Car Pooling Android App

Report

FROM

BTech CSE (P132L)

SUBMITTED TO

LOVELY PROFESSIONAL UNIVERSITY

PHAGWARA, PUNJAB

SUBMITTED BY

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Registration No : 12115851

Roll Number : 062 – KO203

Subject Code : CSE227

Subject Name : ADVANCED ANDROID APP DEVELOPMENT

GitHub Project Link: [Included All]

- Project Source Code
- Project Images
- Project Apk app file
- Attached Working Video
- Project Overview of features used

Project Link : https://github.com/gopi76/Car-Pooling-App

Topics Covered :

CSE224 (FUNDAMENTALS OF ANDROID):

- ✓ Request App Permissions (for locations)
- ✓ Log (used to see errors specifically in app if user faced)
- ✓ Toast
- ✓ Layouts : Linear, Relative and Constraint
- ✓ Alert Dialog (for showing the user information for confirmation)
- ✓ Menu

CSE225 (DEVELOPING ANDROID APPS):

- ✓ Splash Screen (used at starting activity)
- ✓ Progress Bar (used when user clicked on login button)
- ✓ Intents(used both explicit and implicit intents)
- ✓ Loading
- ✓ Notification(user when clicked rating it will show rating given by them)

- ✓ Navigation Drawer
- ✓ View Pager (user can view all the features of this app at starting)
- ✓ Date Picker Dialog
- ✓ Time Picker Dialog
- ✓ Bottom Navigation bar
- ✓ Rating Bar (User can give rating based upto max 5 stars)

CSE226: ANDROID APP DEPLOYMENT

- ✓ Recycler View
- ✓ Card View
- ✓ Floating Action Buttons (FAB)
- ✓ Users Current Location
- ✓ Maps

CSE227 : ADVANCED ANDROID APP DEVELOPMENT

- ✓ Real Time Firebase
- ✓ Phone Verification
- ✓ Connected Wifi Information
- ✓ Animation (zoom – in, zoom - out, rotate, fade in animations)
- ✓ Wifi Check
- ✓ Proximity sensor
- ✓ Web View

Others

- ✓ Used Email Confirmation (for both car owner and rider) – through SMTP
- ✓ Category Selection (based on user needs)

- ✓ Text To Speech
- ✓ Speech To Text

Project Overview

This project aims to create a Car Pooling App using Android Studio and Kotlin. It includes the following features:

- ❖ **Sign In :** By entering their credentials, users can log in. By limiting access to the app's features to registered users alone, this feature preserves privacy and security.

- ❖ **Sign Up :** To access the app's features, users must first register for a new account and then log in. New users can use the app's tailored offerings after registering.

- ❖ **View and Update Profile :** Users are able to see and modify the information in their profile, including their name, email address, etc. This guarantees the accuracy and currency of user data.

- ❖ **Rating System :** Users have the option to review and comment on their experiences, and the rating is kept in the database. Users can also see the average rating given by all users and receive notifications regarding ratings.

- ❖ **Feedback Form :** Through this form, users can send in questions or feedback. A little check dialog box appears as confirmation after submission, making the user experience pleasant.

- ❖ **Category Selection :** Depending on their requirements, users can choose to be either a rider or an owner of a car. This classification, which takes into account personal preferences, simplifies the user experience.

- ❖ **Offer Rides :** Users are able to peruse and observe every ride that is available, together with information about the start and end times.

- ❖ **Owner Profile :** Users have access to comprehensive profiles of automobile owners that include facts about seats that are accessible, contact information (such as an email address or phone number), and other pertinent data.

- **Proximity Sensor (Alert System) :** To lessen eye strain and possible discomfort, the app uses a proximity sensor to warn users when they are getting too close to the screen. This feature makes using the app safer and more pleasant, which improves user experience.

- **Create a Ride :** Through the app, users can generate rides. For further protection, they must go through phone verification and obtain a confirmation email.

- **Book a Ride :** Through the app, users can suggest rides. Users receive emails confirming their reservations, and for extra security, they must verify over the phone.

- **Near by Riders (Map View) :** On the map view, users can see nearby riders, who are shown as person icons. This feature improves user visibility and makes ride selection easier by using Open Street Map view to display nearby riders' real-time positions.

- **Near by Cars (Map View) :** Using the car symbols on the map view, users can see the locations of nearby cars.

- **Search :** Users can go through all of the available riders and rides that other users have provided by using the search functionality. To identify particular rides based on user preferences, the search feature contains filtering options.

- **Share the App :** Through a Web View, users can obtain the app code and distribute it to other users. With social media sharing and other means, users can use this feature to spread the word about the app and increase its user base.

- **Logout :** The ability to log out of an account is available to users. When you click the logout button, a confirmation dialog box shows up.

- **Frequently Asked Questions, or FAQs :** it provide users with a thorough rundown of frequently asked questions about the app, its features.

- **Wifi Info :** Users are able to get comprehensive details about the Wifi network they are currently connected to.

- **Details About the App Creator :** Users can obtain information about the App Creator, such as background information, methods of contact (phone, email, or SMS), and ways to report issues with the app's usability or operation.

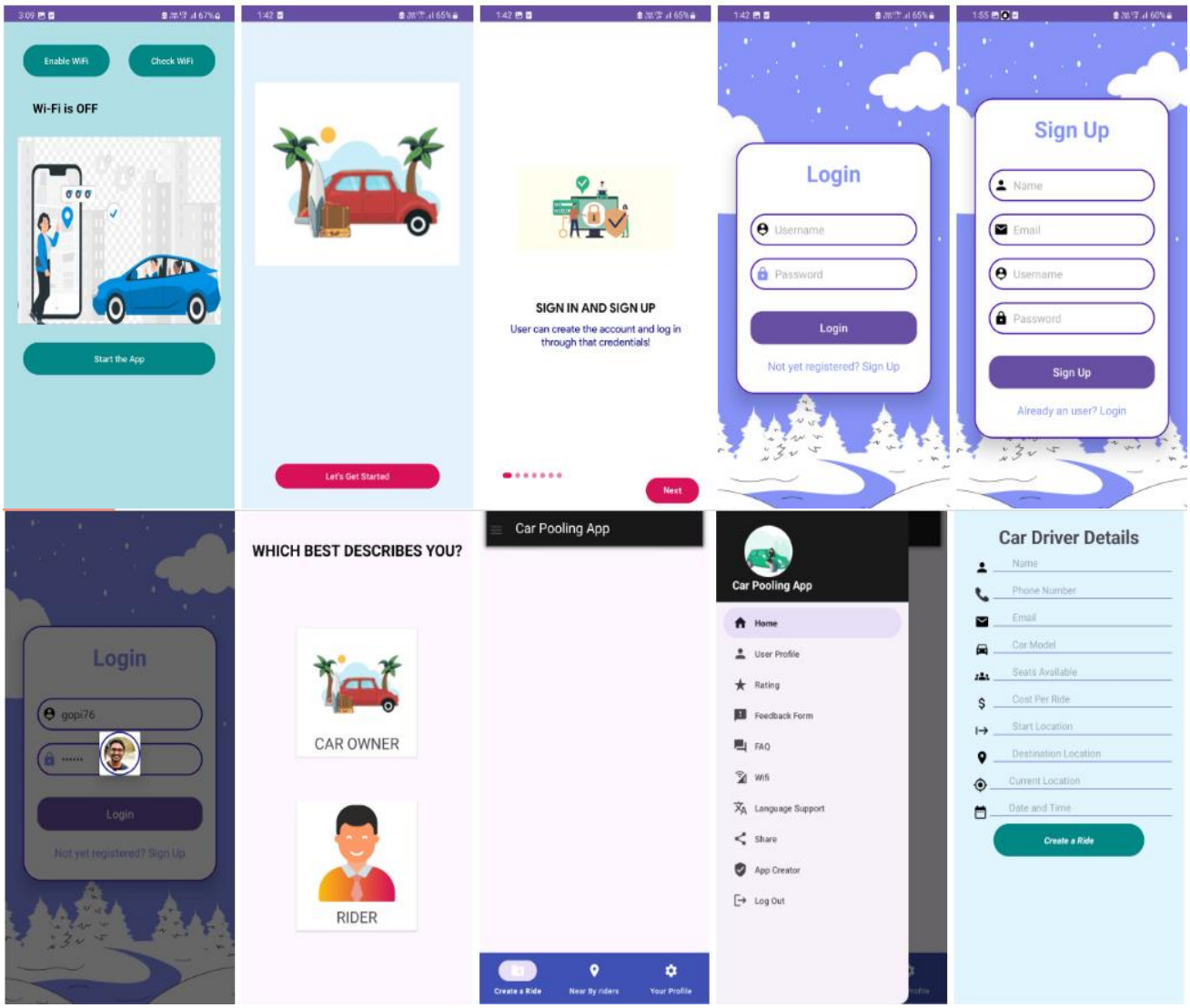
- **Turn on Wifi :** With this function, users can easily turn on Wifi right from within the app. Because internet access is necessary for the proper operation of

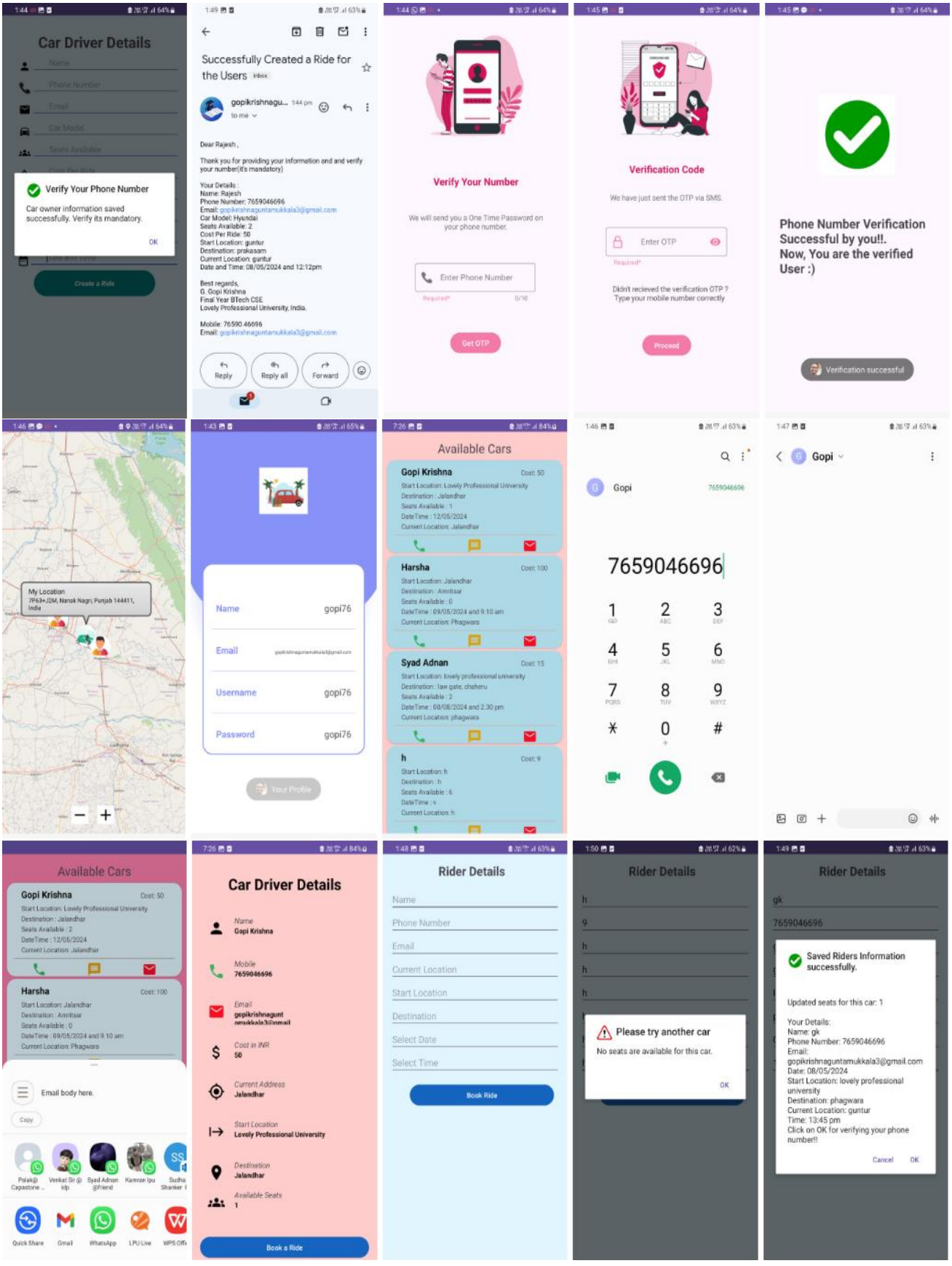
apps, users can assure seamless and uninterrupted app usage by tapping the "Enable Wifi" option on their smartphone.

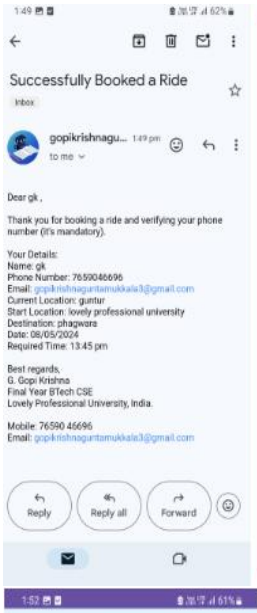
- **Text-to-Speech (TTS) :** This feature improves accessibility and user interaction by allowing users to convert text input into spoken language output in one of five languages.

- **Speech-to-Text (STT) :** Users can speak to transmit data; the speech is converted to text and shown in the application's text view (only English).

Project Images:




Car Driver Details
Verify Your Phone Number
Car owner information saved successfully. Verify its mandatory.
OK
Create a Ride
Successfully Created a Ride for the Users
Dear Rajesh ,
Thank you for providing your information and and verify your number(it's mandatory)
Your Details :
Name: Rajesh
Phone Number: 7659046696
Email: gopikrishnaguntamukkala3@gmail.com
Car Model: Hyundai
Seats Available: 2
Cost Per Ride: 50
Start Location: guntur
Destination: prakasam
Current Location: guntur
Date and Time: 08/05/2024 and 12:12pm
Best regards,
G. Gopi Krishna
Final Year BTech CSE
Lovely Professional University, India.
Mobile: 76590 46696
Email: gopikrishnaguntamukkala3@gmail.com
Reply
Reply all
Forward
Verify Your Number
We will send you a One Time Password on your phone number.
Enter Phone Number
Get OTP
Verification Code
We have just sent the OTP via SMS.
Enter OTP
Didn't recieved the verification OTP ? Type your mobile number correctly
Proceed
Phone Number Verification Successful by you!!. Now, You are the verified User :)
Verification successful
My Location
Name
gopi76
Email
Username
gopi76
Password
gopi76
Your Profile
Available Cars
Gopi Krishna
Cost: 50
Start Location: Lovely Professional University
Destination : Jalandhar
Seats Available : 1
DateTime : 12/05/2024
Current Location: Jalandhar
Harsha
Cost: 100
Start Location: Jalandhar
Destination : Amritsar
Seats Available : 0
DateTime : 09/05/2024 and 9.10 am
Current Location: Phagwara
Syad Adnan
Cost: 15
Start Location: lovely professional university
Destination : law gate, chaheru
Seats Available : 2
DateTime : 08/08/2024 and 2.30 pm
Current Location: phagwara
h
Cost: 9
Start Location: h
Destination : h
Seats Available : 6
DateTime : v
Current Location: h
Gopi
7659046696
Rider Details
Name
Phone Number
Email
Current Location
Start Location
Destination
Select Date
Select Time
Book Ride
Please try another car
No seats are available for this car.
OK
Saved Riders Information successfully.
Updated seats for this car: 1
Your Details:
Name: gk
Phone Number: 7659046696
Email: gopikrishnaguntamukkala3@gmail.com
Date: 08/05/2024
Start Location: lovely professional university
Destination: phagwara
Current Location: guntur
Time: 13:45 pm
Click on OK for verifying your phone number!!
Cancel
OK
Email body here.
Copy
Name
Gopi Krishna
Mobile
7659046696
Email
Cost in INR
50
Current Address
Jalandhar
Start Location
Lovely Professional University
Destination
Jalandhar
Available Seats
1
Book a Ride


Successfully Booked a Ride
Inbox
gopikrishnagu... 1:49 pm
to me
Dear gk ,
Thank you for booking a ride and verifying your phone number (if's mandatory).
Your Details:
Name: gk
Phone Number: 7659046696
Email: gopikrishnaguntamukkala3@gmail.com
Current Location: guntur
Start Location: lovely professional university
Destination: phagwara
Date: 08/05/2024
Required Time: 13:45 pm
Best regards,
G. Gopi Krishna
Final Year BTech CSE
Lovely Professional University, India.
Mobile: 76590 46696
Email: gopikrishnaguntamukkala3@gmail.com
Reply
Reply all
Forward

