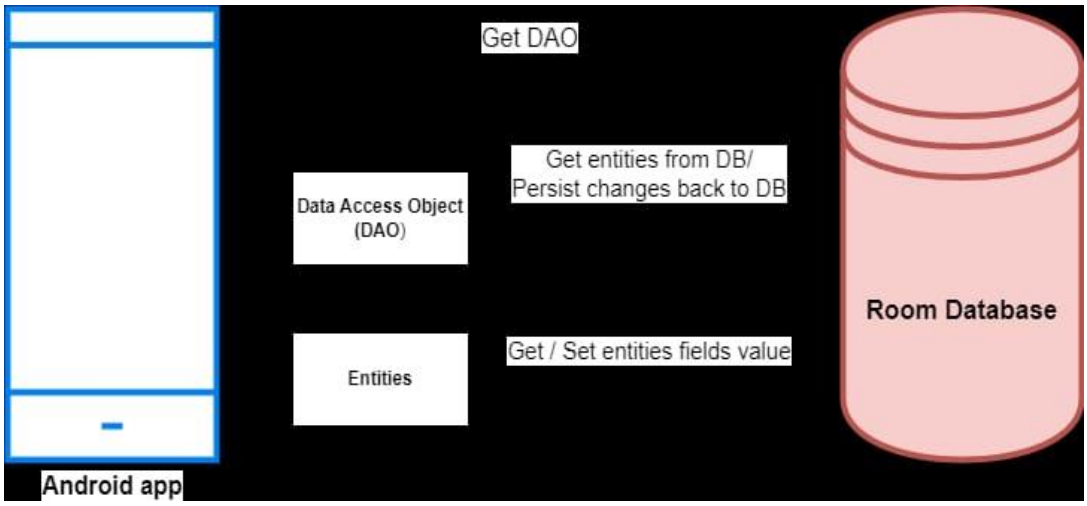
OWL-M: A MATERIAL DESIGN STUDY APP

Projrct Description: …….

A Project that demonstrates the use of Android Jetpack Compose to build a UI for a Owl-M:a material design study app.Owl-M app is a sample project built using the Android Compose UI toolkit.A compose implementation of the Owl material study.



Learning outcome :

By end of this project :

- You'll be able to work on Android studio and build an app.
- You'll be able to integrate the datebase accordingly.

Project workflow:

- user register into the application.
- After registration, user logins into the application
- User enters into the main page
- User can view the subject themes on selecting theme he can read about it.

To complete the project we need to finish the below tasks:

1. Required initial steps
2. Creating a new project
3. Adding required dependencies.
4. Creating the database classes
5. Building application UI and connecting to database

6. Using Android Manifest.Xml
7. Running the application.

1.Required initial steps:

This milestone explains about Required initial Steps

https://developer.android.com/studio/install

2.Creating A New Project:

Creating a new project

Step 1 :

Android studio >File > New > New project >Empty Compose Activity

Step2:

Click on Next button

Step3:

Give name to the new project.

Step4:

Give the Minimum SDK value

Step5:

Click Finish

Main activity file:

```
package com.example.myapplication

import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.layout.fillMaxSize
import androidx.compose.material.MaterialTheme
import androidx.compose.material.Surface
import androidx.compose.material.Text
```

```
import androidx.compose.runtime.Composable
import androidx.compose.ui.Modifier
import androidx.compose.ui.tooling.preview.Preview
import com.example.myapplication.ui.theme.MyApplicationTheme

class MainActivity : ComponentActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContent {
            MyApplicationTheme {
                // A surface container using the 'background' color from the
theme
                Surface(
                    modifier = Modifier.fillMaxSize(),
                    color = MaterialTheme.colors.background
                ) {
                    Greeting("Android")
                }
            }
        }
    }
}

@Composable
fun Greeting(name: String) {
    Text(text = "Hello $name!")
}

@Preview(showBackground = true)
@Composable
fun DefaultPreview() {
    MyApplicationTheme {
        Greeting("Android")
```

```
    }
}
```

3.Required Dependencies:

