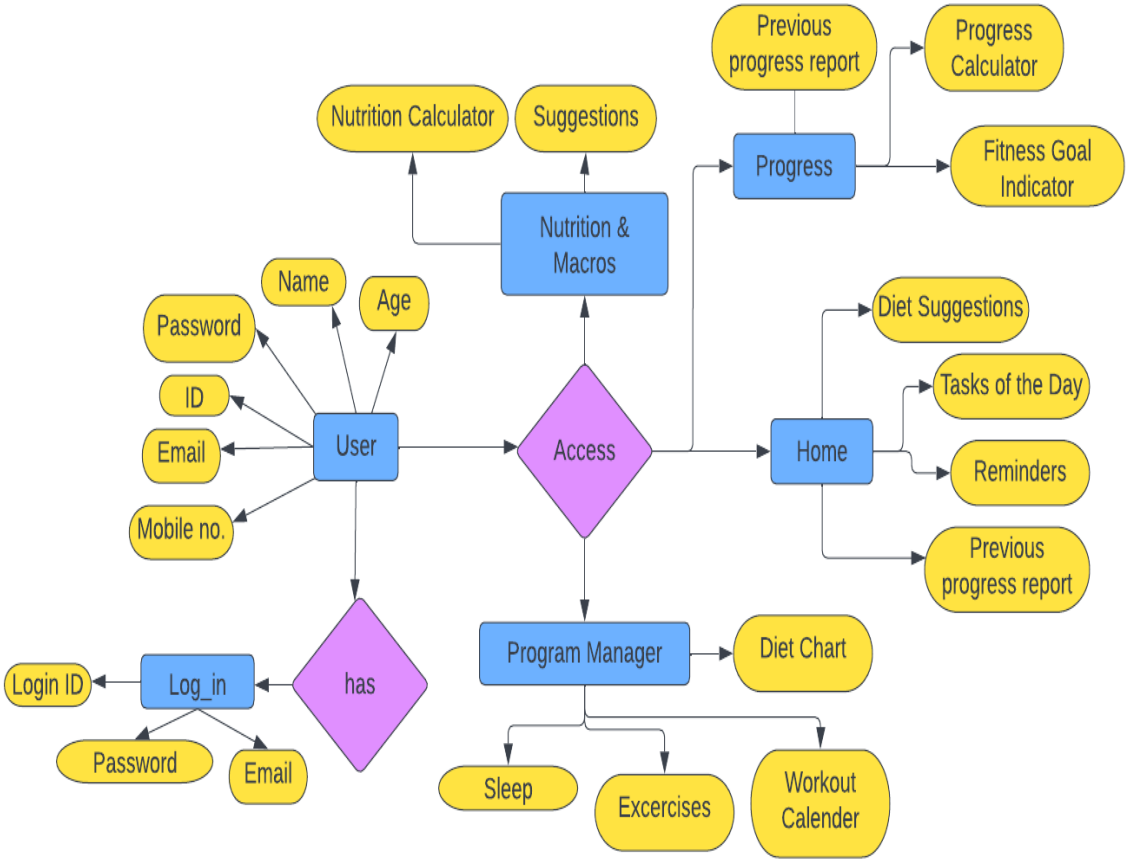

Fig. (3.4)

Chapter 4 – Technology Used

ava:

Java is a high-level, object-oriented programming language that was developed by Sun Microsystems (now owned by Oracle Corporation) in the mid-1990s. It is one of the most popular programming languages in the world and is widely used for building a wide range of applications, from small mobile apps to large-scale enterprise systems.

Java's versatility, extensive libraries, and large developer community make it a valuable tool for building applications across diverse domains. Its ability to run on different platforms, its strong ecosystem, and its enterprise-grade features have contributed to its widespread adoption in the software development industry.

Commonly used for development of Desktop Applications Web Applications, Game Development, Internet of Things (IoT), Server side programming, etc.

Kotlin:

Kotlin is a modern, statically-typed programming language that has gained significant popularity as a preferred language for Android app development.

Kotlin offers a modern and powerful language for Android app development. Its focus on interoperability, conciseness, null safety, functional programming, coroutines, and enhanced tooling support makes it an attractive choice for developers seeking productivity, maintainability, and better overall development experience on the Android platform.

Firebase Database:

Firebase Database is a cloud-hosted NoS L database provided by Google as part of the Firebase platform. It is designed to store and synchronize real-time data for web and mobile applications.

Firebase Database is widely used for a variety of applications, ranging from small personal projects to large-scale enterprise solutions. Its real-time synchronization, offline capabilities, flexible data model, and seamless integration with other Firebase services make it a popular choice for developers looking for a scalable and efficient solution for storing and synchronizing data in their applications.

Android Studio:

Android Studio is the official Integrated Development Environment (IDE) for Android app development. It is a comprehensive toolset provided by Google that offers a wide range of features and resources to streamline the process of creating, testing, and deploying Android applications.

It provides a comprehensive environment for Android app development. It support the latest Android SDKs, APIs, and development practices.

It offers features like Code Editor, Layout Editor, Gradle Build System, Integration with Firebase and Google Services,Version Control, Android Asset Packaging Tool (AAPT), Performance Profiling, Android Emulator, etc.

Android Operating System or Emulator:

Android is an open-source operating system primarily designed for mobile devices, developed by Google. It is based on the Linux kernel and is specifically tailored for touchscreen devices such as smartphones, tablets, smartwatches, and televisions.

To run and test our application Minimum required Android version is v10 or greater. The can be run on android Emulator also Such as BlueStacks which basically installs on a system of different OS and architecture and uses device's hardware to create a virtual Android device.