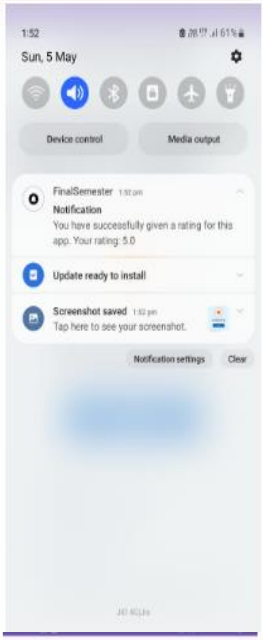

Search
Start Location
End Location
Search
Gopi Krishna
Cost: 50
Start Location: Lovely Professional University
Destination : Jalandhar
Seats Available : 1
DateTime : 12/05/2024
Current Location: Jalandhar
Harsha
Cost: 100
Start Location: Jalandhar
Destination : Amritsar
Seats Available : 0
DateTime : 09/05/2024 and 9.10 am
Current Location: Phagwara
Syad Adnan
Cost: 15
Start Location: lovely professional university
Destination : law gate, chaheru
Seats Available : 2
DateTime : 08/08/2024 and 2.30 pm
Current Location: phagwara

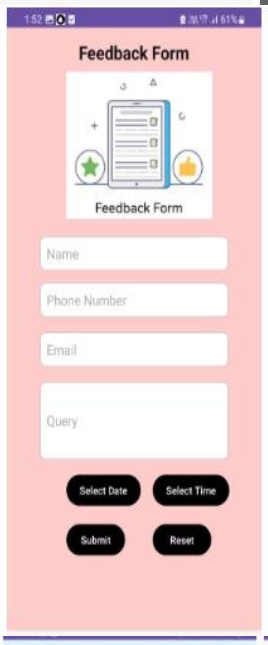

Gopi Krishna
Current Location: Jalandhar Start Location: Lovely Professional University Destination: Jalandhar

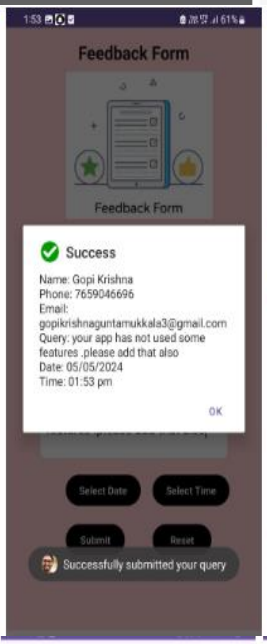

Car Pooling App
Alert!!
You are very near to your phone. It will effect your eyes. You may go blind.
Cancel
OK
Near by Cars


Edit Profile
gopi76
gopikrishnaguntamukkala3
gopi76
Save


Rate My App!!!
User can give ratings and it can save in realtime database. [Firebase]
Submit
5 ★★★★★ - 1 users
4 ★★★★ - 1 users
3 ★★★ - 0 users
2 ★★ - 0 users
1 ★ - 0 users
Average Rating Of This App : 4.5 ★

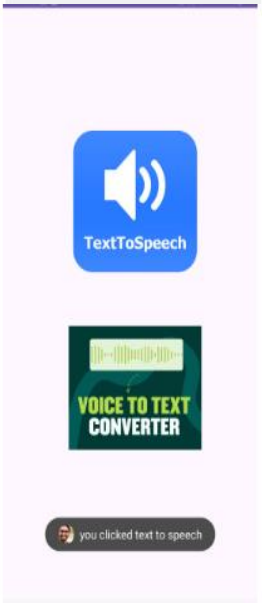

Sun, 5 May
Device control
Media output
FinalSemester
Notification
You have successfully given a rating for this app. Your rating: 5.0
Update ready to install
Screenshot saved
Tap here to see your screenshot.
Notification settings
Clear

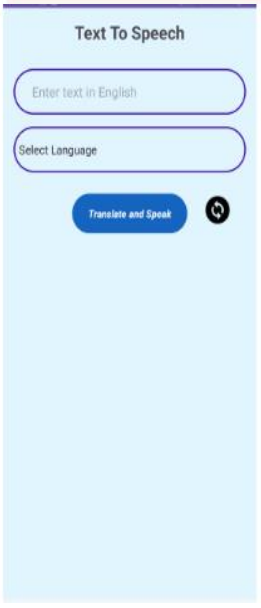

Feedback Form
Feedback Form
Name
Phone Number
Email
Query
Select Date
Select Time
Submit
Reset

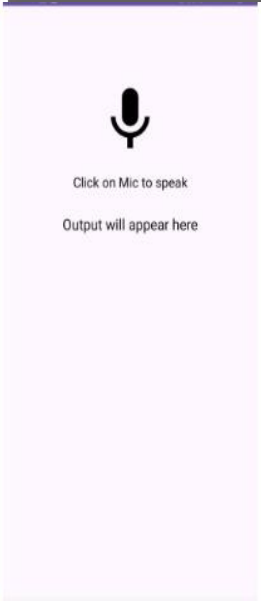

Feedback Form
Feedback Form
Success
Name: Gopi Krishna
Phone: 7659046696
Email: gopikrishnaguntamukkala3@gmail.com
Query: your app has not used some features ,please add that also
Date: 05/05/2024
Time: 01:53 pm
OK
Select Date
Select Time
Submit
Reset
Successfully submitted your query

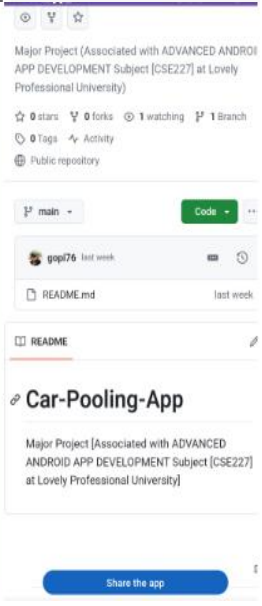

FAQ Details
Q: What is Car Pooling App?
A: User can choose the rider or car owner based on their needs in this app after login .
Q: Why to use this carpooling app?
A: This app provides options for both car owners and riders. Car owners can create rides, and riders can book available rides.
Q: How to book a ride in this app?
A: Users can book a ride by visiting the car owner's profile and selecting an available ride. After selecting a ride, a confirmation will be sent to the user's email.
Q: What are the featues in this app?
A:
- Wifi Check
- Sign In
- Sign Up
- Feedback Form
- Rating Bar
- Offer rides
- Book Rides
- Nearby Cars and Riders
- View and Update profile
- Wifi Information
- Proximity Sensor Alert
- Share the app code
- Log out
Q: What safety features are included in this app?
Q: Where are user ratings stored?

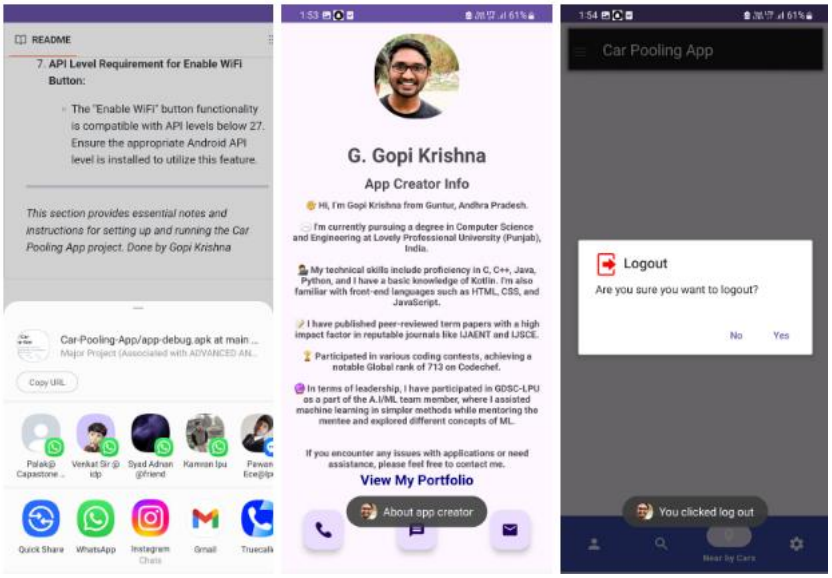

Wifi Info
IP Address : 192.168.13.18
Link Speed : 206
Network ID : 101
SSID :
"DeoHostel_Room(201-206)"
Hidden SSID: false
BSSID : 72:a7:41:96:54:c6


TextToSpeech
VOICE TO TEXT CONVERTER
you clicked text to speech


Text To Speech
Enter text in English
Select Language
Translate and Speak


Click on Mic to speak
Output will appear here


Major Project (Associated with ADVANCED ANDROI APP DEVELOPMENT Subject [CSE227] at Lovely Professional University)
0 stars
0 forks
1 watching
1 Branch
0 Tags
Activity
Public repository
main
Code
gopi76 last week
README.md
last week
README
Car-Pooling-App
Major Project [Associated with ADVANCED ANDROID APP DEVELOPMENT Subject [CSE227] at Lovely Professional University]
Share the app



Wifi Check Code

```
package com.example.finalsemester
import android.annotation.SuppressLint
import android.content.Context
import android.content.Intent
import android.net.wifi.WifiManager
import android.os.Build
import android.os.Bundle
import android.os.Handler
import android.view.animation.AlphaAnimation
import android.view.animation.AnimationUtils
import android.widget.Button
import android.widget.ImageView
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity
class EnableDisableWifi : AppCompatActivity() {
    private lateinit var enableButton: Button
    private lateinit var checkButton: Button
    private lateinit var carpoolapp: Button
    private lateinit var statusTextView: TextView
    @SuppressLint("MissingInflatedId")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_enable_disable_wifi)
        enableButton = findViewById(R.id.enablebtn)
        checkButton = findViewById(R.id.checkbtn)
        carpoolapp = findViewById(R.id.app)
        statusTextView = findViewById(R.id.statusTextView)
        val fadeInAnimation = AnimationUtils.loadAnimation(this, R.anim.fade_in)
        enableButton.setOnClickListener {
            val wifiManager =
applicationContext.getSystemService(Context.WIFI_SERVICE) as WifiManager
            if (!wifiManager.isWifiEnabled) {
                if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.Q) {
                    wifiManager.startScan()
                }
                wifiManager.isWifiEnabled = true
            }
        }
```

```
        carpoolapp.setOnClickListener {
            val splashImageView = ImageView(this)
            splashImageView.setImageResource(R.drawable.splash11)
            val fadeInAnimation = AlphaAnimation(0f, 1f)
            fadeInAnimation.duration = 1000
            carpoolapp.startAnimation(fadeInAnimation)
            Handler().postDelayed({
                val intent = Intent(this, FirstActivity::class.java)
                startActivity(intent)
            }, 4000)
        }
        checkButton.setOnClickListener {
            val wifiManager =
applicationContext.getSystemService(Context.WIFI_SERVICE) as WifiManager
            val status = if (wifiManager.isWifiEnabled) "Wi-Fi is ON" else "Wi-Fi
is OFF"
            statusTextView.text = status
        }
    }
}
```

First Activity (used animation in this code)

```
package com.example.finalsemester
import android.content.Intent
import android.os.Bundle
import android.view.animation.AnimationSet
import android.view.animation.AnimationUtils
import android.widget.Button
import android.widget.ImageView
import androidx.appcompat.app.AppCompatActivity
import com.example.finalsemester.onboarding.OnBoardingActivity
import java.util.Timer
import kotlin.concurrent.timerTask
class FirstActivity : AppCompatActivity() {
    private var imageView: ImageView? = null
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_first)
        imageView = findViewById(R.id.app_name)
        val button: Button = findViewById(R.id.button2)
        button.setOnClickListener {
            animateAndNavigate()
        }
    }
    private fun animateAndNavigate() {
        val animationSet = AnimationSet(true)
        val zoomOutAnimation = AnimationUtils.loadAnimation(this,
R.anim.zoom_out)
        animationSet.addAnimation(zoomOutAnimation)
        val zoomInAnimation = AnimationUtils.loadAnimation(this, R.anim.zoom_in)
        zoomInAnimation.startOffset = 1000
        animationSet.addAnimation(zoomInAnimation)
        val rotateAnimation = AnimationUtils.loadAnimation(this, R.anim.rotate)
        rotateAnimation.startOffset = 2000
        animationSet.addAnimation(rotateAnimation)
        imageView?.startAnimation(animationSet)
        Timer().schedule(timerTask {
            startActivity(Intent(this@FirstActivity,
OnBoardingActivity::class.java))
```

```
            finish()
            overridePendingTransition(R.anim.slide_in_right,
R.anim.slide_out_left)
        }, 4000)
    }
}
```

OnBoarding Activty

```
package com.example.finalsemester.onboarding
import android.content.Intent
import android.os.Bundle
import android.view.View
import android.view.ViewGroup
import android.widget.ImageView
import android.widget.LinearLayout
import androidx.appcompat.app.AppCompatActivity
import androidx.core.content.ContextCompat
import androidx.viewpager2.widget.ViewPager2
import androidx.viewpager2.widget.ViewPager2.OnPageChangeCallback
import com.example.finalsemester.LoginActivity
import com.example.finalsemester.R
import com.google.android.material.button.MaterialButton
class OnBoardingActivity : AppCompatActivity() {
    private lateinit var onboardingAdapter: OnboardingAdapter
    private lateinit var layoutOnboardingIndicator: LinearLayout
    private lateinit var buttonOnboardingAction: MaterialButton
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_on_boarding)
        layoutOnboardingIndicator = findViewById(R.id.layoutOnboardingIndicators)
        buttonOnboardingAction = findViewById(R.id.buttonOnBoardingAction)
        setOnboardingItem()
        val onboardingViewPager =
findViewById<ViewPager2>(R.id.onboardingViewPager)
        onboardingViewPager.adapter = onboardingAdapter
        setOnboadingIndicator()
        setCurrentOnboardingIndicators(0)

        onboardingViewPager.registerOnPageChangeCallback(object :
OnPageChangeCallback() {
            override fun onPageSelected(position: Int) {
                super.onPageSelected(position)
                setCurrentOnboardingIndicators(position)
            }
        })
        buttonOnboardingAction.setOnClickListener { view: View? ->
            if (onboardingViewPager.currentItem + 1 <
onboardingAdapter.itemCount) {
                onboardingViewPager.currentItem = onboardingViewPager.currentItem
+ 1
            } else {
                moveToLogin()
                finish()
            }
        }
    }
    private fun setOnboadingIndicator() {
        val indicators = arrayOfNulls<ImageView>(onboardingAdapter.itemCount)
        val layoutParams = LinearLayout.LayoutParams(
```

```
            ViewGroup.LayoutParams.WRAP_CONTENT,
ViewGroup.LayoutParams.WRAP_CONTENT
        )
        layoutParams.setMargins(8, 0, 8, 0)
        for (i in indicators.indices) {
            indicators[i] = ImageView(applicationContext)
            indicators[i]!!.setImageDrawable(
                ContextCompat.getDrawable(
                    applicationContext, R.drawable.onboarding_indicator_inactive
                )
            )
            indicators[i]!!.layoutParams = layoutParams
            layoutOnboardingIndicator.addView(indicators[i])
        }
    }
    private fun setCurrentOnboardingIndicators(index: Int) {
        val childCount = layoutOnboardingIndicator.childCount
        for (i in 0 until childCount) {
            val imageView = layoutOnboardingIndicator.getChildAt(i) as ImageView
            imageView.setImageDrawable(
                if (i == index) ContextCompat.getDrawable(applicationContext,
R.drawable.onboarding_indicator_active)
                else ContextCompat.getDrawable(applicationContext,
R.drawable.onboarding_indicator_inactive)
            )
        }
        buttonOnboardingAction.text = if (index == onboardingAdapter.itemCount -
1) "Start" else "Next"
    }
    private fun setOnboardingItem() {
        val onBoardingItems: MutableList<OnBoardingItem> = ArrayList()
        val loginpageinfo = OnBoardingItem()
        loginpageinfo.setTitle("Sign In and Sign Up")
        loginpageinfo.setDescription("User can create the account and log in
through that credentials!")
        loginpageinfo.setImage(R.drawable.login)
        val carownerAndRider = OnBoardingItem()
        carownerAndRider.setTitle("Car owner or Rider")
        carownerAndRider.setDescription("User can select either they were car
owner or rider in the app")
        carownerAndRider.setImage(R.drawable.category)
        val rides = OnBoardingItem()
        rides.setTitle("Offer Rides")
        rides.setDescription("User can see all the available rides in the app")
        rides.setImage(R.drawable.rides)
        val locations = OnBoardingItem()
        locations.setTitle("Near by Cars")
        locations.setDescription("User can see all the near by cars in the app by
using Open Street Map")
        locations.setImage(R.drawable.location)
        val profile = OnBoardingItem()
        profile.setTitle("User Profile Information")
        profile.setDescription("User can view their profile and update their
details if user wants too!")
        profile.setImage(R.drawable.updateprofile)
        val rating11 = OnBoardingItem()
        rating11.setTitle("Rating Star")
        rating11.setDescription("User can give the rating and it is stored in
firebase")
        rating11.setImage(R.drawable.rating)
        val feedback11 = OnBoardingItem()
        feedback11.setTitle("Rating and Feedback Form")
```

```
        feedback11.setDescription("User can fill their queries through feedback
form and these details are stored in realtime firebase")
        feedback11.setImage(R.drawable.feedback)
        onBoardingItems.add(loginpageinfo)
        onBoardingItems.add(rides)
        onBoardingItems.add(carownerAndRider)
        onBoardingItems.add(locations)
        onBoardingItems.add(profile)
        onBoardingItems.add(rating11)
        onBoardingItems.add(feedback11)
        onboardingAdapter = OnboardingAdapter(onBoardingItems)
    }
    private fun moveToLogin() {
        startActivity(Intent(applicationContext, LoginActivity::class.java))
        finish()
    }
}
```