This milestone explains about adding required depenencies

1.Gradle Script >Build.Geadle(Module:App)

```
plugins {
    id 'com.android.application'
    id 'org.jetbrains.kotlin.android'
}

android {
    namespace 'com.example.myapplication'
    compileSdk 33

    defaultConfig {
        applicationId "com.example.myapplication"
        minSdk 24
        targetSdk 33
        versionCode 1
        versionName "1.0"

        testInstrumentationRunner
"androidx.test.runner.AndroidJUnitRunner"
        vectorDrawables {
            useSupportLibrary true
        }
    }

    buildTypes {
        release {
```

```
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-
optimize.txt'), 'proguard-rules.pro'
        }
    }
    compileOptions {
        sourceCompatibility JavaVersion.VERSION_1_8
        targetCompatibility JavaVersion.VERSION_1_8
    }
    kotlinOptions {
        jvmTarget = '1.8'
    }
    buildFeatures {
        compose true
    }
    composeOptions {
        kotlinCompilerExtensionVersion '1.2.0'
    }
    packagingOptions {
        resources {
            excludes += '/META-INF/{AL2.0,LGPL2.1}'
        }
    }
}

dependencies {

    implementation 'androidx.core:core-ktx:1.7.0'
    implementation 'androidx.lifecycle:lifecycle-runtime-ktx:2.3.1'
    implementation 'androidx.activity:activity-compose:1.3.1'
    implementation "androidx.compose.ui:ui:$compose_ui_version"
    implementation "androidx.compose.ui:ui-tooling-
preview:$compose_ui_version"
```

```
    implementation 'androidx.compose.material:material:1.2.0'
    testImplementation 'junit:junit:4.13.2'
    androidTestImplementation 'androidx.test.ext:junit:1.1.3'
    androidTestImplementation 'androidx.test.espresso:espresso-
core:3.4.0'
    androidTestImplementation "androidx.compose.ui:ui-test-
junit4:$compose_ui_version"
    debugImplementation "androidx.compose.ui:ui-
tooling:$compose_ui_version"
    debugImplementation "androidx.compose.ui:ui-test-
manifest:$compose_ui_version"
}
```

2.Adding Room Dependencies

Add the below code in dependencies

```
// Adding Room dependencies
implementation ‘androidx.room:room-common:2.5.0’
Implementation ‘androidx.room:room-ktx:2.5.0’
plugins {
    id 'com.android.application'
    id 'org.jetbrains.kotlin.android'
}

android {
    namespace 'com.example.myapplication'
    compileSdk 33

    defaultConfig {
        applicationId "com.example.myapplication"
        minSdk 24
        targetSdk 33
        versionCode 1
        versionName "1.0"
```

```
        testInstrumentationRunner
"androidx.test.runner.AndroidJUnitRunner"
        vectorDrawables {
            useSupportLibrary true
        }
    }

    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-
optimize.txt'), 'proguard-rules.pro'
        }
    }
    compileOptions {
        sourceCompatibility JavaVersion.VERSION_1_8
        targetCompatibility JavaVersion.VERSION_1_8
    }
    kotlinOptions {
        jvmTarget = '1.8'
    }
    buildFeatures {
        compose true
    }
    composeOptions {
        kotlinCompilerExtensionVersion '1.2.0'
    }
    packagingOptions {
        resources {
            excludes += '/META-INF/{AL2.0,LGPL2.1}'
        }
    }
```

```
}

dependencies {

    implementation 'androidx.core:core-ktx:1.7.0'
    implementation 'androidx.lifecycle:lifecycle-runtime-ktx:2.3.1'
    implementation 'androidx.activity:activity-compose:1.3.1'
    implementation "androidx.compose.ui:ui:$compose_ui_version"
    implementation "androidx.compose.ui:ui-tooling-
preview:$compose_ui_version"
    implementation 'androidx.compose.material:material:1.2.0'
    testImplementation 'junit:junit:4.13.2'
    androidTestImplementation 'androidx.test.ext:junit:1.1.3'
    androidTestImplementation 'androidx.test.espresso:espresso-
core:3.4.0'
    androidTestImplementation "androidx.compose.ui:ui-test-
junit4:$compose_ui_version"
    debugImplementation "androidx.compose.ui:ui-
tooling:$compose_ui_version"

// Adding Room dependencies
    implementation ‘androidx.room:room-common:2.5.0’
    Implementation ‘androidx.room:room-ktx:2.5.0’
}
```