Chapter 5 – Coding

Screenshots:

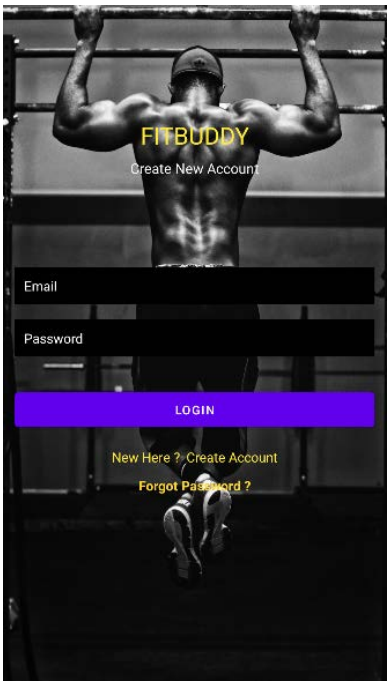

Fig. (3.5) – Login Page Screenshot

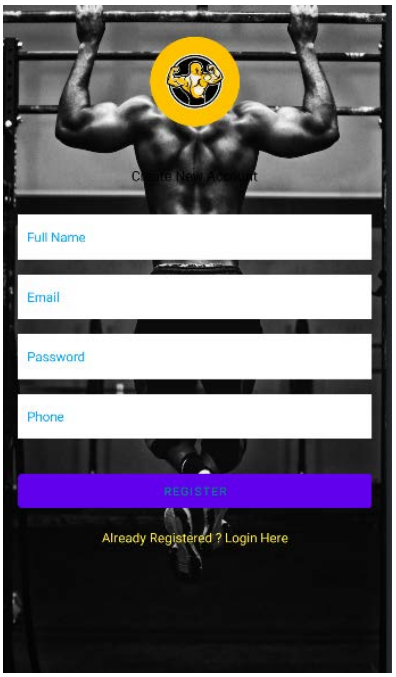

Fig. (3.6) – Registration Page Screenshot

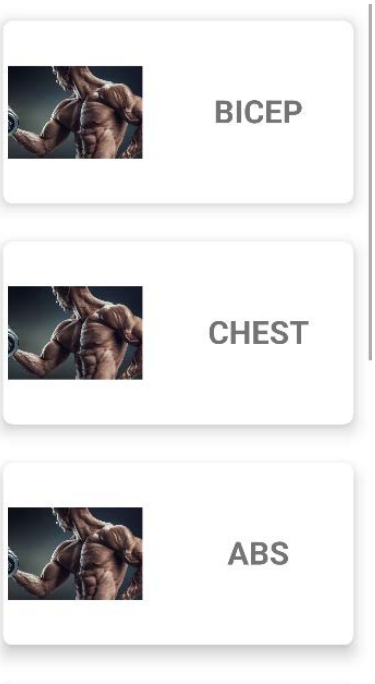

Fig. (3.7) – Exercise Page Screenshot

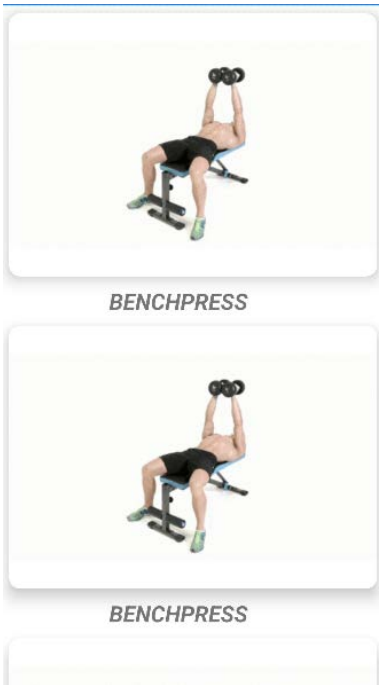

Fig. (3.8) – Chest Workout Page Screenshot

Registration Page Code:

```
import...

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.tasks.OnCompleteListener; import
com.google.android.gms.tasks.OnFailureListener; import
com.google.android.gms.tasks.OnSuccessListener; import
com.google.android.gms.tasks.Task;
import com.google.firebase.auth.AuthResult;
import com.google.firebase.auth.FirebaseAuth;
import com.google.firebase.auth.FirebaseUser;
import com.google.firebase.firestore.DocumentReference; import
com.google.firebase.firestore.FirebaseFirestore;

import java.util.HashMap;
import java.util.Map;

public class Register extends AppCompatActivity {
        public static final String TAG = "TAG";
    EditText mFullName,mEmail,mPassword,mPhone;
    Button mRegisterBtn;
    TextView mLoginBtn;
    FirebaseAuth fAuth;
    ProgressBar progressBar;
    FirebaseFirestore fStore;
    String userID;

        @Override
    protected void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
setContentView(R.layout.activity_register);

   mFullName   = findViewById(R.id.fullName);
   mEmail      = findViewById(R.id.Email);
   mPassword   = findViewById(R.id.password);
   mPhone      = findViewById(R.id.phone);
   mRegisterBtn= findViewById(R.id.registerBtn);
   mLoginBtn   = findViewById(R.id.createText);

   fAuth = FirebaseAuth.getInstance();
   fStore = FirebaseFirestore.getInstance();
   progressBar = findViewById(R.id.progressBar);

   if(fAuth.getCurrentUser() != null){
       startActivity(new Intent(getApplicationContext(),Fitness.class));
       finish();
   }
```

```
mRegisterBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                final String email = mEmail.getText().toString().trim();
                String password = mPassword.getText().toString().trim();
                final String fullName = mFullName.getText().toString();
                final String phone    = mPhone.getText().toString();

                if(TextUtils.isEmpty(email)){
                    mEmail.setError("Email is Required.");
                    return;
                }
                if(TextUtils.isEmpty(password)){
                    mPassword.setError("Password is Required.");
                    return;
                }
                if(password.length() < 6){
                    mPassword.setError("Password Must be >= 6 Characters");
                    return;
                }
                progressBar.setVisibility(View.VISIBLE);

                // register the user in firebase

fAuth.createUserWithEmailAndPassword(email,password).addOnCompleteListener(new
OnCompleteListener<AuthResult>() {
                    @Override
                    public void onComplete(@NonNull Task<AuthResult> task) {
                        if(task.isSuccessful()){
// send verification link
                            FirebaseUser fuser = fAuth.getCurrentUser();
                            fuser.sendEmailVerification().addOnSuccessListener(new
OnSuccessListener<Void>() {
                                @Override
                                public void onSuccess(Void aVoid) {
                                    Toast.makeText(Register.this, "Verification Email
Has been Sent.", Toast.LENGTH_SHORT).show();
                                }
                            }).addOnFailureListener(new OnFailureListener() {
                                @Override
                                public void onFailure(@NonNull Exception e) {
                                    Log.d(TAG, "onFailure: Email not sent " +
e.getMessage());
                                } });
Toast.makeText(Register.this, "User Created.", Toast.LENGTH_SHORT).show();
                            userID = fAuth.getCurrentUser().getUid();
                            DocumentReference documentReference =
fStore.collection("users").document(userID);
                            Map<String,Object> user = new HashMap<>();
                            user.put("fName",fullName);
                            user.put("email",email);
                            user.put("phone",phone);
                            documentReference.set(user).addOnSuccessListener(new
OnSuccessListener<Void>() {
                                @Override
                                public void onSuccess(Void aVoid) {
                                    Log.d(TAG, "onSuccess: user Profile is created for
"+ userID);
                                }
```

```
Toast.makeText(Register.this, "User Created.", Toast.LENGTH_SHORT).show();
                            userID = fAuth.getCurrentUser().getUid();
                            DocumentReference documentReference =
fStore.collection("users").document(userID);
                            Map<String,Object> user = new HashMap<>();
                            user.put("fName",fullName);
                            user.put("email",email);
                            user.put("phone",phone);
                            documentReference.set(user).addOnSuccessListener(new