Login Activity

```
package com.example.finalsemester
import android.app.Dialog
import android.content.Intent
import android.content.res.ColorStateList
import android.os.Bundle
import android.util.Log
import android.widget.Button
import android.widget.EditText
import android.widget.ImageView
import android.widget.ProgressBar
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity
import androidx.core.content.ContextCompat
import com.google.firebase.database.DataSnapshot
import com.google.firebase.database.DatabaseError
import com.google.firebase.database.FirebaseDatabase
import com.google.firebase.database.ValueEventListener
class LoginActivity : AppCompatActivity() {
    private lateinit var loginUsername: EditText
    private lateinit var loginPassword: EditText
    private lateinit var loginButton: Button
    private lateinit var signupRedirectText: TextView
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_login)
        loginUsername = findViewById(R.id.login_username)
        loginPassword = findViewById(R.id.login_password)
        signupRedirectText = findViewById(R.id.signupRedirectText)
        loginButton = findViewById(R.id.login_button)
        loginButton.setOnClickListener {
            if (validateInputs()) {
                checkUser()
            }
        }
        signupRedirectText.setOnClickListener {
            startActivity(Intent(this@LoginActivity, SignupActivity::class.java))
        }
    }
    private fun validateInputs(): Boolean {
        val username = loginUsername.text.toString().trim()
```

```
        val password = loginPassword.text.toString().trim()
        if (username.isEmpty()) {
            loginUsername.error = "Username cannot be empty"
            return false
        }
        if (password.isEmpty()) {
            loginPassword.error = "Password cannot be empty"
            return false
        }
        return true
    }
    private fun checkUser() {
        val userUsername = loginUsername.text.toString().trim()
        val userPassword = loginPassword.text.toString().trim()
        val reference = FirebaseDatabase.getInstance().getReference("users")
        val query = reference.orderByChild("username").equalTo(userUsername)
        val progressDialog = Dialog(this@LoginActivity)
        progressDialog.setContentView(R.layout.custom_progress_dialog)
        val imageView: ImageView = progressDialog.findViewById(R.id.imageView)
        val loadingProgressBar: ProgressBar =
progressDialog.findViewById(R.id.loadingProgressBar)
        imageView.setImageResource(R.drawable.me)
        loadingProgressBar.indeterminateTintList =
ColorStateList.valueOf(ContextCompat.getColor(this, R.color.dark_blue))
        progressDialog.setCancelable(false)
        progressDialog.show()
        query.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(snapshot: DataSnapshot) {
                progressDialog.dismiss()
                if (snapshot.exists()) {
                    for (childSnapshot in snapshot.children) {
                        val passwordFromDB =
childSnapshot.child("password").getValue(String::class.java)
                        if (passwordFromDB == userPassword) {
                            val nameFromDB =
childSnapshot.child("name").getValue(String::class.java)
                            val emailFromDB =
childSnapshot.child("email").getValue(String::class.java)
                            val usernameFromDB =
childSnapshot.child("username").getValue(String::class.java)

                            val userDetails = HashMap<String, String>().apply {
                                put("name", nameFromDB!!)
                                put("email", emailFromDB!!)
                                put("username", usernameFromDB!!)
                                put("password", passwordFromDB!!)
                            }
                            val intent = Intent(this@LoginActivity,
CategorySelectionActivity::class.java).apply {
                                putExtra("userDetails", userDetails)
                            }
                            startActivity(intent)

                            Log.d("LoginActivity", "User logged in successfully:
$userUsername")
                            return
                        } else {
                            loginPassword.error = "Invalid Credentials"
                            return
                        }
                    }
                } else {
```

```
                    loginUsername.error = "User does not exist"
                }
            }
            override fun onCancelled(error: DatabaseError) {
                progressDialog.dismiss()
            }
        })
    }
}
```

Sign up Activity

```
package com.example.finalsemester
import android.content.Intent
import android.os.Bundle
import android.view.View
import android.widget.Button
import android.widget.EditText
import android.widget.TextView
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import com.example.finalsemester.HelperClass
import com.example.finalsemester.LoginActivity
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
class SignupActivity : AppCompatActivity() {
    lateinit var signupName: EditText
    lateinit var signupEmail: EditText
    lateinit var signupUsername: EditText
    lateinit var signupPassword: EditText
    lateinit var loginRedirectText: TextView
    lateinit var signupButton: Button
    var database: FirebaseDatabase? = null
    var reference: DatabaseReference? = null
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_signup)
        signupName = findViewById<EditText>(R.id.signup_name)
        signupEmail = findViewById<EditText>(R.id.signup_email)
        signupUsername = findViewById<EditText>(R.id.signup_username)
        signupPassword = findViewById<EditText>(R.id.signup_password)
        signupButton = findViewById<Button>(R.id.signup_button)
        loginRedirectText = findViewById<TextView>(R.id.loginRedirectText)
        signupButton.setOnClickListener(View.OnClickListener {
            database = FirebaseDatabase.getInstance()
            reference = database!!.getReference("users")
            val name = signupName.getText().toString()
            val email = signupEmail.getText().toString()
            val username = signupUsername.getText().toString()
            val password = signupPassword.getText().toString()
            if (name.isEmpty() || email.isEmpty() || username.isEmpty() ||
password.isEmpty()) {
                Toast.makeText(this@SignupActivity, "All details are mandatory to
fill", Toast.LENGTH_SHORT).show()
                return@OnClickListener
            }
            val helperClass = HelperClass(name, email, username, password)
            reference!!.child(username).setValue(helperClass)
            Toast.makeText(this@SignupActivity, "You have signup successfully!",
Toast.LENGTH_SHORT)
```

```
                .show()
            val intent = Intent(this@SignupActivity, LoginActivity::class.java)
            startActivity(intent)
        })
        loginRedirectText.setOnClickListener(View.OnClickListener {
            val intent = Intent(this@SignupActivity, LoginActivity::class.java)
            startActivity(intent)
        })
    }
}
```

Category Selection Activity

```
package com.example.finalsemester
import android.content.Intent
import android.os.Bundle
import android.view.View
import androidx.appcompat.app.AppCompatActivity
import androidx.cardview.widget.CardView
class CategorySelectionActivity : AppCompatActivity(), View.OnClickListener {
    private lateinit var userDetails: HashMap<String, String>
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_category_selection)
        userDetails = intent.getSerializableExtra("userDetails") as?
HashMap<String, String>
            ?: HashMap()
        val rider = findViewById<CardView>(R.id.rider)
        val car_owner = findViewById<CardView>(R.id.car_owner)
        car_owner.setOnClickListener(this)
        rider.setOnClickListener(this)
    }
    override fun onClick(view: View?) {
        when (view?.id) {
            R.id.car_owner -> {
                val intent = Intent(this, MainActivity::class.java).apply {
                    putExtra("userDetails", userDetails)
                }
                startActivity(intent)
            }
            R.id.rider -> {
                val intent = Intent(this, MainActivity2::class.java).apply {
                    putExtra("userDetails", userDetails)
                }
                startActivity(intent)
            }
        }
    }
}
```

Data Classes : (for both riders and car owners)

```
package com.example.finalsemester
data class CarOwner(
    var name: String = "",
    var phoneNumber: String = "",
    var email: String = "",
    var carModel: String = "",
    var seatsAvailable: String = "",
    var costPerRide: String = "",
```

```
    var startLocation: String = "",
    var destination: String = "",
    var currentLocation: String = "",
    var dateTime: String = ""
) {
    constructor() : this(
        "", "", "", "", "", "", "", "", "", ""
    )
}
```

```
package com.example.finalsemester
data class Rider(
    val email: String = "",
    val displayName: String = "",
    val phoneNumber: String = "",
    val date: String = "",
    val startLocation: String = "",
    val destination: String = "",
    val currentLocation: String = "",
    val requiredTime: String = ""
) {
    constructor() : this(
        email = "",
        displayName = "",
        phoneNumber = "",
        date = "",
        startLocation = "",
        destination = "",
        currentLocation = "",
        requiredTime = ""
    )
}
```

Main Activity 1 (for car_owners)

```
package com.example.finalsemester
import android.content.Context
import android.content.Intent
import android.hardware.Sensor
import android.hardware.SensorEvent
import android.hardware.SensorEventListener
import android.hardware.SensorManager
import android.os.Bundle
import android.view.MenuItem
import android.widget.Toast
import androidx.appcompat.app.ActionBarDrawerToggle
import androidx.appcompat.app.AlertDialog
import androidx.appcompat.app.AppCompatActivity
import androidx.appcompat.widget.Toolbar
import androidx.core.view.GravityCompat
import androidx.drawerlayout.widget.DrawerLayout
import com.google.android.material.bottomnavigation.BottomNavigationView
import com.google.android.material.navigation.NavigationView
class MainActivity : AppCompatActivity(), SensorEventListener {
    private lateinit var layDL: DrawerLayout
    private lateinit var vNV: NavigationView
    private lateinit var toolbar: Toolbar
    private lateinit var sensorManager: SensorManager
    private var proximitySensor: Sensor? = null
```

```
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        layDL = findViewById(R.id.layDL)
        vNV = findViewById(R.id.vNV)
        toolbar = findViewById(R.id.toolbar)
        sensorManager = getSystemService(Context.SENSOR_SERVICE) as SensorManager
        proximitySensor = sensorManager.getDefaultSensor(Sensor.TYPE_PROXIMITY)
        setSupportActionBar(toolbar)
        val toggle = ActionBarDrawerToggle(
            this, layDL, toolbar,
            R.string.open_drawer, R.string.close_drawer
        )
        layDL.addDrawerListener(toggle)
        toggle.syncState()
        if (savedInstanceState == null) {
            vNV.setCheckedItem(R.id.row_home)
        }
        navClick()
        val bottomNavigationView11 =
findViewById<BottomNavigationView>(R.id.bottomNavigationView11)
        bottomNavigationView11.setOnNavigationItemSelectedListener { item ->
            when (item.itemId) {
                R.id.nearbyriders -> {
                    Toast.makeText(this, "you clicked nearByCars",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, NearByRiders::class.java)
                    startActivity(intent)
                    true
                }
                R.id.createRide -> {
                    Toast.makeText(this, "Create a Ride",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this,
CarOwnerProfileSetupActivity::class.java)
                    startActivity(intent)
                    true
                }
                R.id.userprofilecarowner -> {
                    Toast.makeText(this, "Your Profile",
Toast.LENGTH_SHORT).show()
                    val userDetails = intent.getSerializableExtra("userDetails")
as HashMap<String, String>
                    val intent = Intent(this, UserProfile::class.java).apply {
                        putExtra("userDetails", userDetails)
                    }
                    startActivity(intent)
                    true
                }
                else -> false
            }
        }
    }
    private fun navClick() {
        vNV.setNavigationItemSelectedListener { item: MenuItem ->
            when (item.itemId) {
                R.id.row_home -> Toast.makeText(this, "Home",
Toast.LENGTH_SHORT).show()
                R.id.settings_profile -> {
                    Toast.makeText(this, "Profile", Toast.LENGTH_SHORT).show()
                    val userDetails = intent.getSerializableExtra("userDetails")
as HashMap<String, String>
```

```
                    val intent = Intent(this, ProfileActivity::class.java).apply
{
                        putExtra("userDetails", userDetails)
                    }
                    startActivity(intent)
                }
                R.id.texttospeech -> {
                    Toast.makeText(this, "you clicked text to speech",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, SelectionActivity::class.java)
                    startActivity(intent)
                }
                R.id.appcreator -> {
                    Toast.makeText(this, "About app creator",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this,
AppAdminInformationActivity::class.java)
                    startActivity(intent)
                }
                R.id.logOut -> {
                    Toast.makeText(this, "You clicked log out",
Toast.LENGTH_SHORT).show()
                    val builder = AlertDialog.Builder(this)

                    builder.setTitle("Logout")
                    builder.setMessage("Are you sure you want to logout?")
                    builder.setIcon(R.drawable.logout)

                    builder.setPositiveButton("Yes") { _, _ ->

                        val intent = Intent(this@MainActivity,
LoginActivity::class.java)
                        startActivity(intent)
                        finish()
                    }
                    builder.setNegativeButton("No") { dialog, _ ->
                        dialog.dismiss()
                    }

                    val dialog: AlertDialog = builder.create()
                    dialog.show()
                }
                R.id.rating11 -> {
                    Toast.makeText(this, "you clicked rating",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, RatingStarActivity::class.java)
                    startActivity(intent)
                }
                R.id.wifi -> {
                    Toast.makeText(this, "wifi information",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, WifiInfoDemo::class.java)
                    startActivity(intent)
                }
                R.id.feedbackform11 -> {
                    Toast.makeText(this, "Feedback Form",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, FeedbackForm::class.java)
                    startActivity(intent)
                }
                R.id.faq -> {
                    Toast.makeText(this, "you clicked FAQ",
```

```
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, FAQActivity::class.java)
                    startActivity(intent)
                }
                R.id.row_share -> {
                    Toast.makeText(this, "Share", Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, ShareTheApp::class.java)
                    startActivity(intent)
                }
            }
            layDL.closeDrawer(GravityCompat.START)
            true
        }
    }
    override fun onBackPressed() {
        if (layDL.isDrawerOpen(GravityCompat.START)) {
            layDL.closeDrawer(GravityCompat.START)
        } else {
            super.onBackPressed()
        }
    }
    override fun onResume() {
        super.onResume()
        proximitySensor?.let {
            sensorManager.registerListener(this, it,
SensorManager.SENSOR_DELAY_NORMAL)
        }
    }
    override fun onPause() {
        super.onPause()
        proximitySensor?.let {
            sensorManager.unregisterListener(this, it)
        }
    }
    override fun onSensorChanged(event: SensorEvent?) {
        event?.let { sensorEvent ->
            if (sensorEvent.sensor == proximitySensor) {
                val distance = sensorEvent.values.getOrNull(0)
                val maxRange = proximitySensor?.maximumRange ?: 0f
                distance?.let {
                    if (it < maxRange) {
                        val errorMessage = "You are very near to your phone. It
will effect your eyes. You may go blind."
                        showProximityAlert(errorMessage)
                    }
                }
            }
        }
    }
    override fun onAccuracyChanged(sensor: Sensor?, accuracy: Int) {
    }
    private fun showProximityAlert(errorMessage: String) {
        val builder = AlertDialog.Builder(this)
        builder.setTitle("Alert!!")
        builder.setMessage(errorMessage)
        builder.setIcon(R.drawable.error)
        builder.setPositiveButton("OK") { dialog, _ ->
            dialog.dismiss()
        }
        builder.setNegativeButton("Cancel") { dialog, _ ->
            dialog.dismiss()
        }
```

```
        val dialog: AlertDialog = builder.create()
        dialog.show()
    }
}
```