3. Creating The Database Classes

1.Creating the user data class:

```
package com.example.owlapplication

import androidx.room.ColumnInfo
import androidx.room.Entity
import androidx.room.PrimaryKey
```

```
@Entity(tableName = "user_table")
data class User(
    @PrimaryKey(autoGenerate = true) val id: Int?,
    @ColumnInfo(name = "first_name") val firstName: String?,
    @ColumnInfo(name = "last_name") val lastName: String?,
    @ColumnInfo(name = "email") val email: String?,
    @ColumnInfo(name = "password") val password: String?,

    )
```

2.Create An UserDao interface

```
package com.example.owlapplication

import androidx.room.*

@Dao
interface UserDao {

    @Query("SELECT * FROM user_table WHERE email = :email")
    suspend fun getUserByEmail(email: String): User?

    @Insert(onConflict = OnConflictStrategy.REPLACE)
    suspend fun insertUser(user: User)

    @Update
    suspend fun updateUser(user: User)

    @Delete
    suspend fun deleteUser(user: User)
}
```

3.create An UserDatabase Class

```
package com.example.owlapplication

import android.content.Context
import androidx.room.Database
import androidx.room.Room
import androidx.room.RoomDatabase

@Database(entities = [User::class], version = 1)
abstract class UserDatabase : RoomDatabase() {

    abstract fun userDao(): UserDao

    companion object {

        @Volatile
        private var instance: UserDatabase? = null

        fun getDatabase(context: Context): UserDatabase {
            return instance ?: synchronized(this) {
                val newInstance = Room.databaseBuilder(
                    context.applicationContext,
                    UserDatabase::class.java,
                    "user_database"
                ).build()
                instance = newInstance
                newInstance
            }
        }
    }
}
```