OnSuccessListener<Void>() {
                                @Override
                                public void onSuccess(Void aVoid) {
                                    Log.d(TAG, "onSuccess: user Profile is created for
"+ userID);
                                }
                            }).addOnFailureListener(new OnFailureListener() {
                                @Override
                                public void onFailure(@NonNull Exception e) {
                                    Log.d(TAG, "onFailure: " + e.toString());
                                }
                            });
                            startActivity(new Intent(getApplicationContext(),
Home.class));

                        }else {
                            Toast.makeText(Register.this, "Error ! " +
task.getException().getMessage(), Toast.LENGTH_SHORT).show();
                            progressBar.setVisibility(View.GONE);
                        }
                    }
                });
            }
        });



        mLoginBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                startActivity(new Intent(getApplicationContext(),Login.class));
            }
        });  }}
```

Login Page Code:

```
import...
public class Login extends AppCompatActivity {
    EditText mEmail,mPassword;
    Button mLoginBtn;
    TextView mCreateBtn,forgotTextLink;
    ProgressBar progressBar;
    FirebaseAuth fAuth;


    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
```

```
 mEmail = findViewById(R.id.Email);
        mPassword = findViewById(R.id.password);
        progressBar = findViewById(R.id.progressBar);
        fAuth = FirebaseAuth.getInstance();
        mLoginBtn = findViewById(R.id.loginBtn);
        mCreateBtn = findViewById(R.id.createText);
        forgotTextLink = findViewById(R.id.forgotPassword);


        mLoginBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                String email = mEmail.getText().toString().trim();
                String password = mPassword.getText().toString().trim();

                if(TextUtils.isEmpty(email)){
                    mEmail.setError("Email is Required.");
                    return;
                }

                if(TextUtils.isEmpty(password)){
                    mPassword.setError("Password is Required.");
                    return;
                }

                if(password.length() < 6){
                    mPassword.setError("Password Must be >= 6 Characters");
                    return;
                }

                progressBar.setVisibility(View.VISIBLE);

                // authenticate the user


fAuth.signInWithEmailAndPassword(email,password).addOnCompleteListener(new
OnCompleteListener<AuthResult>() {
                    @Override
                    public void onComplete(@NonNull Task<AuthResult> task) {
                        if(task.isSuccessful()){
                            Toast.makeText(Login.this, "Logged in Successfully",
Toast.LENGTH_SHORT).show();
                            startActivity(new
Intent(getApplicationContext(),MainActivity.class));
                        }else {
                            Toast.makeText(Login.this, "Error ! " +
task.getException().getMessage(), Toast.LENGTH_SHORT).show();
                            progressBar.setVisibility(View.GONE);
                        }

                    }});}});

mCreateBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                startActivity(new Intent(getApplicationContext(),FirstPage.class));
            }
        });
```

```
forgotTextLink.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                final EditText resetMail = new EditText(v.getContext());
                final AlertDialog.Builder passwordResetDialog = new
AlertDialog.Builder(v.getContext());
                passwordResetDialog.setTitle("Reset Password ?");
                passwordResetDialog.setMessage("Enter Your Email To Received Reset
Link.");
                passwordResetDialog.setView(resetMail);

                passwordResetDialog.setPositiveButton("Yes", new
DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        // extract the email and send reset link
                        String mail = resetMail.getText().toString();
                        fAuth.sendPasswordResetEmail(mail).addOnSuccessListener(new
OnSuccessListener<Void>() {
                            @Override
                            public void onSuccess(Void aVoid) {
                                Toast.makeText(Login.this, "Reset Link Sent To Your
Email.", Toast.LENGTH_SHORT).show();
                            }
                        }).addOnFailureListener(new OnFailureListener() {
                            @Override
                            public void onFailure(@NonNull Exception e) {
                                Toast.makeText(Login.this, "Error ! Reset Link is Not
Sent" + e.getMessage(), Toast.LENGTH_SHORT).show();
                            }
                        });

                    }
                });

                passwordResetDialog.setNegativeButton("No", new
DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        // close the dialog
                    }
                });

                passwordResetDialog.create().show();

            }
        });


    }
}
```