Main Activity 2 (for riders)

```
package com.example.finalsemester
import android.annotation.SuppressLint
import android.content.Context
import android.content.Intent
import android.hardware.Sensor
import android.hardware.SensorEvent
import android.hardware.SensorEventListener
import android.hardware.SensorManager
import android.os.Bundle
import android.view.MenuItem
import android.widget.Toast
import androidx.appcompat.app.ActionBarDrawerToggle
import androidx.appcompat.app.AlertDialog
import androidx.appcompat.app.AppCompatActivity
import androidx.appcompat.widget.Toolbar
import androidx.core.view.GravityCompat
import androidx.drawerlayout.widget.DrawerLayout
import com.google.android.material.bottomnavigation.BottomNavigationView
import com.google.android.material.navigation.NavigationView
class MainActivity2 : AppCompatActivity(), SensorEventListener {
    private lateinit var layDL: DrawerLayout
    private lateinit var vNV: NavigationView
    private lateinit var toolbar: Toolbar
    private lateinit var sensorManager: SensorManager
    private var proximitySensor: Sensor? = null
    @SuppressLint("MissingInflatedId")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main2)
        layDL = findViewById(R.id.layDL)
        vNV = findViewById(R.id.vNV)
        toolbar = findViewById(R.id.toolbar)
        sensorManager = getSystemService(Context.SENSOR_SERVICE) as SensorManager
        proximitySensor = sensorManager.getDefaultSensor(Sensor.TYPE_PROXIMITY)
        val bottomNavigationView1 =
findViewById<BottomNavigationView>(R.id.bottomNavigationView)
        bottomNavigationView1.setOnNavigationItemSelectedListener { item ->
            when (item.itemId) {
                R.id.availablecars -> {
                    Toast.makeText(this, "you clicked available Cars",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, CarOwnersActivity::class.java)
                    startActivity(intent)
                    true
                }
                R.id.nearbycars -> {
                    Toast.makeText(this, "you clicked nearByCars",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, NearByCars::class.java)
                    startActivity(intent)
                    true
                }
```

```
                R.id.userprofilerider -> {
                    Toast.makeText(this, "Your Profile",
Toast.LENGTH_SHORT).show()
                    val userDetails = intent.getSerializableExtra("userDetails")
as HashMap<String, String>
                    val intent = Intent(this, UserProfile::class.java).apply {
                        putExtra("userDetails", userDetails)
                    }
                    startActivity(intent)
                    true
                }
                R.id.searchcars -> {
                    Toast.makeText(this, "You clicked Search",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, SearchCarsActivity::class.java)
                    startActivity(intent)
                    true
                }
                else -> false
            }
        }
        setSupportActionBar(toolbar)
        val toggle = ActionBarDrawerToggle(
            this, layDL, toolbar,
            R.string.open_drawer, R.string.close_drawer
        )
        layDL.addDrawerListener(toggle)
        toggle.syncState()
        if (savedInstanceState == null) {
            vNV.setCheckedItem(R.id.row_home)
        }
        navClick()
    }
    private fun navClick() {
        vNV.setNavigationItemSelectedListener { item: MenuItem ->
            when (item.itemId) {
                R.id.row_home -> Toast.makeText(this, "Home",
Toast.LENGTH_SHORT).show()
                R.id.settings_profile -> {
                    handleProfileNavigation()
                    true
                }
                R.id.logOut -> {
                    Toast.makeText(this, "You clicked log out",
Toast.LENGTH_SHORT).show()
                    val builder = AlertDialog.Builder(this)
                    builder.setTitle("Logout")
                    builder.setMessage("Are you sure you want to logout?")
                    builder.setIcon(R.drawable.logout)

                    builder.setPositiveButton("Yes") { _, _ ->
                        val intent = Intent(this@MainActivity2,
LoginActivity::class.java)
                        startActivity(intent)
                        finish()
                    }
                    builder.setNegativeButton("No") { dialog, _ ->
                        dialog.dismiss()
                    }
                    val dialog: AlertDialog = builder.create()
                    dialog.show()
                }
```

```
                R.id.rating11 -> {
                    Toast.makeText(this, "you clicked rating",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, RatingStarActivity::class.java)
                    startActivity(intent)
                }
                R.id.wifi -> {
                    Toast.makeText(this, "wifi information",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, WifiInfoDemo::class.java)
                    startActivity(intent)
                }
                R.id.texttospeech -> {
                    Toast.makeText(this, "you clicked text to speech",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, SelectionActivity::class.java)
                    startActivity(intent)
                }
                R.id.appcreator -> {
                    Toast.makeText(this, "About app creator",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this,
AppAdminInformationActivity::class.java)
                    startActivity(intent)
                }
                R.id.feedbackform11 -> {
                    Toast.makeText(this, "Feedback Form",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, FeedbackForm::class.java)
                    startActivity(intent)
                }
                R.id.faq -> {
                    Toast.makeText(this, "you clicked FAQ",
Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, FAQActivity::class.java)
                    startActivity(intent)
                }
                R.id.row_share -> {
                    Toast.makeText(this, "Share", Toast.LENGTH_SHORT).show()
                    val intent = Intent(this, ShareTheApp::class.java)
                    startActivity(intent)
                }
            }
            layDL.closeDrawer(GravityCompat.START)
            true
        }
    }
    private fun handleProfileNavigation() {
        val userDetails = intent.getSerializableExtra("userDetails") as?
HashMap<*, *>
        if (userDetails != null && userDetails is HashMap<*, *>) {
            val intent = Intent(this, ProfileActivity::class.java).apply {
                putExtra("userDetails", userDetails as HashMap<String, String>)
            }
            startActivity(intent)
        } else {
            Toast.makeText(this, "User details not found",
Toast.LENGTH_SHORT).show()
        }
    }
```

```
    override fun onBackPressed() {
        if (layDL.isDrawerOpen(GravityCompat.START)) {
            layDL.closeDrawer(GravityCompat.START)
        } else {
            super.onBackPressed()
        }
    }
    override fun onResume() {
        super.onResume()
        proximitySensor?.let {
            sensorManager.registerListener(this, it,
SensorManager.SENSOR_DELAY_NORMAL)
        }
    }
    override fun onPause() {
        super.onPause()
        proximitySensor?.let {
            sensorManager.unregisterListener(this, it)
        }
    }
    override fun onSensorChanged(event: SensorEvent?) {
        event?.let { sensorEvent ->
            if (sensorEvent.sensor == proximitySensor) {
                val distance = sensorEvent.values.getOrNull(0)
                val maxRange = proximitySensor?.maximumRange ?: 0f
                distance?.let {
                    if (it < maxRange) {
                        val errorMessage = "You are very near to your phone. It
will effect your eyes. You may go blind."
                        showProximityAlert(errorMessage)
                    }
                }
            }
        }
    }
    override fun onAccuracyChanged(sensor: Sensor?, accuracy: Int) {}
    private fun showProximityAlert(errorMessage: String) {
        val builder = AlertDialog.Builder(this)
        builder.setTitle("Alert!!")
        builder.setMessage(errorMessage)
        builder.setIcon(R.drawable.error)
        builder.setPositiveButton("OK") { dialog, _ ->
            dialog.dismiss()
        }
        builder.setNegativeButton("Cancel") { dialog, _ ->
            dialog.dismiss()
        }
        val dialog: AlertDialog = builder.create()
        dialog.show()
    }
}
```

Car Owner Profile Setup Activity

```
package com.example.finalsemester
import android.content.Intent
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
```

```
import androidx.appcompat.app.AlertDialog
import androidx.appcompat.app.AppCompatActivity
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
import kotlinx.coroutines.Dispatchers
import kotlinx.coroutines.GlobalScope
import kotlinx.coroutines.launch
import java.util.Properties
import javax.mail.Authenticator
import javax.mail.Message
import javax.mail.PasswordAuthentication
import javax.mail.Session
import javax.mail.Transport
import javax.mail.internet.InternetAddress
import javax.mail.internet.MimeMessage
class CarOwnerProfileSetupActivity : AppCompatActivity() {
    private lateinit var nameEditText: EditText
    private lateinit var phoneNumberEditText: EditText
    private lateinit var emailEditText: EditText
    private lateinit var carModelEditText: EditText
    private lateinit var seatsEditText: EditText
    private lateinit var costPerRideEditText: EditText
    private lateinit var startLocationEditText: EditText
    private lateinit var destinationEditText: EditText
    private lateinit var currentLocationEditText: EditText
    private lateinit var dateTimeEditText: EditText
    private lateinit var saveButton: Button
    private lateinit var database: FirebaseDatabase
    private lateinit var reference: DatabaseReference
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_car_owner_profile_setup)
        nameEditText = findViewById(R.id.editTextName)
        phoneNumberEditText = findViewById(R.id.editTextPhoneNumber)
        emailEditText = findViewById(R.id.editTextEmail)
        carModelEditText = findViewById(R.id.editTextCarModel)
        seatsEditText = findViewById(R.id.editTextSeats)
        costPerRideEditText = findViewById(R.id.editTextCost)
        startLocationEditText = findViewById(R.id.editTextStartLocation)
        destinationEditText = findViewById(R.id.editTextDestinationLocation)
        currentLocationEditText = findViewById(R.id.editTextCurrentLocation)
        dateTimeEditText = findViewById(R.id.editTextDateTime)
        saveButton = findViewById(R.id.buttonSave)
        database = FirebaseDatabase.getInstance()
        reference = database.reference.child("car_owners")
        saveButton.setOnClickListener {
            saveCarOwnerInformation()
        }
    }
    private fun saveCarOwnerInformation() {
        val name = nameEditText.text.toString().trim()
        val phoneNumber = phoneNumberEditText.text.toString().trim()
        val email = emailEditText.text.toString().trim()
        val carModel = carModelEditText.text.toString().trim()
        val seatsAvailable = seatsEditText.text.toString().trim()
        val costPerRide = costPerRideEditText.text.toString().trim()
        val startLocation = startLocationEditText.text.toString().trim()
        val destination = destinationEditText.text.toString().trim()
        val currentLocation = currentLocationEditText.text.toString().trim()
        val dateTime = dateTimeEditText.text.toString().trim()
        if (name.isEmpty() || phoneNumber.isEmpty() || email.isEmpty() ||
            carModel.isEmpty() || seatsAvailable.isEmpty() ||
```

```
costPerRide.isEmpty() ||
            startLocation.isEmpty() || destination.isEmpty() ||
currentLocation.isEmpty() || dateTime.isEmpty()
        ) {
            Toast.makeText(this, "Please fill in all required fields",
Toast.LENGTH_SHORT).show()
            return
        }
        val carOwnerInfo = mapOf(
            "email" to email,
            "name" to name,
            "phoneNumber" to phoneNumber,
            "carModel" to carModel,
            "seatsAvailable" to seatsAvailable,
            "costPerRide" to costPerRide,
            "startLocation" to startLocation,
            "destination" to destination,
            "currentLocation" to currentLocation,
            "dateTime" to dateTime
        )
        sendEmail(email, carOwnerInfo)
        reference.push().setValue(carOwnerInfo)
            .addOnSuccessListener {
                AlertDialog.Builder(this)
                    .setTitle("Verify Your Phone Number")
                    .setIcon(R.drawable.tick)
                    .setMessage("Car owner information saved successfully. Verify
its mandatory.")
                    .setPositiveButton("OK") { dialog, which ->
                        val intent = Intent(this,
PhoneAuthenticationActivity::class.java)
                        startActivity(intent)
                    }
                    .show()
                clearEditTextFields()
            }
            .addOnFailureListener { e ->
                Toast.makeText(this, "Failed to save car owner information",
Toast.LENGTH_SHORT).show()
            }
    }
    private fun sendEmail(recipientEmail: String, userDetails: Map<String,
String>) {
        GlobalScope.launch(Dispatchers.IO) {
            try {
                val props = Properties()
                props["mail.smtp.host"] = "smtp.gmail.com"
                props["mail.smtp.port"] = "587"
                props["mail.smtp.auth"] = "true"
                props["mail.smtp.starttls.enable"] = "true"
                val session = Session.getInstance(props, object : Authenticator()
{
                    override fun getPasswordAuthentication():
PasswordAuthentication {
                        return
PasswordAuthentication("gopikrishnaguntamukkala3@gmail.com", "zpuebnvfffveyfou")
                    }
                })
                val message = MimeMessage(session)

message.setFrom(InternetAddress("gopikrishnaguntamukkala3@gmail.com"))
                message.addRecipient(Message.RecipientType.TO,
```

```
InternetAddress(recipientEmail))
                message.subject = "Successfully Created a Ride for the Users"
                val messageBody = buildString {
                    append("Dear ${userDetails["name"]} ,\n\n")
                    append("Thank you for providing your information and and
verify your number(it's mandatory)  \n\n")
                    append("Your Details : \n")
                    append("Name: ${userDetails["name"]}\n")
                    append("Phone Number: ${userDetails["phoneNumber"]}\n")
                    append("Email: ${userDetails["email"]}\n")
                    append("Car Model: ${userDetails["carModel"]}\n")
                    append("Seats Available: ${userDetails["seatsAvailable"]}\n")
                    append("Cost Per Ride: ${userDetails["costPerRide"]}\n")
                    append("Start Location: ${userDetails["startLocation"]}\n")
                    append("Destination: ${userDetails["destination"]}\n")
                    append("Current Location:
${userDetails["currentLocation"]}\n")
                    append("Date and Time: ${userDetails["dateTime"]}\n\n")
                    append("Best regards,\nG. Gopi Krishna\nFinal Year BTech
CSE\nLovely Professional University, India.\n\nMobile: 76590 46696\nEmail:
gopikrishnaguntamukkala3@gmail.com")
                }
                message.setText(messageBody)
                Transport.send(message)
                runOnUiThread {
                    Toast.makeText(this@CarOwnerProfileSetupActivity, "Email sent
successfully", Toast.LENGTH_SHORT).show()
                }
            } catch (e: Exception) {
                e.printStackTrace()
                runOnUiThread {
                    Toast.makeText(this@CarOwnerProfileSetupActivity, "Failed to
send email: ${e.message}", Toast.LENGTH_SHORT).show()
                }
            }
        }
    }
    private fun clearEditTextFields() {
        nameEditText.text.clear()
        phoneNumberEditText.text.clear()
        emailEditText.text.clear()
        carModelEditText.text.clear()
        seatsEditText.text.clear()
        costPerRideEditText.text.clear()
        startLocationEditText.text.clear()
        destinationEditText.text.clear()
        currentLocationEditText.text.clear()
        dateTimeEditText.text.clear()
    }
}
```

Near By Riders Activity

```
package com.example.finalsemester

import android.Manifest
import android.content.pm.PackageManager
import android.graphics.Bitmap
import android.graphics.drawable.BitmapDrawable
import android.location.Geocoder
```

```
import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import androidx.core.app.ActivityCompat
import androidx.core.content.ContextCompat
import androidx.core.graphics.drawable.RoundedBitmapDrawableFactory
import com.google.android.gms.location.FusedLocationProviderClient
import com.google.android.gms.location.LocationServices
import com.google.firebase.database.DataSnapshot
import com.google.firebase.database.DatabaseError
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
import com.google.firebase.database.ValueEventListener
import org.osmdroid.config.Configuration
import org.osmdroid.tileprovider.tilesource.TileSourceFactory
import org.osmdroid.util.GeoPoint
import org.osmdroid.views.MapView
import org.osmdroid.views.overlay.Marker
import org.osmdroid.views.overlay.mylocation.GpsMyLocationProvider
import org.osmdroid.views.overlay.mylocation.MyLocationNewOverlay
import java.io.IOException

class NearByRiders : AppCompatActivity() {
    private lateinit var map1: MapView
    private lateinit var fusedLocationClient: FusedLocationProviderClient
    private lateinit var database: DatabaseReference
    companion object {
        private const val REQUEST_LOCATION_PERMISSION = 1
    }
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_near_by_riders)
        Configuration.getInstance().load(this, getSharedPreferences("osmdroid",
MODE_PRIVATE))
        map1 = findViewById(R.id.map1)
        map1.setTileSource(TileSourceFactory.MAPNIK)
        map1.setMultiTouchControls(true)
        val initialCenter = GeoPoint(31.5018, 75.5728)
        map1.controller.setCenter(initialCenter)
        map1.controller.setZoom(11.0)
        if (ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) == PackageManager.PERMISSION_GRANTED) {
            initializeMap()
        } else {
            ActivityCompat.requestPermissions(
                this,
                arrayOf(Manifest.permission.ACCESS_FINE_LOCATION),
                REQUEST_LOCATION_PERMISSION
            )
        }
        database = FirebaseDatabase.getInstance().getReference("riders")
        retrieveRiderInformation()
    }
    private fun initializeMap() {
        val locationOverlay = MyLocationNewOverlay(GpsMyLocationProvider(this),
map1)
        locationOverlay.enableMyLocation()
        map1.overlays.add(locationOverlay)
        fusedLocationClient =
LocationServices.getFusedLocationProviderClient(this)
        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) == PackageManager.PERMISSION_GRANTED) {
            fusedLocationClient.lastLocation
```

```
                .addOnSuccessListener { location ->
                    if (location != null) {
                        val geocoder = Geocoder(this)
                        try {
                            val addressList =
geocoder.getFromLocation(location.latitude, location.longitude, 1)
                            if (addressList != null && addressList.isNotEmpty())
{
                                val address = addressList[0]
                                val currentLocation = GeoPoint(location.latitude,
location.longitude)
                                addMarkerAtLocation(currentLocation, "My
Location", address.getAddressLine(0), true)
                            } else {
                                addDefaultMarker()
                            }
                        } catch (e: IOException) {
                            e.printStackTrace()
                            addDefaultMarker()
                        }
                    }
                }
        }
    }
    private fun addDefaultMarker() {
        val defaultLocation = GeoPoint(31.2565, 75.6509)
        val marker = Marker(map1)
        marker.position = defaultLocation
        marker.title = "Default Location"
        marker.snippet = "Lovely Professional University"
        marker.icon = ContextCompat.getDrawable(this, R.drawable.marker_red)
        map1.overlays.add(marker)
    }
    private fun retrieveRiderInformation() {
        database.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(dataSnapshot: DataSnapshot) {
                if (dataSnapshot.exists()) {
                    for (riderSnapshot in dataSnapshot.children) {
                        val rider = riderSnapshot.getValue(Rider::class.java)
                        rider?.let {
                            val currentLocation = rider.currentLocation ?: ""
                            if (currentLocation.isNotBlank()) {
                                val geocoder = Geocoder(this@NearByRiders)
                                try {
                                    val addressList =
geocoder.getFromLocationName(currentLocation, 1)
                                    if (addressList != null &&
addressList.isNotEmpty()) {
                                        val address = addressList[0]
                                        val riderLocation =
GeoPoint(address.latitude, address.longitude)
                                        val snippet = buildString {
                                            append("Current Location:
$currentLocation\n")
                                            append("Start Location:
${rider.startLocation ?: ""}\n")
                                            append("Destination:
${rider.destination ?: ""}")
                                        }
                                        addMarkerAtLocation(riderLocation,
rider.displayName ?: "", snippet, false)
                                    }
```

```
                                } catch (e: IOException) {
                                    e.printStackTrace()
                                }
                            }
                        }
                    }
                }
                override fun onCancelled(databaseError: DatabaseError) {
                    databaseError.toException().printStackTrace()
                }
            })
    }
    private fun addMarkerAtLocation(location: GeoPoint, title: String, snippet:
String, isMyLocation: Boolean) {
        val marker = Marker(map1)
        marker.position = location
        marker.title = title
        marker.snippet = snippet
        val markerDrawable = if (isMyLocation) {
            ContextCompat.getDrawable(this, R.drawable.round1)
        } else {
            ContextCompat.getDrawable(this, R.drawable.round111)
        }
        markerDrawable?.let {
            val width = resources.getDimension(R.dimen.marker_size).toInt()
            val height = resources.getDimension(R.dimen.marker_size).toInt()
            val resizedBitmap = Bitmap.createScaledBitmap((it as
BitmapDrawable).bitmap, width, height, false)
            val roundedBitmapDrawable =
RoundedBitmapDrawableFactory.create(resources, resizedBitmap)
            roundedBitmapDrawable.isCircular = true
            marker.icon = BitmapDrawable(resources, roundedBitmapDrawable.bitmap)
        }
        map1.overlays.add(marker)
        marker.showInfoWindow()
    }

    override fun onRequestPermissionsResult(requestCode: Int, permissions:
Array<out String>, grantResults: IntArray) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults)
        if (requestCode == REQUEST_LOCATION_PERMISSION) {
            if (grantResults.isNotEmpty() && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
                initializeMap()
            } else {
            }
        }
    }
    override fun onResume() {
        super.onResume()
        map1.onResume()
    }
    override fun onPause() {
        super.onPause()
        map1.onPause()
    }
}
```