4.Create An UserDatabaseHelper Class:

```
package com.example.owlapplication
```

```
import android.annotation.SuppressLint
import android.content.ContentValues
import android.content.Context
import android.database.Cursor
import android.database.sqlite.SQLiteDatabase
import android.database.sqlite.SQLiteOpenHelper

class UserDatabaseHelper(context: Context) :
   SQLiteOpenHelper(context, DATABASE_NAME, null,
DATABASE_VERSION) {

   companion object {
      private const val DATABASE_VERSION = 1
      private const val DATABASE_NAME = "UserDatabase.db"

      private const val TABLE_NAME = "user_table"
      private const val COLUMN_ID = "id"
      private const val COLUMN_FIRST_NAME = "first_name"
      private const val COLUMN_LAST_NAME = "last_name"
      private const val COLUMN_EMAIL = "email"
      private const val COLUMN_PASSWORD = "password"
   }

   override fun onCreate(db: SQLiteDatabase?) {
      val createTable = "CREATE TABLE $TABLE_NAME (" +
            "$COLUMN_ID INTEGER PRIMARY KEY AUTOINCREMENT, "
+
            "$COLUMN_FIRST_NAME TEXT, " +
            "$COLUMN_LAST_NAME TEXT, " +
            "$COLUMN_EMAIL TEXT, " +
            "$COLUMN_PASSWORD TEXT" +
            ")"
```

```
        db?.execSQL(createTable)
    }

    override fun onUpgrade(db: SQLiteDatabase?, oldVersion: Int,
newVersion: Int) {
        db?.execSQL("DROP TABLE IF EXISTS $TABLE_NAME")
        onCreate(db)
    }

    fun insertUser(user: User) {
        val db = writableDatabase
        val values = ContentValues()
        values.put(COLUMN_FIRST_NAME, user.firstName)
        values.put(COLUMN_LAST_NAME, user.lastName)
        values.put(COLUMN_EMAIL, user.email)
        values.put(COLUMN_PASSWORD, user.password)
        db.insert(TABLE_NAME, null, values)
        db.close()
    }

    @SuppressLint("Range")
    fun getUserByUsername(username: String): User? {
        val db = readableDatabase
        val cursor: Cursor = db.rawQuery("SELECT * FROM
$TABLE_NAME WHERE $COLUMN_FIRST_NAME = ?",
arrayOf(username))
        var user: User? = null
        if (cursor.moveToFirst()) {
            user = User(
                id = cursor.getInt(cursor.getColumnIndex(COLUMN_ID)),
                firstName =
cursor.getString(cursor.getColumnIndex(COLUMN_FIRST_NAME)),
```

```
            lastName =
cursor.getString(cursor.getColumnIndex(COLUMN_LAST_NAME)),
            email =
cursor.getString(cursor.getColumnIndex(COLUMN_EMAIL)),
            password =
cursor.getString(cursor.getColumnIndex(COLUMN_PASSWORD)),
        )
      }
      cursor.close()
      db.close()
      return user
   }
   @SuppressLint("Range")
   fun getUserById(id: Int): User? {
      val db = readableDatabase
      val cursor: Cursor = db.rawQuery("SELECT * FROM
$TABLE_NAME WHERE $COLUMN_ID = ?", arrayOf(id.toString()))
      var user: User? = null
      if (cursor.moveToFirst()) {
         user = User(
            id = cursor.getInt(cursor.getColumnIndex(COLUMN_ID)),
            firstName =
cursor.getString(cursor.getColumnIndex(COLUMN_FIRST_NAME)),
            lastName =
cursor.getString(cursor.getColumnIndex(COLUMN_LAST_NAME)),
            email =
cursor.getString(cursor.getColumnIndex(COLUMN_EMAIL)),
            password =
cursor.getString(cursor.getColumnIndex(COLUMN_PASSWORD)),
         )
      }
      cursor.close()
      db.close()
```

```
        return user
    }

    @SuppressLint("Range")
    fun getAllUsers(): List<User> {
        val users = mutableListOf<User>()
        val db = readableDatabase
        val cursor: Cursor = db.rawQuery("SELECT * FROM
$TABLE_NAME", null)
        if (cursor.moveToFirst()) {
            do {
                val user = User(
                    id = cursor.getInt(cursor.getColumnIndex(COLUMN_ID)),
                    firstName =
cursor.getString(cursor.getColumnIndex(COLUMN_FIRST_NAME)),
                    lastName =
cursor.getString(cursor.getColumnIndex(COLUMN_LAST_NAME)),
                    email =
cursor.getString(cursor.getColumnIndex(COLUMN_EMAIL)),
                    password =
cursor.getString(cursor.getColumnIndex(COLUMN_PASSWORD)),
                )
                users.add(user)
            } while (cursor.moveToNext())
        }
        cursor.close()
        db.close()
        return users
    }

}
```