Home Page Code:

```
import...
public class Home extends MainActivity {
    public CardView chest , bicep , abs , leg , back , shoulder;
    public DrawerLayout drawerLayout;
    public ActionBarDrawerToggle actionBarDrawerToggle;
    public NavigationView navigationView;
    public MenuItem menu;

RecyclerView recyclerview;
Adapter adapter;
ArrayList<String> items;

//
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_home);
        drawerLayout = findViewById(R.id.my_Drawer_Layout);
        navigationView=findViewById(R.id.nevigationview);
       chest = (CardView) findViewById(R.id.chest);
       bicep = (CardView) findViewById(R.id.BICEP);
       abs = (CardView) findViewById(R.id.abs);
       leg = (CardView) findViewById(R.id.leg);
       back = (CardView) findViewById(R.id.back);
       shoulder = (CardView) findViewById(R.id.shoulder);
//        menu=findViewById(R.id.nav_FAQ);
//        menu=findViewById(R.id.nav_about);
        getSupportActionBar().hide();
        chest.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (Home.this , chest.class);
                startActivity(intent);
            }
        });

bicep.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (Home.this , bicep.class);
                startActivity(intent);
            }
        });
        abs.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (Home.this , abs.class);
                startActivity(intent);
            }
        });
        leg.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (Home.this , leg.class);
                startActivity(intent);
            }
        });
```

```
back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (Home.this , back.class);
                startActivity(intent);
            }
        });
        shoulder.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (Home.this , shoulder.class);
                startActivity(intent);
            }
        });
}}
```

Main Activity Code:

```
import...

public class MainActivity extends AppCompatActivity  {

    public DrawerLayout drawerLayout;
    public ActionBarDrawerToggle actionBarDrawerToggle;
    public NavigationView navigationView;
    public MenuItem menu;
    ImageView imageView ,imageView2 , imageView3 ;


    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if (actionBarDrawerToggle.onOptionsItemSelected(item)) {

        }
        return true;
    }

    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(layout.activity_main);
        drawerLayout = findViewById(R.id.my_Drawer_Layout);
        navigationView=findViewById(R.id.nevigationview);

        menu=findViewById(R.id.nav_FAQ);
        menu=findViewById(R.id.nav_Program_manager);
        menu=findViewById(R.id.nav_about);
        menu=findViewById(R.id.nav_Home);
        menu=findViewById(R.id.nav_Nutrition);
        menu=findViewById(R.id.nav_progress);
        menu=findViewById(R.id.nav_logout);


        actionBarDrawerToggle = new ActionBarDrawerToggle(this, drawerLayout,
string.menu_open, string.Menu_close);

        drawerLayout.addDrawerListener(actionBarDrawerToggle);
        actionBarDrawerToggle.syncState();
```

```
getSupportActionBar().setDisplayHomeAsUpEnabled(true);

navigationView.setNavigationItemSelectedListener(new
NavigationView.OnNavigationItemSelectedListener() {
    @Override
    public boolean onNavigationItemSelected(@NonNull MenuItem item) {
        switch(item.getItemId()){
            case  R.id.nav_FAQ:
                Intent intent = new Intent (MainActivity.this , faq.class);
                startActivity(intent);
                break;
            case  R.id.nav_Program_manager:
                Intent intent1 = new Intent (MainActivity.this , Home.class);
                startActivity(intent1);
                break;
            case  R.id.nav_about:
                Intent intent2 = new Intent (MainActivity.this , About.class);
                startActivity(intent2);
                break;
            case  R.id.nav_Home:
                Intent intent3 = new Intent (MainActivity.this ,
FirstPage.class);
                startActivity(intent3);
                break;
            case  R.id.nav_Nutrition:
                Intent intent4 = new Intent (MainActivity.this ,
Nutration.class);
                startActivity(intent4);
                break;
            case  R.id.nav_progress:
                Intent intent5 = new Intent (MainActivity.this , Progress.class);
                startActivity(intent5);
                break;
            case  R.id.nav_logout:
                FirebaseAuth.getInstance().signOut();
                finish();
                break;
        }
        return true;

    }
});  }}
```

First Page Code:

```
import...
public class FirstPage extends AppCompatActivity {
       ImageView  imageView  ,imageView2  ,  imageView3  ,  imageView4  ,  imageView5  ,
imageView6 ;
    TextView textView , textView1,textView2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_first_page);
        imageView2=findViewById(R.id.Exercise);
        imageView=findViewById(R.id.pedometer);
        imageView3=findViewById(R.id.progress);
        imageView4=findViewById(R.id.aboutus);
        imageView5=findViewById(R.id.calculator);
        imageView6=findViewById(R.id.faq);
        textView=findViewById(R.id.textView28);
        textView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (FirstPage.this , MainActivity.class);
                startActivity(intent);
            }
        });

        imageView4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (FirstPage.this , About.class);
                startActivity(intent);
            }
        });
        imageView5.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (FirstPage.this , Nutration.class);
                startActivity(intent);
            }
        });
imageView6.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (FirstPage.this , faq.class);
                startActivity(intent);
            }
        });
        imageView2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (FirstPage.this , Home.class);
                startActivity(intent);
            }
        });
        imageView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (FirstPage.this , MainActivity3.class);
                startActivity(intent);
            }
        });
```

```
 imageView3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent (FirstPage.this , Progress.class);
                startActivity(intent);
            }
        });
    }
}
```

Android Manifest Code:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <uses-permission
android:name="android.permission.ACTIVITY_RECOGNITION" />

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.FITBUDDY"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity3"
            android:exported="false" />
        <activity
            android:name=".Fitness"
            android:exported="false" />
        <activity
            android:name=".Nutration"
            android:exported="false" />
        <activity
            android:name=".Progress"
            android:exported="false" />
        <activity
            android:name=".About"
            android:exported="false" />
        <activity
            android:name=".FirstPage"
            android:exported="false" />
        <activity
            android:name=".faq"
            android:exported="false" />
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".shoulder"
            android:exported="false">
```