Phone Authentication Activity

```
package com.example.finalsemester

import android.content.Intent
import android.os.Bundle
import android.view.View
import android.widget.Button
import android.widget.ProgressBar
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import com.google.android.material.textfield.TextInputEditText
import com.google.firebase.FirebaseException
import com.google.firebase.auth.FirebaseAuth
import com.google.firebase.auth.PhoneAuthCredential
import com.google.firebase.auth.PhoneAuthProvider
import java.util.concurrent.TimeUnit

class PhoneAuthenticationActivity : AppCompatActivity() {
    private lateinit var phoneNumberInput: TextInputEditText
    private lateinit var progressBar: ProgressBar
    private var verificationId: String? = null
    private lateinit var auth: FirebaseAuth
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_phone_authentication)
        auth = FirebaseAuth.getInstance()
        phoneNumberInput = findViewById(R.id.phone_verify_input)
        progressBar = findViewById(R.id.phone_verify_progressBar)
        val getOtpButton: Button = findViewById(R.id.phone_verify_get_otp)
        getOtpButton.setOnClickListener {
            val phoneNumber = phoneNumberInput.text.toString().trim()
            if (validatePhoneNumber(phoneNumber)) {
                progressBar.visibility = View.VISIBLE
                sendOtp(phoneNumber)
            } else {
                phoneNumberInput.error = "Invalid phone number"
            }
        }
    }
    private fun validatePhoneNumber(phoneNumber: String): Boolean {
        return phoneNumber.length == 10 && phoneNumber.all { it.isDigit() }
    }
    private fun sendOtp(phoneNumber: String) {
        PhoneAuthProvider.getInstance().verifyPhoneNumber(
            "+91$phoneNumber",
            60,
            TimeUnit.SECONDS,
            this,
            object : PhoneAuthProvider.OnVerificationStateChangedCallbacks() {
                override fun onVerificationCompleted(credential:
PhoneAuthCredential) {
                    progressBar.visibility = View.GONE
                    signInWithPhoneAuthCredential(credential)
                }
                override fun onVerificationFailed(e: FirebaseException) {
                    progressBar.visibility = View.GONE
                    Toast.makeText(this@PhoneAuthenticationActivity,
"Verification Failed: ${e.message}", Toast.LENGTH_SHORT).show()
                }
                override fun onCodeSent(
                    verificationId: String,
```

```
                    token: PhoneAuthProvider.ForceResendingToken
                ) {
                    super.onCodeSent(verificationId, token)
                    this@PhoneAuthenticationActivity.verificationId =
verificationId
                    navigateToOtpVerification()
                }
            })
    }
    private fun signInWithPhoneAuthCredential(credential: PhoneAuthCredential) {
        auth.signInWithCredential(credential)
            .addOnCompleteListener(this) { task ->
                if (task.isSuccessful) {
                    navigateToOtpVerification()
                } else {
                    Toast.makeText(
                        this@PhoneAuthenticationActivity,
                        "Authentication failed: ${task.exception?.message}",
                        Toast.LENGTH_SHORT
                    ).show()
                }
            }
    }
    private fun navigateToOtpVerification() {
        val intent = Intent(this@PhoneAuthenticationActivity,
OtpVerifyActivity::class.java)
        intent.putExtra("verificationId", verificationId)
        startActivity(intent)
        finish()
    }
}
```

Otp Verify Activity

```
package com.example.finalsemester

import android.content.Intent
import android.os.Bundle
import android.util.Log
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import com.google.firebase.auth.FirebaseAuth
import com.google.firebase.auth.PhoneAuthProvider

class OtpVerifyActivity : AppCompatActivity() {
    private lateinit var verificationId: String
    private lateinit var phoneNumber: String
    private val TAG = "OtpVerifyActivity"
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_otp_verify)
        verificationId = intent.getStringExtra("verificationId") ?: ""
        phoneNumber = intent.getStringExtra("phoneNumber") ?: ""
        val otpVerifyButton: Button = findViewById(R.id.otp_verify_button)
        val otpInput: EditText = findViewById(R.id.otp_verify_input)
        otpVerifyButton.setOnClickListener {
            val otpCode = otpInput.text.toString().trim()
            verifyOtp(verificationId, otpCode)
```

```
        }
    }
    private fun verifyOtp(verificationId: String, otpCode: String) {
        try {
            val credential = PhoneAuthProvider.getCredential(verificationId,
otpCode)
            FirebaseAuth.getInstance().signInWithCredential(credential)
                .addOnCompleteListener(this) { task ->
                    if (task.isSuccessful) {
                        Toast.makeText(this, "Verification successful",
Toast.LENGTH_SHORT).show()
                        startActivity(Intent(this,
SuccessfulPhoneVerificationActivity::class.java))
                        finish()
                    } else {
                        Toast.makeText(this, "Verification failed:
${task.exception?.message}", Toast.LENGTH_SHORT).show()
                    }
                }
        } catch (e: Exception) {
            Log.e(TAG, "Error verifying OTP", e)
            Toast.makeText(this, "Error verifying OTP: ${e.message}",
Toast.LENGTH_SHORT).show()
        }
    }
    private fun sanitizePhoneNumber(phoneNumber: String): String {
        return phoneNumber.replace("[^0-9]".toRegex(), "")
    }
}
```

Offers Rides Code

```
package com.example.finalsemester

import android.content.Intent
import android.net.Uri
import android.os.Bundle
import android.util.Log
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import android.widget.ImageView
import android.widget.TextView
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import androidx.recyclerview.widget.LinearLayoutManager
import androidx.recyclerview.widget.RecyclerView
import com.google.firebase.database.DataSnapshot
import com.google.firebase.database.DatabaseError
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
import com.google.firebase.database.ValueEventListener

class CarOwnersActivity : AppCompatActivity() {
    private lateinit var database: DatabaseReference
    private lateinit var adapter: CarOwnerAdapter
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_car_owners)
        database =
```

```
FirebaseDatabase.getInstance().getReference().child("car_owners")
        val recyclerView = findViewById<RecyclerView>(R.id.carOwnersRecyclerView)
        recyclerView.layoutManager = LinearLayoutManager(this)
        adapter = CarOwnerAdapter()
        recyclerView.adapter = adapter
        loadCarOwners()
    }
    private fun loadCarOwners() {
        database.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(dataSnapshot: DataSnapshot) {
                if (dataSnapshot.exists()) {
                    val carOwnersList = mutableListOf<CarOwner>()
                    for (ownerSnapshot in dataSnapshot.children) {
                        val carOwner =
ownerSnapshot.getValue(CarOwner::class.java)
                        carOwner?.let {
                            carOwnersList.add(it)
                        }
                    }
                    adapter.setCarOwners(carOwnersList)
                }
            }
            override fun onCancelled(databaseError: DatabaseError) {
                Log.e(TAG, "Error loading car owners",
databaseError.toException())
                Toast.makeText(
                    this@CarOwnersActivity,
                    "Failed to load car owners",
                    Toast.LENGTH_SHORT
                ).show()
            }
        })
    }
    companion object {
        private const val TAG = "CarOwnersActivity"
    }
    inner class CarOwnerAdapter :
RecyclerView.Adapter<CarOwnerAdapter.CarOwnerViewHolder>() {
        private var carOwners: List<CarOwner> = emptyList()
        override fun onCreateViewHolder(parent: ViewGroup, viewType: Int):
CarOwnerViewHolder {
            val itemView = LayoutInflater.from(parent.context)
                .inflate(R.layout.item_owner, parent, false)
            return CarOwnerViewHolder(itemView)
        }
        override fun onBindViewHolder(holder: CarOwnerViewHolder, position: Int)
{
            val currentCarOwner = carOwners[position]
            holder.bind(currentCarOwner)
        }
        override fun getItemCount(): Int {
            return carOwners.size
        }
        fun setCarOwners(newCarOwners: List<CarOwner>) {
            carOwners = newCarOwners
            notifyDataSetChanged()
        }
        inner class CarOwnerViewHolder(itemView: View) :
RecyclerView.ViewHolder(itemView) {
            private val nameTextView: TextView =
itemView.findViewById(R.id.card_name)
            private val costTextView: TextView = itemView.findViewById(R.id.cost)
```

```
            private val sourceTextView: TextView =
itemView.findViewById(R.id.card_source)
            private val destinationTextView: TextView =
itemView.findViewById(R.id.card_student_board)
            private val seatsTextView: TextView =
itemView.findViewById(R.id.card_seats)
            private val dateTimeTextView: TextView =
itemView.findViewById(R.id.card_date)
            private val currentLocationTextView: TextView =
itemView.findViewById(R.id.card_current_address)
            private val emailImageView: ImageView =
itemView.findViewById(R.id.card_email_button)
            private val phoneNumberImageView: ImageView =
itemView.findViewById(R.id.card_call_button)
            private val smsImageView: ImageView =
itemView.findViewById(R.id.card_sms_button)
            fun bind(carOwner: CarOwner) {
                nameTextView.text = carOwner.name
                costTextView.text = "Cost: ${carOwner.costPerRide}"
                sourceTextView.text = carOwner.startLocation
                destinationTextView.text = carOwner.destination
                seatsTextView.text = "${carOwner.seatsAvailable}"
                dateTimeTextView.text = "${carOwner.dateTime}"
                currentLocationTextView.text = "Current Location:
${carOwner.currentLocation}"
                emailImageView.setOnClickListener {
                    val intent = Intent(Intent.ACTION_SEND).apply {
                        type = "message/rfc822"
                        putExtra(Intent.EXTRA_EMAIL, arrayOf(carOwner.email))
                        putExtra(Intent.EXTRA_SUBJECT, "Subject Here")
                        putExtra(Intent.EXTRA_TEXT, "Email body here.")
                    }
                    itemView.context.startActivity(Intent.createChooser(intent,
"Send Email"))
                }
                phoneNumberImageView.setOnClickListener {
                    val intent = Intent(Intent.ACTION_DIAL).apply {
                        data = Uri.parse("tel:${carOwner.phoneNumber}")
                    }
                    itemView.context.startActivity(intent)
                }
                smsImageView.setOnClickListener {
                    val intent = Intent(Intent.ACTION_SENDTO).apply {
                        data = Uri.parse("smsto:${carOwner.phoneNumber}")
                    }
                    itemView.context.startActivity(intent)
                }
                nameTextView.setOnClickListener {
                    val intent = Intent(itemView.context,
CarOwnerProfileDetails::class.java)
                    intent.putExtra("carOwnerName", carOwner.name)
                    intent.putExtra("carOwnerCost", carOwner.costPerRide)
                    intent.putExtra("carOwnerSource", carOwner.startLocation)
                    intent.putExtra("carOwnerDestination", carOwner.destination)
                    intent.putExtra("carOwnerSeats", carOwner.seatsAvailable)
                    intent.putExtra("carOwnerDateTime", carOwner.dateTime)
                    intent.putExtra("carOwnerCurrentLocation",
carOwner.currentLocation)
                    intent.putExtra("carOwnerEmail", carOwner.email)
                    intent.putExtra("carOwnerPhoneNumber", carOwner.phoneNumber)
                    itemView.context.startActivity(intent)
                }
```

```
            }
        }
    }
}
```

Details of Car owner information

```
package com.example.finalsemester

import android.content.Intent
import android.os.Bundle
import android.widget.Button
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity

class CarOwnerProfileDetails : AppCompatActivity() {
    private lateinit var nameTextView: TextView
    private lateinit var profile_mobileNumber: TextView
    private lateinit var profileEmailTextView: TextView
    private lateinit var costTxtView: TextView
    private lateinit var currentLocationTextView: TextView
    private lateinit var startlocation: TextView
    private lateinit var destinationTextView: TextView
    private lateinit var seatsTextView: TextView
    private lateinit var bookButton: Button
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_car_owner_profile_details)
        nameTextView = findViewById(R.id.nameTextView)
        profileEmailTextView = findViewById(R.id.profile_email_input)
        profile_mobileNumber = findViewById(R.id.profile_mobileNumber)
        costTxtView = findViewById(R.id.costtxtview)
        currentLocationTextView = findViewById(R.id.currentlocation)
        startlocation = findViewById(R.id.startlocation)
        destinationTextView = findViewById(R.id.destination)
        seatsTextView = findViewById(R.id.seats)
        bookButton = findViewById(R.id.bookButton)
        val carOwnerName = intent.getStringExtra("carOwnerName") ?: ""
        val carOwnerCost = intent.getStringExtra("carOwnerCost") ?: ""
        val carOwnerMobile = intent.getStringExtra("carOwnerPhoneNumber") ?: ""
        val carOwnerEmail = intent.getStringExtra("carOwnerEmail") ?: ""
        val carOwnerCurrentLocation =
intent.getStringExtra("carOwnerCurrentLocation") ?: ""
        val carOwnerStartLocation = intent.getStringExtra("carOwnerSource") ?: ""
        val carOwnerDestination = intent.getStringExtra("carOwnerDestination") ?:
""
        val carOwnerSeats = intent.getStringExtra("carOwnerSeats") ?: ""

        nameTextView.text = carOwnerName
        costTxtView.text = carOwnerCost
        profile_mobileNumber.text = carOwnerMobile
        profileEmailTextView.text = carOwnerEmail
        currentLocationTextView.text = carOwnerCurrentLocation
        startlocation.text = carOwnerStartLocation
        destinationTextView.text = carOwnerDestination
        seatsTextView.text = carOwnerSeats

        bookButton.setOnClickListener {
            val intent = Intent(this, RiderProfileSetupActivity::class.java)
```

```
            intent.putExtra("carOwnerName", nameTextView.text.toString())
            intent.putExtra("carOwnerCost", costTxtView.text.toString())
            intent.putExtra("carOwnerPhoneNumber",
profile_mobileNumber.text.toString())
            intent.putExtra("carOwnerEmail",
profileEmailTextView.text.toString())
            intent.putExtra("carOwnerCurrentLocation",
currentLocationTextView.text.toString())
            intent.putExtra("carOwnerSource", startlocation.text.toString())
            intent.putExtra("carOwnerDestination",
destinationTextView.text.toString())
            intent.putExtra("carOwnerSeats", seatsTextView.text.toString())
            startActivity(intent)
        }
    }
}
```