4.Building Application UI And Connecting To Database

1. Creating loginActivity.kt with Database:

```
package com.example.owlapplication

import android.content.Context
import android.content.Intent
import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.Image
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.*
import androidx.compose.material.*
import androidx.compose.runtime.*
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.layout.ContentScale
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.text.font.FontFamily
import androidx.compose.ui.text.font.FontWeight
import
androidx.compose.ui.text.input.PasswordVisualTransformation
import androidx.compose.ui.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.core.content.ContextCompat
import com.example.owlapplication.ui.theme.OwlApplicationTheme

class LoginActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper(this)
        setContent {
```

```
            LoginScreen(this, databaseHelper)
        }
    }
}
@Composable
fun LoginScreen(context: Context, databaseHelper:
UserDatabaseHelper) {

    var username by remember { mutableStateOf("") }
    var password by remember { mutableStateOf("") }
    var error by remember { mutableStateOf("") }

    Column(
        modifier = Modifier.fillMaxSize().background(Color.White),
        horizontalAlignment = Alignment.CenterHorizontally,
        verticalArrangement = Arrangement.Center
    ) {

        Image(painterResource(id = R.drawable.study_login),
contentDescription = "")

        Text(
            fontSize = 36.sp,
            fontWeight = FontWeight.ExtraBold,
            fontFamily = FontFamily.Cursive,
            text = "Login"
        )
        Spacer(modifier = Modifier.height(10.dp))

        TextField(
            value = username,
            onValueChange = { username = it },
            label = { Text("Username") },
```

```
            modifier = Modifier.padding(10.dp)
                .width(280.dp)
        )

        TextField(
            value = password,
            onValueChange = { password = it },
            label = { Text("Password") },
            visualTransformation = PasswordVisualTransformation(),
            modifier = Modifier.padding(10.dp)
                .width(280.dp)
        )

        if (error.isNotEmpty()) {
            Text(
                text = error,
                color = MaterialTheme.colors.error,
                modifier = Modifier.padding(vertical = 16.dp)
            )
        }

        Button(
            onClick = {
                if (username.isNotEmpty() && password.isNotEmpty()) {
                    val user =
databaseHelper.getUserByUsername(username)
                    if (user != null && user.password == password) {
                        error = "Successfully log in"
                        context.startActivity(
                            Intent(
                                context,
                                MainActivity::class.java
                            )
```

```
                )
                //onLoginSuccess()
            }
            else {
                error =  "Invalid username or password"
            }

        } else {
            error = "Please fill all fields"
        }
    },
    modifier = Modifier.padding(top = 16.dp)
) {
    Text(text = "Login")
}
Row {
    TextButton(onClick = {context.startActivity(
        Intent(
            context,
            RegisterActivity::class.java
        )
    )}
    )
    { Text(text = "Register") }
    TextButton(onClick = {
    })

    {
        Spacer(modifier = Modifier.width(60.dp))
        Text(text = "Forget password?")
    }
}
}
```

```
}
private fun startMainPage(context: Context) {
   val intent = Intent(context, MainActivity::class.java)
   ContextCompat.startActivity(context, intent, null)
}
```

2.Creating RegisterActivity.kt with Database

```
package com.example.owlapplication

import android.content.Context
import android.content.Intent
import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.Image
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.*
import androidx.compose.material.*
import androidx.compose.runtime.*
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.layout.ContentScale
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.text.font.FontFamily
import androidx.compose.ui.text.font.FontWeight
import
androidx.compose.ui.text.input.PasswordVisualTransformation
import androidx.compose.ui.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.core.content.ContextCompat
import com.example.owlapplication.ui.theme.OwlApplicationTheme
```

```
class RegisterActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper(this)
        setContent {
            RegistrationScreen(this, databaseHelper)
        }
    }
}

@Composable
fun RegistrationScreen(context: Context, databaseHelper:
UserDatabaseHelper) {

    var username by remember { mutableStateOf("") }
    var password by remember { mutableStateOf("") }
    var email by remember { mutableStateOf("") }
    var error by remember { mutableStateOf("") }

    Column(
        modifier = Modifier.fillMaxSize().background(Color.White),
        horizontalAlignment = Alignment.CenterHorizontally,
        verticalArrangement = Arrangement.Center
    ) {

        Image(painterResource(id = R.drawable.study_signup),
contentDescription = "")

        Text(
            fontSize = 36.sp,
            fontWeight = FontWeight.ExtraBold,
            fontFamily = FontFamily.Cursive,
```

```
    text = "Register"
)

Spacer(modifier = Modifier.height(10.dp))
TextField(
    value = username,
    onValueChange = { username = it },
    label = { Text("Username") },
    modifier = Modifier
        .padding(10.dp)
        .width(280.dp)

)

TextField(
    value = email,
    onValueChange = { email = it },
    label = { Text("Email") },
    modifier = Modifier
        .padding(10.dp)
        .width(280.dp)
)

TextField(
    value = password,
    onValueChange = { password = it },
    label = { Text("Password") },
    visualTransformation = PasswordVisualTransformation(),
    modifier = Modifier
        .padding(10.dp)
        .width(280.dp)
)
```

```
        if (error.isNotEmpty()) {
            Text(
                text = error,
                color = MaterialTheme.colors.error,
                modifier = Modifier.padding(vertical = 16.dp)
            )
        }

        Button(
            onClick = {
                if (username.isNotEmpty() && password.isNotEmpty() &&
email.isNotEmpty()) {
                    val user = User(
                        id = null,
                        firstName = username,
                        lastName = null,
                        email = email,
                        password = password
                    )
                    databaseHelper.insertUser(user)
                    error = "User registered successfully"
                    // Start LoginActivity using the current context
                    context.startActivity(
                        Intent(
                            context,
                            LoginActivity::class.java
                        )
                    )

                } else {
                    error = "Please fill all fields"
                }
```

```
            },
            modifier = Modifier.padding(top = 16.dp)
        ) {
            Text(text = "Register")
        }
        Spacer(modifier = Modifier.width(10.dp))
        Spacer(modifier = Modifier.height(10.dp))

        Row() {
            Text(
                modifier = Modifier.padding(top = 14.dp), text = "Have an
account?"
            )
            TextButton(onClick = {
                context.startActivity(
                    Intent(
                        context,
                        LoginActivity::class.java
                    )
                )
            })

            {
                Spacer(modifier = Modifier.width(10.dp))
                Text(text = "Log in")
            }
        }
    }
}
private fun startLoginActivity(context: Context) {
    val intent = Intent(context, LoginActivity::class.java)
    ContextCompat.startActivity(context, intent, null)
}
```