```
<meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".back"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".leg"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".abs"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".bicep"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".chest"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".Home"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
         <activity
            android:name=".Login"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".MainActivity"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
```

```
<activity
            android:name=".Register"
            android:exported="false">
            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
        <activity
            android:name=".SplashScreen"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>

            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
    </application>

</manifest>
```

Android Manifest Code:

```
import android.content.Context;
import android.content.Intent;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;

import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;

import java.util.List;

public class Adapter extends RecyclerView.Adapter<Adapter.ViewHolder> {

    private LayoutInflater layoutInflater;
    private List<String> data;



    Adapter(Context context, List<String> data){
        this.layoutInflater = LayoutInflater.from(context);
        this.data = data;
    }

 @NonNull
    @Override
    public ViewHolder onCreateViewHolder(@NonNull ViewGroup viewGroup, int i)
{
        View view = layoutInflater.inflate(R.layout.cardview,viewGroup,false);
        return new ViewHolder(view);
    }
```

```
@Override
    public void onBindViewHolder(@NonNull ViewHolder viewHolder, int i) {
       // bind the textview with data received

        String title = data.get(i);
        viewHolder.textview16.setText(title);

        // similarly you can set new image for each card and descriptions
        }

    @Override
    public int getItemCount() {
        return data.size();
    }

    public class ViewHolder extends RecyclerView.ViewHolder{

        TextView textview16,textDescription,imageview;
         public ViewHolder(@NonNull View itemView) {
            super(itemView);
            itemView.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    Intent i = new Intent(v.getContext(), MainActivity.class);
                    i.putExtra("title",data.get(getAdapterPosition()));
                    v.getContext().startActivity(i);
                }
            });
            textview16 = itemView.findViewById(R.id.textView16);
        }
    }
}
```

Fitness Module Code:

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Spinner;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class Fitness extends AppCompatActivity {
    Button button;
    Spinner spinner;
 @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_fitness);
        button=findViewById(R.id.button);
        button.setOnClickListener(new View.OnClickListener() {
```

```
@Override
            public void onClick(View v) {
                Toast.makeText(Fitness.this, "Your Data IS Submitted
Successfully", Toast.LENGTH_LONG).show();
                Intent intent = new Intent (Fitness.this , FirstPage.class);
                startActivity(intent);
                finish();
            }
        });
        getSupportActionBar().hide();
    }
}
```

Frontend

Register Page:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://
schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/splash"
    tools:context=".Register">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="32dp"
        android:text="Create New Account"
        android:textColor="@color/black"
        android:textSize="15sp"
        app:layout_constraintBottom_toTopOf="@+id/fullName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent" />

    <EditText
        android:id="@+id/fullName"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginEnd="16dp"
        android:background="@color/white"
        android:ems="10"
        android:hint="Full Name"
        android:inputType="textPersonName"
        android:minHeight="48dp"
         android:padding="10dp"
        android:textColor="#020202"
```

```
 android:textColorHint="#03A9F4"
        android:textSize="14sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.341" />

    <EditText
        android:id="@+id/Email"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:background="@color/white"
        android:ems="10"
        android:hint="Email"
        android:inputType="textEmailAddress"
        android:minHeight="48dp"
        android:padding="10dp"
        android:textColor="#020202"
        android:textColorHint="#03A9F4"
        android:textSize="14sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/fullName" />
    <EditText
        android:id="@+id/password"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:background="@color/white"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPassword"
        android:minHeight="48dp"
        android:padding="10dp"
        android:textColor="@color/black"
        android:textColorHint="#03A9F4"
        android:textSize="14sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/Email" />
    <EditText
        android:id="@+id/phone"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:background="@color/white"
        android:ems="10"
        android:hint="Phone"
        android:inputType="textPhonetic"
```

```
android:minHeight="48dp"
        android:padding="10dp"
        android:textColor="@color/black"
        android:textColorHint="#03A9F4"
        android:textSize="14sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/password" />

    <Button
        android:id="@+id/registerBtn"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="32dp"
        android:layout_marginEnd="16dp"
        android:text="Register"
        android:textColor="@color/teal_700"
        android:textSize="13sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/phone" />

    <TextView
        android:id="@+id/createText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Already Registered ? Login Here"
        android:textColor="#FFEB3B"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/registerBtn" />
 <ProgressBar
        android:id="@+id/progressBar"
        style="?android:attr/progressBarStyle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:visibility="invisible"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/createText"
        app:layout_constraintVertical_bias="0.26" />

    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="96dp"
        android:layout_height="104dp"
        app:layout_constraintBottom_toTopOf="@+id/textView2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:srcCompat="@drawable/logo2" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Login Page:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://
schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/splash"
    tools:context=".Login">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/app_name"
        android:textColor="#FFEB3B"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.19" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:text="Create New Account"
        android:textColor="#F7F7F8"
        android:textSize="15sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />
<EditText
        android:id="@+id/Email"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginEnd="16dp"
        android:background="@android:color/black"
        android:ems="10"
        android:hint="Email"
        android:inputType="textEmailAddress"
        android:padding="10dp"
        android:textColor="#FFFFFF"
        android:textColorHint="#FFFFFF"
        android:textSize="14sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView2"
        app:layout_constraintVertical_bias="0.19" />
```

```
<EditText
        android:id="@+id/password"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:background="@android:color/black"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPassword"
        android:padding="10dp"
        android:textColor="#FFFFFF"
        android:textColorHint="#FFFFFF"
        android:textSize="14sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/Email" />

    <Button
        android:id="@+id/loginBtn"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="32dp"
        android:layout_marginEnd="16dp"
        android:text="Login"
        android:textSize="13sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/password" />

    <TextView
        android:id="@+id/createText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="New Here ?  Create Account"
        android:textColor="#FFEB3B"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/loginBtn" />
<ProgressBar
        android:id="@+id/progressBar"
        style="?android:attr/progressBarStyle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:visibility="invisible"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/createText"
        app:layout_constraintVertical_bias="0.39" />