Book a ride Code

```
package com.example.finalsemester

import android.content.Intent
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
import androidx.appcompat.app.AlertDialog
import androidx.appcompat.app.AppCompatActivity
import com.google.firebase.database.DataSnapshot
import com.google.firebase.database.DatabaseError
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
import com.google.firebase.database.ValueEventListener
import kotlinx.coroutines.Dispatchers
import kotlinx.coroutines.GlobalScope
import kotlinx.coroutines.launch
import java.util.Properties
import javax.mail.Authenticator
import javax.mail.Message
import javax.mail.PasswordAuthentication
import javax.mail.Session
import javax.mail.Transport
import javax.mail.internet.InternetAddress
import javax.mail.internet.MimeMessage

class RiderProfileSetupActivity : AppCompatActivity() {
    private lateinit var displayNameEditText: EditText
    private lateinit var phoneNumberEditText: EditText
    private lateinit var emailEditText: EditText
    private lateinit var dateEditText: EditText
    private lateinit var startLocationEditText: EditText
    private lateinit var destinationEditText: EditText
    private lateinit var currentLocationEditText: EditText
    private lateinit var requiredTimeEditText: EditText
    private lateinit var ridersRef: DatabaseReference
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_rider_profile_setup)
        displayNameEditText = findViewById(R.id.displayNameEditText)
        phoneNumberEditText = findViewById(R.id.phoneNumberEditText)
```

```
        emailEditText = findViewById(R.id.emailEditText)
        dateEditText = findViewById(R.id.dateEditText)
        startLocationEditText = findViewById(R.id.startLocationEditText)
        destinationEditText = findViewById(R.id.destinationEditText)
        currentLocationEditText = findViewById(R.id.currentLocationEditText)
        requiredTimeEditText = findViewById(R.id.requiredTimeEditText)
        val carOwnerName = intent.getStringExtra("carOwnerName") ?: ""
        val carOwnerCost = intent.getStringExtra("carOwnerCost") ?: ""
        val carOwnerPhoneNumber = intent.getStringExtra("carOwnerPhoneNumber") ?:
""
        val carOwnerEmail = intent.getStringExtra("carOwnerEmail") ?: ""
        val carOwnerCurrentLocation =
intent.getStringExtra("carOwnerCurrentLocation") ?: ""
        val carOwnerStartLocation = intent.getStringExtra("carOwnerSource") ?: ""
        val carOwnerDestination = intent.getStringExtra("carOwnerDestination") ?:
""
        val carOwnerSeats = intent.getStringExtra("carOwnerSeats") ?: ""
        val carOwnerDateTime = intent.getStringExtra("carOwnerDateTime") ?: ""
        ridersRef = FirebaseDatabase.getInstance().getReference("riders")
        findViewById<Button>(R.id.saveButton)?.setOnClickListener {
            saveRiderInformation()
        }
    }
    private fun saveRiderInformation() {
        val displayName = displayNameEditText.text.toString().trim()
        val phoneNumber = phoneNumberEditText.text.toString().trim()
        val email = emailEditText.text.toString().trim()
        val date = dateEditText.text.toString().trim()
        val startLocation = startLocationEditText.text.toString().trim()
        val destination = destinationEditText.text.toString().trim()
        val currentLocation = currentLocationEditText.text.toString().trim()
        val requiredTime = requiredTimeEditText.text.toString().trim()

        if (displayName.isEmpty() || phoneNumber.isEmpty() || email.isEmpty() ||
            date.isEmpty() || startLocation.isEmpty() || destination.isEmpty() ||
            currentLocation.isEmpty() || requiredTime.isEmpty()
        ) {
            Toast.makeText(this, "Please fill in all required fields",
Toast.LENGTH_SHORT).show()
            return
        }

        val riderInfo = mapOf(
            "displayName" to displayName,
            "phoneNumber" to phoneNumber,
            "email" to email,
            "date" to date,
            "startLocation" to startLocation,
            "destination" to destination,
            "currentLocation" to currentLocation,
            "requiredTime" to requiredTime
        )

        sendEmail(email, riderInfo)

        val riderId = ridersRef.push().key ?: ""
        ridersRef.child(riderId).setValue(riderInfo)
            .addOnSuccessListener {
                showConfirmationDialog(riderId)
            }
            .addOnFailureListener { e ->
                showToast("Error saving rider information: ${e.message}")
```

```
                clearEditTextFields()
            }
    }

    private fun showConfirmationDialog(riderId: String) {
        val carOwnerName = intent.getStringExtra("carOwnerName") ?: ""
        val carOwnerSeatsStr = intent.getStringExtra("carOwnerSeats") ?: "0"
        val carOwnerSeats = carOwnerSeatsStr.toIntOrNull() ?: 0

        val updatedSeats = carOwnerSeats - 1

        val displayName = displayNameEditText.text.toString().trim()
        val phoneNumber = phoneNumberEditText.text.toString().trim()
        val email = emailEditText.text.toString().trim()
        val date = dateEditText.text.toString().trim()
        val startLocation = startLocationEditText.text.toString().trim()
        val destination = destinationEditText.text.toString().trim()
        val currentLocation = currentLocationEditText.text.toString().trim()
        val requiredTime = requiredTimeEditText.text.toString().trim()

        if (updatedSeats < 0) {
            val dialogBuilder = AlertDialog.Builder(this)
            dialogBuilder.setMessage("No seats are available for this car.")
                .setTitle("Please try another car")
                .setCancelable(false)
                .setIcon(R.drawable.error)
                .setPositiveButton("OK") { dialog, _ ->
                    dialog.dismiss()
                    clearEditTextFields()
                }

            val alertDialog = dialogBuilder.create()
            alertDialog.show()
        } else {

            val dialogMessage = "\n\n" +
                    "Updated seats for this car: $updatedSeats\n\n" +
                    "Your Details:\n" +
                    "Name: $displayName\n" +
                    "Phone Number: $phoneNumber\n" +
                    "Email: $email\n" +
                    "Date: $date\n" +
                    "Start Location: $startLocation\n" +
                    "Destination: $destination\n" +
                    "Current Location: $currentLocation\n" +
                    "Time: $requiredTime\n" +
                    "Click on OK for verifying your phone number!!"

            val dialogBuilder = AlertDialog.Builder(this)
            dialogBuilder.setMessage(dialogMessage)
                .setTitle("Saved Riders Information successfully.\n")
                .setCancelable(false)
                .setIcon(R.drawable.tick1)
                .setPositiveButton("OK") { dialog, _ ->

                    val intent = Intent(this,
PhoneAuthenticationActivity::class.java)
                    intent.putExtra("displayName", displayName)
                    intent.putExtra("phoneNumber", phoneNumber)
                    startActivity(intent)

                    val carOwnersRef =
```

```
FirebaseDatabase.getInstance().getReference("car_owners")
                    val query =
carOwnersRef.orderByChild("name").equalTo(carOwnerName)

                    query.addListenerForSingleValueEvent(object :
ValueEventListener {
                        override fun onDataChange(snapshot: DataSnapshot) {
                            if (snapshot.exists()) {
                                for (carOwnerSnapshot in snapshot.children) {
                                    val carOwnerId = carOwnerSnapshot.key ?: ""
                                    val carOwnerRef =
carOwnersRef.child(carOwnerId)

carOwnerRef.child("seatsAvailable").setValue(updatedSeats.toString())
                                }
                            }
                            dialog.dismiss()

                        }
                        override fun onCancelled(error: DatabaseError) {
                            dialog.dismiss()
                            showToast("Failed to update seat count")
                        }
                    })
                }
                .setNegativeButton("Cancel") { dialog, _ ->
                    dialog.dismiss()
                    clearEditTextFields()
                }

            val alertDialog = dialogBuilder.create()
            alertDialog.show()
        }
    }
    private fun showToast(message: String) {
        Toast.makeText(this, message, Toast.LENGTH_SHORT).show()
    }
    private fun sendEmail(recipientEmail: String, userDetails: Map<String,
String>) {
        GlobalScope.launch(Dispatchers.IO) {
            try {
                val props = Properties()
                props["mail.smtp.host"] = "smtp.gmail.com"
                props["mail.smtp.port"] = "587"
                props["mail.smtp.auth"] = "true"
                props["mail.smtp.starttls.enable"] = "true"
                val session = Session.getInstance(props, object : Authenticator()
{
                    override fun getPasswordAuthentication():
PasswordAuthentication {
                        return
PasswordAuthentication("gopikrishnaguntamukkala3@gmail.com", "zpuebnvfffveyfou")
                    }
                })
                val message = MimeMessage(session)

message.setFrom(InternetAddress("gopikrishnaguntamukkala3@gmail.com"))
                message.addRecipient(Message.RecipientType.TO,
InternetAddress(recipientEmail))
                message.subject = "Successfully Booked a Ride"

                val messageBody = buildString {
```

```
                    append("Dear ${userDetails["displayName"]} ,\n\n")
                    append("Thank you for booking a ride and verifying your phone
number (it's mandatory).\n\n")
                    append("Your Details:\n")
                    append("Name: ${userDetails["displayName"]}\n")
                    append("Phone Number: ${userDetails["phoneNumber"]}\n")
                    append("Email: ${userDetails["email"]}\n")
                    append("Current Location:
${userDetails["currentLocation"]}\n")
                    append("Start Location: ${userDetails["startLocation"]}\n")
                    append("Destination: ${userDetails["destination"]}\n")
                    append("Date: ${userDetails["date"]}\n")
                    append("Required Time: ${userDetails["requiredTime"]}\n\n")
                    append("Best regards,\nG. Gopi Krishna\nFinal Year BTech
CSE\nLovely Professional University, India.\n\nMobile: 76590 46696\nEmail:
gopikrishnaguntamukkala3@gmail.com")
                }
                message.setText(messageBody)
                Transport.send(message)
                runOnUiThread {
                    Toast.makeText(this@RiderProfileSetupActivity, "Email sent
successfully", Toast.LENGTH_SHORT).show()
                }
            } catch (e: Exception) {
                e.printStackTrace()
                runOnUiThread {
                    Toast.makeText(this@RiderProfileSetupActivity, "Failed to
send email: ${e.message}", Toast.LENGTH_SHORT).show()
                }
            }
        }
    }
    private fun clearEditTextFields() {
        displayNameEditText.text.clear()
        phoneNumberEditText.text.clear()
        emailEditText.text.clear()
        dateEditText.text.clear()
        startLocationEditText.text.clear()
        destinationEditText.text.clear()
        currentLocationEditText.text.clear()
        requiredTimeEditText.text.clear()
    }
}
```

Near By Cars Code

```
package com.example.finalsemester

import android.Manifest
import android.content.pm.PackageManager
import android.graphics.Bitmap
import android.graphics.drawable.BitmapDrawable
import android.location.Geocoder
import android.os.Bundle
import androidx.appcompat.app.AppCompatActivity
import androidx.core.app.ActivityCompat
import androidx.core.content.ContextCompat
import androidx.core.graphics.drawable.RoundedBitmapDrawableFactory
import com.google.android.gms.location.FusedLocationProviderClient
import com.google.android.gms.location.LocationServices
```

```
import com.google.firebase.database.DataSnapshot
import com.google.firebase.database.DatabaseError
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
import com.google.firebase.database.ValueEventListener
import org.osmdroid.config.Configuration
import org.osmdroid.tileprovider.tilesource.TileSourceFactory
import org.osmdroid.util.GeoPoint
import org.osmdroid.views.MapView
import org.osmdroid.views.overlay.Marker
import org.osmdroid.views.overlay.mylocation.GpsMyLocationProvider
import org.osmdroid.views.overlay.mylocation.MyLocationNewOverlay
import java.io.IOException

class NearByCars : AppCompatActivity() {
    private lateinit var map: MapView
    private lateinit var fusedLocationClient: FusedLocationProviderClient
    private lateinit var database: DatabaseReference
    companion object {
        private const val REQUEST_LOCATION_PERMISSION = 1
    }
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_near_by_cars)
        Configuration.getInstance().load(this, getSharedPreferences("osmdroid",
MODE_PRIVATE))
        map = findViewById(R.id.map)
        map.setTileSource(TileSourceFactory.MAPNIK)
        map.setMultiTouchControls(true)
        val initialCenter = GeoPoint(31.5018, 75.5728)
        map.controller.setCenter(initialCenter)
        map.controller.setZoom(11.0)
        if (ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) == PackageManager.PERMISSION_GRANTED) {
            initializeMap()
        } else {
            ActivityCompat.requestPermissions(
                this,
                arrayOf(Manifest.permission.ACCESS_FINE_LOCATION),
                REQUEST_LOCATION_PERMISSION
            )
        }
        database = FirebaseDatabase.getInstance().reference.child("car_owners")
        retrieveCarOwnerInformation()
    }
    private fun initializeMap() {
        val locationOverlay = MyLocationNewOverlay(GpsMyLocationProvider(this),
map)
        locationOverlay.enableMyLocation()
        map.overlays.add(locationOverlay)
        fusedLocationClient =
LocationServices.getFusedLocationProviderClient(this)
        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) == PackageManager.PERMISSION_GRANTED) {
            fusedLocationClient.lastLocation
                .addOnSuccessListener { location ->
                    if (location != null) {
                        val geocoder = Geocoder(this)
                        try {
                            val addressList =
geocoder.getFromLocation(location.latitude, location.longitude, 1)
                            if (addressList != null && addressList.isNotEmpty())
```

```
{
                                val address = addressList[0]
                                val currentLocation = GeoPoint(location.latitude,
location.longitude)
                                addMarkerAtLocation(currentLocation, "My
Location", address.getAddressLine(0), true)
                            } else {
                                addDefaultMarker()
                            }
                        } catch (e: IOException) {
                            e.printStackTrace()
                            addDefaultMarker()
                        }
                    }
                }
            }
        }
    }
    private fun addDefaultMarker() {
        val defaultLocation = GeoPoint(31.2565, 75.6509)
        val marker = Marker(map)
        marker.position = defaultLocation
        marker.title = "Default Location"
        marker.snippet = "Lovely Professional University"
        marker.icon = ContextCompat.getDrawable(this, R.drawable.marker_red)
        map.overlays.add(marker)
    }
    private fun retrieveCarOwnerInformation() {
        database.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(dataSnapshot: DataSnapshot) {
                if (dataSnapshot.exists()) {
                    for (ownerSnapshot in dataSnapshot.children) {
                        val carOwner =
ownerSnapshot.getValue(CarOwner::class.java)
                        carOwner?.let {
                            val currentLocation = carOwner.currentLocation ?: ""
                            if (currentLocation.isNotBlank()) {
                                val geocoder = Geocoder(this@NearByCars)
                                try {
                                    val addressList =
geocoder.getFromLocationName(currentLocation, 1)
                                    if (addressList != null &&
addressList.isNotEmpty()) {
                                        val address = addressList[0]
                                        val carOwnerLocation =
GeoPoint(address.latitude, address.longitude)
                                        val snippet = "Current Location:
$currentLocation\n" +
                                                "Start Location:
${carOwner.startLocation ?: ""}\n" +
                                                "Destination:
${carOwner.destination ?: ""}"
                                        addMarkerAtLocation(carOwnerLocation,
carOwner.name ?: "", snippet, false)
                                    }
                                } catch (e: IOException) {
                                    e.printStackTrace()
                                }
                            }
                        }
                    }
                }
            }
```

```
            override fun onCancelled(databaseError: DatabaseError) {
            }
        })
    }
    private fun addMarkerAtLocation(location: GeoPoint, title: String, snippet:
String, isMyLocation: Boolean) {
        val marker = Marker(map)
        marker.position = location
        marker.title = title
        marker.snippet = snippet
        val markerDrawable = if (isMyLocation) {
            ContextCompat.getDrawable(this, R.drawable.round111)
        } else {
            ContextCompat.getDrawable(this, R.drawable.round1)
        }
        markerDrawable?.let {
            val width = resources.getDimension(R.dimen.marker_size).toInt()
            val height = resources.getDimension(R.dimen.marker_size).toInt()
            val resizedBitmap = Bitmap.createScaledBitmap((it as
BitmapDrawable).bitmap, width, height, false)
            val roundedBitmapDrawable =
RoundedBitmapDrawableFactory.create(resources, resizedBitmap)
            roundedBitmapDrawable.isCircular = true
            marker.icon = BitmapDrawable(resources, roundedBitmapDrawable.bitmap)
        }
        map.overlays.add(marker)
        marker.showInfoWindow()
    }
    override fun onRequestPermissionsResult(requestCode: Int, permissions:
Array<out String>, grantResults: IntArray) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults)
        if (requestCode == REQUEST_LOCATION_PERMISSION) {
            if (grantResults.isNotEmpty() && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
                initializeMap()
            } else {
            }
        }
    }
    override fun onResume() {
        super.onResume()
        map.onResume()
    }
    override fun onPause() {
        super.onPause()
        map.onPause()
    }
}
```

Search (for riders)

```
package com.example.finalsemester

import android.content.Intent
import android.net.Uri
import android.os.Bundle
import android.util.Log
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
```

```
import android.widget.Button
import android.widget.EditText
import android.widget.ImageView
import android.widget.TextView
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import androidx.recyclerview.widget.LinearLayoutManager
import androidx.recyclerview.widget.RecyclerView
import com.google.firebase.database.DataSnapshot
import com.google.firebase.database.DatabaseError
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
import com.google.firebase.database.Query
import com.google.firebase.database.ValueEventListener

class SearchCarsActivity : AppCompatActivity() {
    private lateinit var database: DatabaseReference
    private lateinit var adapter: CarOwnerAdapter
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_search_cars)
        database =
FirebaseDatabase.getInstance().getReference().child("car_owners")
        val recyclerView = findViewById<RecyclerView>(R.id.carOwnersRecyclerView)
        recyclerView.layoutManager = LinearLayoutManager(this)
        adapter = CarOwnerAdapter()
        recyclerView.adapter = adapter
        loadCarOwners()
        val editTextStartLocation =
findViewById<EditText>(R.id.editTextStartLocation)
        val editTextEndLocation =
findViewById<EditText>(R.id.editTextEndLocation)
        val buttonSearch = findViewById<Button>(R.id.buttonSearch)
        buttonSearch.setOnClickListener {
            val startLocation = editTextStartLocation.text.toString().trim()
            val endLocation = editTextEndLocation.text.toString().trim()
            if (startLocation.isEmpty() || endLocation.isEmpty()) {
                Toast.makeText(this@SearchCarsActivity, "Please enter both
locations", Toast.LENGTH_SHORT).show()
            } else {
                searchCarOwners(startLocation, endLocation)
            }
        }
        val imageViewSwap = findViewById<ImageView>(R.id.imageViewSwap)
        val imageClear = findViewById<ImageView>(R.id.imageClear)
        imageViewSwap.setOnClickListener {
            val startText = editTextStartLocation.text.toString()
            val endText = editTextEndLocation.text.toString()
            editTextStartLocation.setText(endText)
            editTextEndLocation.setText(startText)
        }

        imageClear.setOnClickListener {
            editTextStartLocation.setText("")
            editTextEndLocation.setText("")
        }
    }
    private fun searchCarOwners(startLocation: String, endLocation: String) {
        val query: Query =
database.orderByChild("startLocation").equalTo(startLocation)
        query.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(dataSnapshot: DataSnapshot) {
```

```
                val carOwnersList = mutableListOf<CarOwner>()
                for (ownerSnapshot in dataSnapshot.children) {
                    val carOwner = ownerSnapshot.getValue(CarOwner::class.java)
                    carOwner?.let {
                        if (it.destination == endLocation) {
                            carOwnersList.add(it)
                        }
                    }
                }
                if (carOwnersList.isNotEmpty()) {
                    adapter.setCarOwners(carOwnersList)
                } else {
                    Toast.makeText(
                        this@SearchCarsActivity,
                        "No car owners found for the specified locations",
                        Toast.LENGTH_SHORT
                    ).show()
                    loadCarOwners()
                }
            }
            override fun onCancelled(databaseError: DatabaseError) {
                Log.e(TAG, "Error searching car owners",
databaseError.toException())
                Toast.makeText(
                    this@SearchCarsActivity,
                    "Failed to search car owners",
                    Toast.LENGTH_SHORT
                ).show()
            }
        })
    }
    private fun loadCarOwners() {
        database.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(dataSnapshot: DataSnapshot) {
                if (dataSnapshot.exists()) {
                    val carOwnersList = mutableListOf<CarOwner>()
                    for (ownerSnapshot in dataSnapshot.children) {
                        val carOwner =
ownerSnapshot.getValue(CarOwner::class.java)
                        carOwner?.let {
                            carOwnersList.add(it)
                        }
                    }
                    adapter.setCarOwners(carOwnersList)
                } else {
                    Toast.makeText(
                        this@SearchCarsActivity,
                        "No car owners found",
                        Toast.LENGTH_SHORT
                    ).show()
                }
            }
            override fun onCancelled(databaseError: DatabaseError) {
                Log.e(TAG, "Error loading car owners",
databaseError.toException())
                Toast.makeText(
                    this@SearchCarsActivity,
                    "Failed to load car owners",
                    Toast.LENGTH_SHORT
                ).show()
            }
        })
```

```
    }
    companion object {
        private const val TAG = "SearchCarsActivity"
    }
    inner class CarOwnerAdapter :
RecyclerView.Adapter<CarOwnerAdapter.CarOwnerViewHolder>() {
        private var carOwners: List<CarOwner> = emptyList()
        override fun onCreateViewHolder(parent: ViewGroup, viewType: Int):
CarOwnerViewHolder {
            val itemView = LayoutInflater.from(parent.context)
                .inflate(R.layout.item_owner, parent, false)
            return CarOwnerViewHolder(itemView)
        }
        override fun onBindViewHolder(holder: CarOwnerViewHolder, position: Int)
{
            val currentCarOwner = carOwners[position]
            holder.bind(currentCarOwner)
        }
        override fun getItemCount(): Int {
            return carOwners.size
        }
        fun setCarOwners(newCarOwners: List<CarOwner>) {
            carOwners = newCarOwners
            notifyDataSetChanged()
        }
        inner class CarOwnerViewHolder(itemView: View) :
RecyclerView.ViewHolder(itemView) {
            private val nameTextView: TextView =
itemView.findViewById(R.id.card_name)
            private val costTextView: TextView = itemView.findViewById(R.id.cost)
            private val sourceTextView: TextView =
itemView.findViewById(R.id.card_source)
            private val destinationTextView: TextView =
itemView.findViewById(R.id.card_student_board)
            private val seatsTextView: TextView =
itemView.findViewById(R.id.card_seats)
            private val dateTimeTextView: TextView =
itemView.findViewById(R.id.card_date)
            private val currentLocationTextView: TextView =
itemView.findViewById(R.id.card_current_address)
            private val emailImageView: ImageView =
itemView.findViewById(R.id.card_email_button)
            private val phoneNumberImageView: ImageView =
itemView.findViewById(R.id.card_call_button)
            private val smsImageView: ImageView =
itemView.findViewById(R.id.card_sms_button)
            fun bind(carOwner: CarOwner) {
                nameTextView.text = carOwner.name
                costTextView.text = "Cost: ${carOwner.costPerRide}"
                sourceTextView.text = carOwner.startLocation
                destinationTextView.text = carOwner.destination
                seatsTextView.text = "${carOwner.seatsAvailable}"
                dateTimeTextView.text = "${carOwner.dateTime}"
                currentLocationTextView.text = "Current Location:
${carOwner.currentLocation}"
                emailImageView.setOnClickListener {
                    val intent = Intent(Intent.ACTION_SEND).apply {
                        type = "message/rfc822"
                        putExtra(Intent.EXTRA_EMAIL, arrayOf(carOwner.email))
                        putExtra(Intent.EXTRA_SUBJECT, "Query regarding booking a
ride")
                        putExtra(Intent.EXTRA_TEXT, "Hi I would like to tell
```

```
something about ride... continue")
                    }
                    itemView.context.startActivity(Intent.createChooser(intent,
"Send Email"))
                }
                phoneNumberImageView.setOnClickListener {
                    val intent = Intent(Intent.ACTION_DIAL).apply {
                        data = Uri.parse("tel:${carOwner.phoneNumber}")
                    }
                    itemView.context.startActivity(intent)
                }
                smsImageView.setOnClickListener {
                    val intent = Intent(Intent.ACTION_SENDTO).apply {
                        data = Uri.parse("smsto:${carOwner.phoneNumber}")
                    }
                    itemView.context.startActivity(intent)
                }
                nameTextView.setOnClickListener {
                    val intent = Intent(itemView.context,
CarOwnerProfileDetails::class.java)
                    intent.putExtra("carOwnerName", carOwner.name)
                    intent.putExtra("carOwnerCost", carOwner.costPerRide)
                    intent.putExtra("carOwnerSource", carOwner.startLocation)
                    intent.putExtra("carOwnerDestination", carOwner.destination)
                    intent.putExtra("carOwnerSeats", carOwner.seatsAvailable)
                    intent.putExtra("carOwnerDateTime", carOwner.dateTime)
                    intent.putExtra("carOwnerCurrentLocation",
carOwner.currentLocation)
                    intent.putExtra("carOwnerEmail", carOwner.email)
                    intent.putExtra("carOwnerPhoneNumber", carOwner.phoneNumber)
                    itemView.context.startActivity(intent)
                }

            }
        }
    }
}
```

Edit Profile Activity

```
package com.example.finalsemester

import android.app.Activity
import android.content.Intent
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase

class EditProfileActivity : AppCompatActivity() {
    private lateinit var editName: EditText
    private lateinit var editEmail: EditText
    private lateinit var editUsername: EditText
    private lateinit var editPassword: EditText
    private lateinit var saveButton1: Button
    private lateinit var nameUser: String
    private lateinit var emailUser: String
    private lateinit var usernameUser: String
    private lateinit var passwordUser: String
```

```
    private lateinit var reference: DatabaseReference
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_edit_profile)
        reference = FirebaseDatabase.getInstance().getReference("users")
        editName = findViewById(R.id.editName)
        editEmail = findViewById(R.id.editEmail)
        editUsername = findViewById(R.id.editUsername)
        editPassword = findViewById(R.id.editPassword)
        saveButton1 = findViewById(R.id.saveButton)
        val userDetails = intent.getSerializableExtra("userDetails") as
HashMap<String, String>
        nameUser = userDetails["name"].toString()
        emailUser = userDetails["email"].toString()
        usernameUser = userDetails["username"].toString()
        passwordUser = userDetails["password"].toString()
        editName.setText(nameUser)
        editEmail.setText(emailUser)
        editUsername.setText(usernameUser)
        editPassword.setText(passwordUser)

        saveButton1.setOnClickListener {
            saveChanges()
        }
    }
    private fun saveChanges() {
        if (isNameChanged() || isEmailChanged() || isPasswordChanged()) {
            Toast.makeText(this, "Saved", Toast.LENGTH_SHORT).show()
            val updatedUserDetails = HashMap<String, String>().apply {
                put("name", editName.text.toString())
                put("email", editEmail.text.toString())
                put("username", editUsername.text.toString())
                put("password", editPassword.text.toString())
            }
            val resultIntent = Intent()
            resultIntent.putExtra("updatedUserDetails", updatedUserDetails)
            setResult(Activity.RESULT_OK, resultIntent)
        } else {
            Toast.makeText(this, "No Changes Found", Toast.LENGTH_SHORT).show()
        }
        finish()
    }
    private fun isNameChanged(): Boolean {
        val newName = editName.text.toString()
        return if (newName != nameUser) {
            reference.child(usernameUser).child("name").setValue(newName)
            true
        } else {
            false
        }
    }
    private fun isEmailChanged(): Boolean {
        val newEmail = editEmail.text.toString()
        return if (newEmail != emailUser) {
            reference.child(usernameUser).child("email").setValue(newEmail)
            true
        } else {
            false
        }
    }
    private fun isPasswordChanged(): Boolean {
        val newPassword = editPassword.text.toString()
```

```
        return if (newPassword != passwordUser) {
            reference.child(usernameUser).child("password").setValue(newPassword)
            true
        } else {
            false
        }
    }
}
```

Rating Star Activity

```
package com.example.finalsemester

import android.annotation.SuppressLint
import android.app.NotificationChannel
import android.app.NotificationManager
import android.content.ContentValues.TAG
import android.os.Build
import android.os.Bundle
import android.provider.Settings
import android.util.Log
import android.widget.*
import androidx.appcompat.app.AppCompatActivity
import androidx.core.app.NotificationCompat
import androidx.core.app.NotificationManagerCompat
import com.google.firebase.database.*

class RatingStarActivity : AppCompatActivity() {
    private val CHANNEL_ID = "Channel_id_example_1"
    private val notificationid = 101
    private lateinit var starsContainer: LinearLayout
    private lateinit var database: DatabaseReference
    private lateinit var deviceId: String
    @SuppressLint("MissingInflatedId")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_rating_star)
        database = FirebaseDatabase.getInstance().reference
        deviceId = Settings.Secure.getString(contentResolver,
Settings.Secure.ANDROID_ID)
        createNotificationChannel()
        val rt: RatingBar = findViewById(R.id.ratingBar)
        val submit: Button = findViewById(R.id.button)
        val emoji: ImageView = findViewById(R.id.emoji)
        starsContainer = findViewById(R.id.starsContainer)
        fetchAndDisplayStarRatings()
        val ratingRef = database.child("ratings").child(deviceId)
        ratingRef.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(snapshot: DataSnapshot) {
                if (snapshot.exists()) {
                    val previousRating = snapshot.getValue(Float::class.java)
                    previousRating?.let {
                        rt.rating = it
                    }
                }
            }
            override fun onCancelled(error: DatabaseError) {
                Log.e(TAG, "Database error: ${error.message}")
            }
```

```
        })
        rt.onRatingBarChangeListener = RatingBar.OnRatingBarChangeListener { _,
_, _ ->
            val rate = rt.rating
            when {
                rate <= 1 -> emoji.setImageResource(R.drawable.sad)
                rate <= 2 -> emoji.setImageResource(R.drawable.worried)
                rate <= 3 -> emoji.setImageResource(R.drawable.nuetral)
                rate <= 4 -> emoji.setImageResource(R.drawable.happy)
                else -> emoji.setImageResource(R.drawable.sattisfied)
            }
            submit.setOnClickListener {
                Toast.makeText(this@RatingStarActivity, "Selected Rating: $rate",
Toast.LENGTH_SHORT).show()
                sendNotification(rate)
            }
        }
    }
    private fun createNotificationChannel() {
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
            val name = "Channel Name"
            val descriptionText = "Channel Description"
            val importance = NotificationManager.IMPORTANCE_DEFAULT
            val channel = NotificationChannel(CHANNEL_ID, name, importance).apply
{
                description = descriptionText
            }
            val notificationManager =
getSystemService(NotificationManager::class.java)
            notificationManager.createNotificationChannel(channel)
        }
    }
    private fun sendNotification(rating: Float) {
        val builder = NotificationCompat.Builder(this, CHANNEL_ID)
            .setSmallIcon(R.drawable.notification)
            .setContentTitle("Notification")
            .setContentText("You have successfully given a rating for this app.
Your rating: $rating")
            .setPriority(NotificationCompat.PRIORITY_DEFAULT)
        try {
            val notificationManager = NotificationManagerCompat.from(this)
            notificationManager.notify(notificationid, builder.build())
        } catch (e: SecurityException) {
            Log.e(TAG, "Failed to send notification: ${e.message}", e)
            Toast.makeText(this@RatingStarActivity, "Failed to send
notification", Toast.LENGTH_SHORT).show()
        }
        val database = FirebaseDatabase.getInstance()
        val ratingRef = database.reference.child("ratings").child(deviceId)
        ratingRef.setValue(rating)
            .addOnSuccessListener {
                Log.d(TAG, "Rating stored successfully: $rating")
            }
            .addOnFailureListener { e ->
                Log.e(TAG, "Error storing rating: $rating", e)
            }
    }
    private fun fetchAndDisplayStarRatings() {
        val ratingsRef = database.child("ratings")
        ratingsRef.addListenerForSingleValueEvent(object : ValueEventListener {
            override fun onDataChange(snapshot: DataSnapshot) {
                val ratingCounts = mutableMapOf<Int, Int>()
```

```
                for (ratingSnapshot in snapshot.children) {
                    val rating = ratingSnapshot.getValue(Float::class.java)
                    rating?.let {
                        val starCount = it.toInt()
                        if (starCount in 1..5) {
                            if (ratingCounts.containsKey(starCount)) {
                                ratingCounts[starCount] =
ratingCounts[starCount]!! + 1
                            } else {
                                ratingCounts[starCount] = 1
                            }
                        }
                    }
                }
                displayStarRatingCounts(ratingCounts)
            }
            override fun onCancelled(error: DatabaseError) {
                Toast.makeText(this@RatingStarActivity, "Database error:
${error.message}", Toast.LENGTH_SHORT).show()
            }
        })
    }
    private fun displayStarRatingCounts(ratingCounts: Map<Int, Int>) {
        starsContainer.removeAllViews()
        val maxStars = 5
        val starSymbols = listOf("★★★★★", "★★★★", "★★★", "★★", "★")
        var totalUsers = 0
        var totalRating = 0
        for (star in maxStars downTo 1) {
            val count = ratingCounts[star] ?: 0
            totalUsers += count
            totalRating += star * count
            val starRatingText = "$star ${starSymbols[maxStars - star]} - $count
users"
            val textView = TextView(this@RatingStarActivity)
            textView.text = starRatingText
            textView.textSize = 18f
            textView.setPadding(8, 8, 8, 8)
            starsContainer.addView(textView)
        }
        val averageRating = if (totalUsers > 0) {
            totalRating.toFloat() / totalUsers
        } else {
            0f
        }
        val averageRatingText = "Average Rating: ${String.format("%.1f",
averageRating)} ★"
        val averageTextView = TextView(this@RatingStarActivity)
        averageTextView.text = averageRatingText
        averageTextView.textSize = 18f
        averageTextView.setPadding(8, 16, 8, 8)
        starsContainer.addView(averageTextView)
    }
}
```