<TextView
        android:id="@+id/forgotPassword"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```
android:text="Forgot Password ?"
        android:textColor="#FDD835"
        android:textStyle="bold"
        app:layout_constraintBottom_toTopOf="@+id/progressBar"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/createText"
        app:layout_constraintVertical_bias="0.19999999" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Home Page:

```
<androidx.constraintlayout.widget.ConstraintLayout
android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:android="http://schemas.android.com/apk/res/android">
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".Home">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
<androidx.cardview.widget.CardView
            android:id="@+id/BICEP"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="20dp"
            android:layout_marginTop="8dp"
            android:layout_marginEnd="9dp"
            app:cardCornerRadius="10dp"
            app:cardElevation="12dp"
            app:cardMaxElevation="12dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent">
            <androidx.constraintlayout.widget.ConstraintLayout
                android:id="@+id/constraintLayout"
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:orientation="horizontal"
                android:padding="5dp">
<ImageView
                    android:id="@+id/imageView4"
                    android:layout_width="170dp"
                    android:layout_height="184dp"
                    android:padding="10dp"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toStartOf="@+id/textView17"
                    app:layout_constraintStart_toStartOf="parent"
                    app:layout_constraintTop_toTopOf="parent"
                    app:srcCompat="@drawable/bicep" />
```

```
            <TextView
                android:id="@+id/textView17"
                android:layout_width="186dp"
                android:layout_height="68dp"
                android:layout_margin="20dp"
                android:layout_marginStart="33dp"
                android:layout_marginTop="61dp"
                android:layout_marginEnd="58dp"
                android:layout_marginBottom="102dp"
                android:padding="10dp"
                android:text="BICEP"
                android:textAlignment="center"
                android:textSize="34sp"
                android:textStyle="bold"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintStart_toEndOf="@+id/imageView4"
                app:layout_constraintTop_toTopOf="parent" />
        </androidx.constraintlayout.widget.ConstraintLayout>
    </androidx.cardview.widget.CardView>

    <androidx.cardview.widget.CardView
        android:id="@+id/chest"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:layout_marginEnd="9dp"
        app:cardCornerRadius="10dp"
        app:cardElevation="12dp"
        app:cardMaxElevation="12dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintEnd_toStartOf="@+id/constraintLayout"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toEndOf="@+id/constraintLayout"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/BICEP"
        app:layout_constraintVertical_bias="0.5">
    <androidx.constraintlayout.widget.ConstraintLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="horizontal"
            android:padding="5dp">

            <ImageView
                android:id="@+id/imageView5"
                android:layout_width="170dp"
                android:layout_height="184dp"
                android:padding="10dp"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toStartOf="@+id/textView18"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent"
                app:srcCompat="@drawable/bicep" />
    <TextView
                android:id="@+id/textView18"
                android:layout_width="186dp"
                android:layout_height="68dp"
```

```
android:layout_margin="20dp"
                    android:layout_marginStart="33dp"
                    android:layout_marginTop="61dp"
                    android:layout_marginEnd="58dp"
                    android:layout_marginBottom="102dp"
                    android:padding="10dp"
                    android:text="CHEST"
                    android:textAlignment="center"
                    android:textSize="34sp"
                    android:textStyle="bold"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toEndOf="parent"
                    app:layout_constraintStart_toEndOf="@+id/imageView5"
                    app:layout_constraintTop_toTopOf="parent" />
            </androidx.constraintlayout.widget.ConstraintLayout>

        </androidx.cardview.widget.CardView>
        <androidx.cardview.widget.CardView
            android:id="@+id/abs"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="20dp"
            android:layout_marginEnd="9dp"
            app:cardCornerRadius="10dp"
            app:cardElevation="12dp"
            app:cardMaxElevation="12dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintEnd_toStartOf="@+id/constraintLayout"
            app:layout_constraintHorizontal_bias="0.5"
            app:layout_constraintStart_toEndOf="@+id/constraintLayout"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/BICEP"
            app:layout_constraintVertical_bias="0.5">

            <androidx.constraintlayout.widget.ConstraintLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:orientation="horizontal"
                android:padding="5dp">

                <ImageView
                    android:id="@+id/imageView6"
                    android:layout_width="170dp"
                    android:layout_height="184dp"
                    android:padding="10dp"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toStartOf="@+id/textView19"
                    app:layout_constraintStart_toStartOf="parent"
                    app:layout_constraintTop_toTopOf="parent"
                    app:srcCompat="@drawable/bicep" />
        <TextView
                    android:id="@+id/textView19"
                    android:layout_width="186dp"
                    android:layout_height="68dp"
                    android:layout_margin="20dp"
                    android:layout_marginStart="33dp"
                    android:layout_marginTop="61dp"
                    android:layout_marginEnd="58dp"
                    android:layout_marginBottom="102dp"
```

```
android:padding="10dp"
                    android:text="ABS"
                    android:textAlignment="center"
                    android:textSize="34sp"
                    android:textStyle="bold"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toEndOf="parent"
                    app:layout_constraintStart_toEndOf="@+id/imageView6"
                    app:layout_constraintTop_toTopOf="parent" />
            </androidx.constraintlayout.widget.ConstraintLayout>

        </androidx.cardview.widget.CardView>
        <androidx.cardview.widget.CardView
            android:id="@+id/leg"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="20dp"
            android:layout_marginEnd="9dp"
            app:cardCornerRadius="10dp"
            app:cardElevation="12dp"