Feedback Form Activity

```
package com.example.finalsemester
import android.app.AlertDialog
```

```
import android.app.DatePickerDialog
import android.app.TimePickerDialog
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import com.google.firebase.database.DatabaseReference
import com.google.firebase.database.FirebaseDatabase
import java.text.SimpleDateFormat
import java.util.Calendar
import java.util.Locale
class FeedbackForm : AppCompatActivity() {
    private lateinit var editTextName: EditText
    private lateinit var editTextPhone: EditText
    private lateinit var editTextQuery: EditText
    private lateinit var editTextEmail: EditText
    private lateinit var btnSubmit: Button
    private lateinit var btnSelectDate: Button
    private lateinit var btnSelectTime: Button
    private lateinit var databaseReference: DatabaseReference
    private var selectedDate: String? = null
    private var selectedTime: String? = null
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_feedback_form)
        editTextName = findViewById(R.id.editTextName)
        editTextPhone = findViewById(R.id.editTextPhone)
        editTextQuery = findViewById(R.id.editTextQuery)
        editTextEmail = findViewById(R.id.editTextEmail)
        btnSubmit = findViewById(R.id.btnSubmit)
        btnSelectDate = findViewById(R.id.btnSelectDate)
        btnSelectTime = findViewById(R.id.btnSelectTime)
        databaseReference =
FirebaseDatabase.getInstance().reference.child("contactInfo")
        btnSubmit.setOnClickListener {
            onSubmitClick()
        }
        btnSelectDate.setOnClickListener {
            showDatePicker()
        }
        btnSelectTime.setOnClickListener {
            showTimePicker()
        }
        val resetBtn: Button = findViewById(R.id.btnReset)
        resetBtn.setOnClickListener {
            clearFields()
        }
    }
    private fun onSubmitClick() {
        val name = editTextName.text.toString().trim()
        val phone = editTextPhone.text.toString().trim()
        val query = editTextQuery.text.toString().trim()
        val email = editTextEmail.text.toString().trim()
        if (name.isEmpty() || phone.isEmpty() || query.isEmpty() ||
email.isEmpty()) {
            Toast.makeText(this, "Please fill in all the fields",
Toast.LENGTH_SHORT).show()
            return
        }
        if (!isValidEmail(email)) {
            Toast.makeText(this, "Please enter a valid email address",
```

```
Toast.LENGTH_SHORT).show()
            return
        }
        if (selectedDate.isNullOrEmpty() || selectedTime.isNullOrEmpty()) {
            Toast.makeText(this, "Please select date and time",
Toast.LENGTH_SHORT).show()
            return
        }
        val contactInfo = ContactInfo(name, phone, email, query)
        val alertDialogBuilder = AlertDialog.Builder(this)
        alertDialogBuilder.setTitle("Success")
            .setIcon(R.drawable.tick)
            .setMessage(
                "Name: $name\n" +
                        "Phone: $phone\n" +
                        "Email: $email\n" +
                        "Query: $query\n" +
                        "Date: $selectedDate\n" +
                        "Time: $selectedTime"
            )
            .setPositiveButton("OK") { dialog, which ->
                dialog.dismiss()
            }
            .create()
            .show()
        saveFeedback(contactInfo)
    }
    private fun isValidEmail(email: String): Boolean {
        return android.util.Patterns.EMAIL_ADDRESS.matcher(email).matches()
    }
    private fun showDatePicker() {
        val calendar = Calendar.getInstance()
        val datePickerDialog = DatePickerDialog(
            this,
            { _, year, month, dayOfMonth ->
                val selectedCalendar = Calendar.getInstance()
                selectedCalendar.set(year, month, dayOfMonth)
                val dateFormat = SimpleDateFormat("dd/MM/yyyy",
Locale.getDefault())
                selectedDate = dateFormat.format(selectedCalendar.time)
            },
            calendar.get(Calendar.YEAR),
            calendar.get(Calendar.MONTH),
            calendar.get(Calendar.DAY_OF_MONTH)
        )
        datePickerDialog.show()
    }
    private fun showTimePicker() {
        val calendar = Calendar.getInstance()
        val timePickerDialog = TimePickerDialog(
            this,
            { _, hourOfDay, minute ->
                val selectedCalendar = Calendar.getInstance()
                selectedCalendar.set(Calendar.HOUR_OF_DAY, hourOfDay)
                selectedCalendar.set(Calendar.MINUTE, minute)
                val timeFormat = SimpleDateFormat("hh:mm a", Locale.getDefault())
                selectedTime = timeFormat.format(selectedCalendar.time)
            },
            calendar.get(Calendar.HOUR_OF_DAY),
            calendar.get(Calendar.MINUTE),
            false
        )
```

```
        timePickerDialog.show()
    }
    private fun saveFeedback(contactInfo: ContactInfo) {
        val submissionKey = databaseReference.push().key
        if (submissionKey != null) {
            contactInfo.date = selectedDate ?: ""
            contactInfo.time = selectedTime ?: ""
            databaseReference.child(submissionKey).setValue(contactInfo)
                .addOnSuccessListener {
                    Toast.makeText(this, "Successfully submitted your query",
Toast.LENGTH_SHORT).show()
                }
                .addOnFailureListener {
                    Toast.makeText(this, "Failed to submit your query",
Toast.LENGTH_SHORT).show()
                }
        }
    }
    private fun clearFields() {
        editTextName.text.clear()
        editTextPhone.text.clear()
        editTextQuery.text.clear()
        editTextEmail.text.clear()
        selectedDate = null
        selectedTime = null
    }
}
```

FAQ Activity

```
package com.example.finalsemester

import android.os.Bundle
import android.view.View
import android.widget.LinearLayout
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity

class FAQActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_faqactivity)
        populateFAQ()
    }
    private fun populateFAQ() {
        val question1Layout = findViewById<LinearLayout>(R.id.question1Layout)
        val question1 = findViewById<TextView>(R.id.question1)
        val answer1 = findViewById<TextView>(R.id.answer1)
        question1.text = "Q: What is Car Pooling App?"
        answer1.text = "A: User can choose the rider or car owner based on their
needs in this app after login ."
        val question2Layout = findViewById<LinearLayout>(R.id.question2Layout)
        val question2 = findViewById<TextView>(R.id.question2)
        val answer2 = findViewById<TextView>(R.id.answer2)
        question2.text = "Q: Why to use this carpooling app?"
        answer2.text = "A: This app provides options for both car owners and
riders. Car owners can create rides, and riders can book available rides."
        val question3Layout = findViewById<LinearLayout>(R.id.question3Layout)
        val question3 = findViewById<TextView>(R.id.question3)
```

```
        val answer3 = findViewById<TextView>(R.id.answer3)
        question3.text = "Q: How to book a ride in this app?"
        answer3.text = "A: Users can book a ride by visiting the car owner's
profile and selecting an available ride. After selecting a ride, a confirmation
will be sent to the user's email."
        val question4Layout = findViewById<LinearLayout>(R.id.question4Layout)
        val question4 = findViewById<TextView>(R.id.question4)
        val answer4 = findViewById<TextView>(R.id.answer4)
        question4.text = "Q: What are the featues in this app?"
        answer4.text = "A:\n" +
                "- Wifi Check\n" +
                "- Sign In\n" +
                "- Sign Up\n" +
                "- Feedback Form\n" +
                "- Rating Bar\n" +
                "- Offer rides\n" +
                "- Book Rides\n" +
                "- Nearby Cars and Riders\n" +
                "- View and Update profile\n" +
                "- Wifi Information\n" +
                "- Proximity Sensor Alert \n" +
                "- Share the app code\n" +
                "- Log out\n"
        val question5Layout = findViewById<LinearLayout>(R.id.question5Layout)
        val question5 = findViewById<TextView>(R.id.question5)
        val answer5 =  findViewById<TextView>(R.id.answer5)
        question5.text = "Q: What safety features are included in this app?"
        answer5.text = "A: Users must verify their phone number to create or book
a ride in the carpooling app."
        val question6Layout = findViewById<LinearLayout>(R.id.question6Layout)
        val question6 = findViewById<TextView>(R.id.question6)
        val answer6 =  findViewById<TextView>(R.id.answer6)
        question6.text = "Q: Where are user ratings stored?"
        answer6.text = "A: User ratings are stored in Realtime Firebase. Users
can view all user ratings at the end of this activity and find the average rating
for this car pooling app."
        question1Layout.tag = answer1
        question2Layout.tag = answer2
        question3Layout.tag = answer3
        question4Layout.tag = answer4
        question5Layout.tag = answer5
        question6Layout.tag = answer6
    }
    fun toggleAnswer(view: View) {
        val answerView = view.tag as? View
        answerView?.let {
            if (it.visibility == View.VISIBLE) {
                it.visibility = View.GONE
            } else {
                it.visibility = View.VISIBLE
            }
        }
    }
}
```

Wifi Info Demo Activity

```
package com.example.finalsemester
```

```
import android.annotation.SuppressLint
import android.content.Context
import android.net.wifi.WifiManager
import android.os.Bundle
import android.text.format.Formatter
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity

class WifiInfoDemo : AppCompatActivity() {
    @SuppressLint("MissingInflatedId")
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_wifi_info_demo)
        val wifiInformationTv: TextView = findViewById(R.id.textViewWifi)
        val wifiManager =
applicationContext.getSystemService(Context.WIFI_SERVICE) as WifiManager
        val wInfo = wifiManager.connectionInfo
        val ipaddress = Formatter.formatIpAddress(wInfo.ipAddress)
        val linkSpeed = wInfo.linkSpeed
        val networkID = wInfo.networkId
        val ssid      = wInfo.ssid
        val hssid     = wInfo.hiddenSSID
        val bssid     = wInfo.bssid
        wifiInformationTv.text = "IP Address : \t$ipaddress\n"+
                "Link Speed : \t$linkSpeed\n"+
                "Network ID : \t$networkID\n"+
                "SSID : \t$ssid\n"+
                "Hidden SSID: \t$hssid\n"+
                "BSSID : \t$bssid\n"
    }
}
```

Text To Speech Activity

```
package com.example.finalsemester
import android.os.Bundle
import android.speech.tts.TextToSpeech
import android.util.Log
import android.widget.ArrayAdapter
import android.widget.Button
import android.widget.EditText
import android.widget.ImageView
import android.widget.Spinner
import androidx.appcompat.app.AppCompatActivity
import java.util.Locale
class TextToSpeechActivity : AppCompatActivity(), TextToSpeech.OnInitListener {
    private lateinit var tts: TextToSpeech
    private lateinit var editText: EditText
    private lateinit var spinnerLanguages: Spinner
    private lateinit var btnTranslate: Button
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_text_to_speech)
        tts = TextToSpeech(this, this)
        editText = findViewById(R.id.editText)
        spinnerLanguages = findViewById(R.id.spinnerLanguages)
        btnTranslate = findViewById(R.id.btnTranslate)
        val imageClear:ImageView = findViewById(R.id.imageClear)
        imageClear.setOnClickListener {
```

```
            editText.setText("")
        }
        val languages = listOf("Select Language","English (US)", "English (UK)",
"French", "German", "Italian")
        val adapter = ArrayAdapter(this, android.R.layout.simple_spinner_item,
languages)

adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item)
        spinnerLanguages.adapter = adapter
        btnTranslate.setOnClickListener {
            val selectedLanguage = spinnerLanguages.selectedItem.toString()
            val textToSpeak = editText.text.toString()
            translateAndSpeak(textToSpeak, selectedLanguage)
        }
    }
    override fun onInit(status: Int) {
        if (status == TextToSpeech.SUCCESS) {

        } else {
            Log.e("TTS", "TextToSpeech initialization failed.")
        }
    }
    private fun translateAndSpeak(text: String, language: String) {
        val locale = when (language) {
            "English (US)" -> Locale.US
            "English (UK)" -> Locale.UK
            "French" -> Locale.FRANCE
            "German" -> Locale.GERMANY
            "Italian" -> Locale.ITALY
            "Arabic" -> Locale("ar", "SA")
            else -> Locale.US
        }
        val result = tts.setLanguage(locale)
        if (result == TextToSpeech.LANG_MISSING_DATA || result ==
TextToSpeech.LANG_NOT_SUPPORTED) {
            Log.e("TTS", "The language $language is not supported.")
        } else {
            tts.speak(text, TextToSpeech.QUEUE_FLUSH, null, null)
        }
    }
    override fun onDestroy() {
        super.onDestroy()
        tts.stop()
        tts.shutdown()
    }
}
```

Speech To Text Activity

```
package com.example.finalsemester
import android.content.Intent
import android.os.Bundle
import android.speech.RecognizerIntent
import android.widget.ImageView
import android.widget.TextView
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
import java.util.Locale
class SpeechToTextActivity : AppCompatActivity() {
```

```
    private lateinit var outputTV: TextView
    private lateinit var micIV: ImageView
    private val REQUEST_CODE_SPEECH_INPUT = 1
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_speech_to_text)
        outputTV = findViewById(R.id.idTVOutput)
        micIV = findViewById(R.id.idIVMic)
        micIV.setOnClickListener {
            val intent = Intent(RecognizerIntent.ACTION_RECOGNIZE_SPEECH)
            intent.putExtra(
                RecognizerIntent.EXTRA_LANGUAGE_MODEL,
                RecognizerIntent.LANGUAGE_MODEL_FREE_FORM
            )
            intent.putExtra(
                RecognizerIntent.EXTRA_LANGUAGE,
                Locale.getDefault()
            )
            intent.putExtra(RecognizerIntent.EXTRA_PROMPT, "Speak to text")
            try {
                startActivityForResult(intent, REQUEST_CODE_SPEECH_INPUT)
            } catch (e: Exception) {
                Toast.makeText(this@SpeechToTextActivity, "Error: ${e.message}",
Toast.LENGTH_SHORT).show()
            }
        }
    }
    override fun onActivityResult(requestCode: Int, resultCode: Int, data:
Intent?) {
        super.onActivityResult(requestCode, resultCode, data)
        if (requestCode == REQUEST_CODE_SPEECH_INPUT) {
            if (resultCode == RESULT_OK && data != null) {
                val results: ArrayList<String>? =
data.getStringArrayListExtra(RecognizerIntent.EXTRA_RESULTS)
                if (results != null && results.isNotEmpty()) {
                    val inputText = results[0]
                    outputTV.text = inputText
                } else {
                    outputTV.text = "No speech input detected"
                }
            }
        }
    }
}
```

Share the App Activity

```
package com.example.finalsemester
import android.content.Intent
import android.os.Bundle
import android.webkit.WebView
import android.webkit.WebViewClient
import android.widget.Button
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
class ShareTheApp : AppCompatActivity() {
    private lateinit var webView: WebView
    private lateinit var shareapp: Button
    override fun onCreate(savedInstanceState: Bundle?) {
```

```
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_share_the_app)
        webView = findViewById(R.id.webView)
        shareapp = findViewById(R.id.shareapp)
        webView.webViewClient = WebViewClient()
        webView.loadUrl("https://github.com/gopi76/Car-Pooling-App")
        webView.settings.javaScriptEnabled = true
        webView.settings.setSupportZoom(true)
        shareapp.setOnClickListener {
            val intent = Intent().apply {
                action = Intent.ACTION_SEND
                putExtra(Intent.EXTRA_TEXT, "https://github.com/gopi76/Car-
Pooling-App/blob/main/app-debug.apk")
                type = "text/plain"
            }
            if (intent.resolveActivity(packageManager) != null) {
                startActivity(Intent.createChooser(intent, "Share via"))
            } else {
                Toast.makeText(
                    this,
                    "No app can handle this action",
                    Toast.LENGTH_SHORT
                ).show()
            }
        }
    }
    override fun onBackPressed() {
        if (webView.canGoBack()) {
            webView.goBack()
        } else {
            super.onBackPressed()
        }
    }
}
```

App Admin Information Activity

```
package com.example.finalsemester
import android.content.Intent
import android.net.Uri
import android.os.Bundle
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity
import com.google.android.material.floatingactionbutton.FloatingActionButton
class AppAdminInformationActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_app_admin_information)
        val nameTextView = findViewById<TextView>(R.id.nameTextView)
        val aboutTextView = findViewById<TextView>(R.id.aboutTextView)
        val aboutTextView2 = findViewById<TextView>(R.id.aboutTextView2)
        val portfolioLinkTextView =
findViewById<TextView>(R.id.portfolioLinkTextView)
        val callFab = findViewById<FloatingActionButton>(R.id.callFab)
        val messageFab = findViewById<FloatingActionButton>(R.id.messageFab)
        val emailFab = findViewById<FloatingActionButton>(R.id.emailFab)
        nameTextView.text = "G. Gopi Krishna"
        aboutTextView.text = "App Creator Info"
        aboutTextView2.text = """
```

```
    👋 Hi, I’m Gopi Krishna from Guntur, Andhra Pradesh.

    💬 I'm currently pursuing a degree in Computer Science and Engineering at
Lovely Professional University (Punjab), India.

    🧑‍💻 My technical skills include proficiency in C, C++, Java, Python, and I
have a basic knowledge of Kotlin. I'm also familiar with front-end languages such
as HTML, CSS, and JavaScript.

    📝 I have published peer-reviewed term papers with a high impact factor in
reputable journals like IJAENT and IJSCE.

    🏆 Participated in various coding contests, achieving a notable Global rank
of 713 on Codechef.

    🎗️ In terms of leadership, I have participated in GDSC-LPU as a part of the
A.I/ML team member, where I assisted machine learning in simpler methods while
mentoring the mentee and explored different concepts of ML.


    If you encounter any issues with applications or need assistance, please feel
free to contact me.
""".trimIndent()
        portfolioLinkTextView.setOnClickListener {
            val portfolioUrl = "https://gopi76.github.io/Portfolio.github.io/"
            openUrl(portfolioUrl)
        }
        callFab.setOnClickListener {
            val intent = Intent(Intent.ACTION_DIAL)
            intent.data = Uri.parse("tel:+917659046696")
            startActivity(intent)
        }
        messageFab.setOnClickListener {
            val intent = Intent(Intent.ACTION_SENDTO)
            intent.data = Uri.parse("smsto:+917659046696")
            startActivity(intent)
        }
        emailFab.setOnClickListener {
            val intent = Intent(Intent.ACTION_SENDTO)
            intent.data = Uri.parse("mailto:gopikrishnaguntamukkala3@gmail.com")
            startActivity(intent)
        }
    }
    private fun openUrl(url: String) {
        val intent = Intent(Intent.ACTION_VIEW, Uri.parse(url))
        startActivity(intent)
    }
}
```

----------The End----------