            app:cardMaxElevation="12dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintEnd_toStartOf="@+id/constraintLayout"
            app:layout_constraintHorizontal_bias="0.5"
            app:layout_constraintStart_toEndOf="@+id/constraintLayout"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/BICEP"
            app:layout_constraintVertical_bias="0.5">

            <androidx.constraintlayout.widget.ConstraintLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:orientation="horizontal"
                android:padding="5dp">

                <ImageView
                    android:id="@+id/imageView7"
                    android:layout_width="170dp"
                    android:layout_height="184dp"
                    android:padding="10dp"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toStartOf="@+id/textView20"
                    app:layout_constraintStart_toStartOf="parent"
                    app:layout_constraintTop_toTopOf="parent"
                    app:srcCompat="@drawable/bicep" />
<TextView
                    android:id="@+id/textView20"
                    android:layout_width="186dp"
                    android:layout_height="68dp"
                    android:layout_margin="20dp"
                    android:layout_marginStart="33dp"
                    android:layout_marginTop="61dp"
                    android:layout_marginEnd="58dp"
                    android:layout_marginBottom="102dp"
                    android:padding="10dp"
                    android:text="LEG"
                    android:textAlignment="center"
                    android:textSize="34sp"
```

```
android:textStyle="bold"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toEndOf="parent"
                    app:layout_constraintStart_toEndOf="@+id/imageView7"
                    app:layout_constraintTop_toTopOf="parent" />
            </androidx.constraintlayout.widget.ConstraintLayout>

        </androidx.cardview.widget.CardView>
        <androidx.cardview.widget.CardView
            android:id="@+id/back"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="20dp"
            android:layout_marginEnd="9dp"
            app:cardCornerRadius="10dp"
            app:cardElevation="12dp"
            app:cardMaxElevation="12dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintEnd_toStartOf="@+id/constraintLayout"
            app:layout_constraintHorizontal_bias="0.5"
            app:layout_constraintStart_toEndOf="@+id/constraintLayout"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/BICEP"
            app:layout_constraintVertical_bias="0.5">

            <androidx.constraintlayout.widget.ConstraintLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:orientation="horizontal"
                android:padding="5dp">

                <ImageView
                    android:id="@+id/imageView8"
                    android:layout_width="170dp"
                    android:layout_height="184dp"
                    android:padding="10dp"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toStartOf="@+id/textView21"
                    app:layout_constraintStart_toStartOf="parent"
                    app:layout_constraintTop_toTopOf="parent"
                    app:srcCompat="@drawable/bicep" />

                <TextView
                    android:id="@+id/textView21"
                    android:layout_width="186dp"
                    android:layout_height="68dp"
                    android:layout_margin="20dp"
                    android:layout_marginStart="33dp"
                    android:layout_marginTop="61dp"
                    android:layout_marginEnd="58dp"
                    android:layout_marginBottom="102dp"
                    android:padding="10dp"
                    android:text="BACK"
                    android:textAlignment="center"
                    android:textSize="34sp"
                    android:textStyle="bold"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toEndOf="parent"
                    app:layout_constraintStart_toEndOf="@+id/imageView8"
                    app:layout_constraintTop_toTopOf="parent" />
            </androidx.constraintlayout.widget.ConstraintLayout>
```

```
</androidx.cardview.widget.CardView>
        <androidx.cardview.widget.CardView
            android:id="@+id/shoulder"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="20dp"
            android:layout_marginEnd="9dp"
            app:cardCornerRadius="10dp"
            app:cardElevation="12dp"
            app:cardMaxElevation="12dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintEnd_toStartOf="@+id/constraintLayout"
            app:layout_constraintHorizontal_bias="0.5"
            app:layout_constraintStart_toEndOf="@+id/constraintLayout"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/BICEP"
            app:layout_constraintVertical_bias="0.5">

            <androidx.constraintlayout.widget.ConstraintLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:orientation="horizontal"
                android:padding="5dp">

                <ImageView
                    android:id="@+id/imageView9"
                    android:layout_width="170dp"
                    android:layout_height="184dp"
                    android:padding="10dp"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toStartOf="@+id/textView22"
                    app:layout_constraintStart_toStartOf="parent"
                    app:layout_constraintTop_toTopOf="parent"
                    app:srcCompat="@drawable/bicep" />

                <TextView
                    android:id="@+id/textView22"
                    android:layout_width="186dp"
                    android:layout_height="68dp"
                    android:layout_margin="20dp"
                    android:layout_marginStart="33dp"
                    android:layout_marginTop="61dp"
                    android:layout_marginEnd="58dp"
                    android:layout_marginBottom="102dp"
                    android:padding="10dp"
                    android:text="SHOULDER"
                    android:textAlignment="center"
                    android:textSize="30dp"
                    android:textStyle="bold"
                    app:layout_constraintBottom_toBottomOf="parent"
                    app:layout_constraintEnd_toEndOf="parent"
                    app:layout_constraintStart_toEndOf="@+id/imageView9"
                    app:layout_constraintTop_toTopOf="parent" />
            </androidx.constraintlayout.widget.ConstraintLayout>

        </androidx.cardview.widget.CardView>
    </LinearLayout>

</ScrollView>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Header Page:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="180dp"
    android:background="#ECDE6A"
    android:gravity="center"
    android:orientation="vertical">


    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="130dp"
        android:layout_height="82dp"
        android:layout_weight="1"
        app:srcCompat="@drawable/logo2" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:gravity="center"
        android:text="@string/app_name"
        android:textColor="#3C3B05"
        android:textSize="24sp"
        android:textStyle="bold" />
</LinearLayout>
```

Chapter 6 – Testing

Testing is vital for the success of any software. No system design is ever perfect. Testing is carried out in two phases. The first phase is during software engineering, specifically during module creation. The second phase occurs after the completion of the software, and it is called system testing, which verifies that the whole set of programs hang together.

White Box Testing:

In this technique, a close examination is conducted on the logical parts of the software by testing them with cases that exercise specific sets of conditions or loops. All logical parts of the software are checked once. This technique can identify errors such as typographical errors, instances where logical expressions should be executed once but are executed more than once, and errors resulting from the use of incorrect controls and loops. When box testing is performed, all independent parts within a module are tested, logical decisions on their true and false sides are exercised, all loops and bounds within their operational limits are exercised, and internal data structures are tested to ensure their validity.

Black Box Testing:

This method allows software engineers to devise sets of input techniques that thoroughly test all functional requirements of a program. Black Box Testing examines the input, output, and external data. It verifies whether the input data is correct and whether the desired output is obtained.

Unit Testing:

Each module is considered independently in white box testing. It focuses on each unit of the software as implemented in the source code.

Integration Testing:

Integration testing aims at constructing the program structure while at the same constructing tests to uncover errors associated with interfacing the modules. Modules are integrated by using the top down approach.

Validation Testing:

Validation testing is conducted to ensure that all functional and performance requirements are met.

Chapter 7 – Project Monitoring and Estimation

PERT Chart:

A PERT Chart is organized for events, activities, or tasks and serves as a scheduling device that visually depicts the order of tasks to be performed. It allows for the calculation of the critical path, which involves determining the time and cost associated with each path. The critical path is the path that requires the greatest amount of elapsed time.

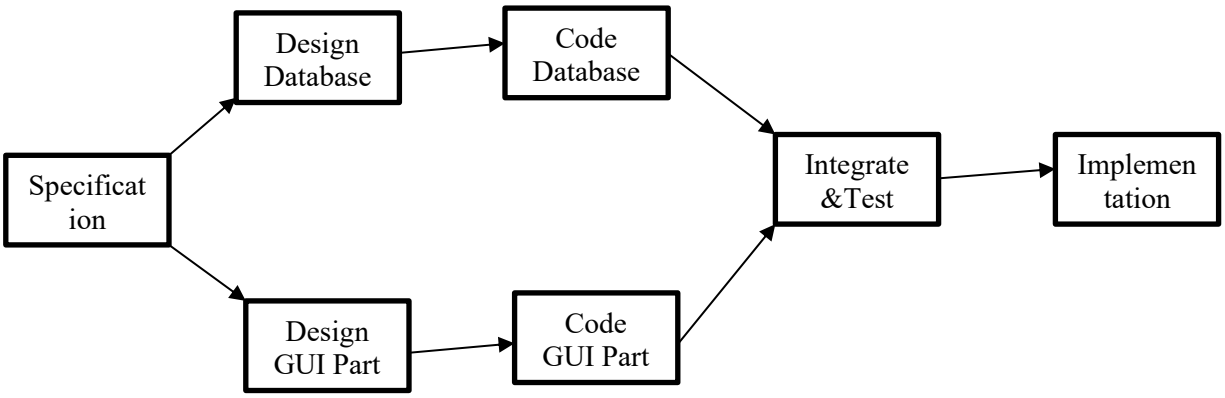

Fig. (7.1) PERT Chart Representation

GANNT Chart:

A Gantt chart, also known as a bar chart, is a project control technique primarily used for scheduling purposes. It is utilized for scheduling, budgeting, and resource planning. In a Gantt chart, each activity is represented by a bar, which is drawn against a timeline. The length of time allocated for each activity is depicted in the chart.

SDLC Activities	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Planning								
Analysis								
Design								
Coding								
Testing								
Implementation								

Fig. (7.2) GANNT Chart Representation

Cost Estimation of the Project:

Estimating the cost of a project involves various factors such as the scope, complexity, team size, development time, hourly rates, and other resources required. While I cannot provide you with an exact cost estimation, I can give you a general breakdown of the factors you need to consider when estimating the cost of developing a FitBuddy Android App using Java, Kotlin and .

Project Scope:

Determine the specific features and functionalities required for the system, such as authentic and genuine source of data set from with app will suggest and generate customized workouts, API to connect app with phones sensor, Cloud based database integration, etc. . complexity and scale of these features will impact the development effort and cost.

Development Time:

Break down the development process into phases or tasks and estimate the time required for each. Consider activities like database design, user interface development, backend implementation, testing, and deployment. The more detailed and comprehensive your project plan, the more accurate your time estimation will be.

Team Size:

Assess the number of developers and their skill levels needed for the project. A larger team may reduce the development time, but it will also increase the cost. Consider roles like project manager, frontend developers, backend developers, database designers, and testers.

Hourly Rates:

Determine the hourly rates for each team member involved in the project. Rates can vary based on experience and location. Multiply the hourly rate by the estimated development time for each team member to calculate their cost contribution.

Third-Party Services:

If you plan to use any external services or APIs, consider their costs. For example, if you want to send notifications to the users or integrate with a payment gateway, you may incur additional expenses.

Infrastructure and Tools:

Take into account the cost of any infrastructure requirements such as hosting, domain registration, and server maintenance. Also, consider the cost of development tools, licenses, and libraries that you plan to use.

Contingency:

It's a good practice to include a contingency budget to accommodate any unforeseen delays or changes during the development process. A common practice is to allocate around 10-20% of the estimated cost as a contingency.

Once you have estimates for these factors, you can sum them up to get an overall cost estimation for your FitBuddy Android App project. Keep in mind that this is a high-level approach, and the actual cost may vary depending on your specific project requirements and circumstances.

Chapter 8 – Conclusion and Future Work

Conclusion:

In conclusion, FitBuddy app is a great way to stay motivated and on track with your fitness goals. It offer a variety of features that can help you track your progress, find new workouts. If you're looking for a way to improve your health and fitness, a fitness app is a great option.

Here are some of the benefits of using a fitness app:

1. Motivation: Fitness apps can help you stay motivated by tracking your progress and providing you with encouragement.
2. Variety: Fitness apps offer a variety of workouts to choose from, so you can find something that fits your interests and fitness level.
3. Convenience: Fitness apps are convenient because you can use them on your phone or tablet, wherever you are.
4. If you're looking for a way to improve your health and fitness, a fitness app is a great option, as it pocket friendly and accessible from any location.

Future Scope:

1. Include feature like “Local GYM Locator”.
2. Add shopping Section for Supplements.
3. Create a community to let users support each other.
4. Informative fitness related content that educates users in fitness community.
5. Introduce a blog section where users can write and share their experience.
6. Monetize app for users to earn as a side hustle income

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