3.Creating MainActivity.kt file:

In mainActivity.kt file the main application is developed

- Before creating UI we need to add some imges in drawable which are in res

  1.ic_launcher_background

  package com.example.owlapplication

  import android.content.Context
  import android.content.Intent
  import android.os.Bundle
  import androidx.activity.ComponentActivity
  import androidx.activity.compose.setContent
  import androidx.compose.foundation.Image
  import androidx.compose.foundation.background
  import androidx.compose.foundation.layout.*
  import androidx.compose.material.*
  import androidx.compose.runtime.*
  import androidx.compose.ui.Alignment
  import androidx.compose.ui.Modifier
  import androidx.compose.ui.graphics.Color
  import androidx.compose.ui.layout.ContentScale
  import androidx.compose.ui.res.painterResource
  import androidx.compose.ui.text.font.FontFamily
  import androidx.compose.ui.text.font.FontWeight
  import
  androidx.compose.ui.text.input.PasswordVisualTransformatio
  n
  import androidx.compose.ui.tooling.preview.Preview
  import androidx.compose.ui.unit.dp
  import androidx.compose.ui.unit.sp
  import androidx.core.content.ContextCompat

```
import
com.example.owlapplication.ui.theme.OwlApplicationTheme

class RegisterActivity : ComponentActivity() {
   private lateinit var databaseHelper: UserDatabaseHelper
   override fun onCreate(savedInstanceState: Bundle?) {
      super.onCreate(savedInstanceState)
      databaseHelper = UserDatabaseHelper(this)
      setContent {
         RegistrationScreen(this, databaseHelper)
      }
   }
}

@Composable
fun RegistrationScreen(context: Context, databaseHelper:
UserDatabaseHelper) {

   var username by remember { mutableStateOf("") }
   var password by remember { mutableStateOf("") }
   var email by remember { mutableStateOf("") }
   var error by remember { mutableStateOf("") }

   Column(
      modifier =
Modifier.fillMaxSize().background(Color.White),
      horizontalAlignment = Alignment.CenterHorizontally,
      verticalArrangement = Arrangement.Center
   ) {

      Image(painterResource(id = R.drawable.study_signup),
contentDescription = "")
```

```
        Text(
            fontSize = 36.sp,
            fontWeight = FontWeight.ExtraBold,
            fontFamily = FontFamily.Cursive,
            text = "Register"
        )

        Spacer(modifier = Modifier.height(10.dp))
        TextField(
            value = username,
            onValueChange = { username = it },
            label = { Text("Username") },
            modifier = Modifier
                .padding(10.dp)
                .width(280.dp)

        )

        TextField(
            value = email,
            onValueChange = { email = it },
            label = { Text("Email") },
            modifier = Modifier
                .padding(10.dp)
                .width(280.dp)
        )

        TextField(
            value = password,
            onValueChange = { password = it },
            label = { Text("Password") },
            visualTransformation =
PasswordVisualTransformation(),
```

```
            modifier = Modifier
                .padding(10.dp)
                .width(280.dp)
        )


        if (error.isNotEmpty()) {
            Text(
                text = error,
                color = MaterialTheme.colors.error,
                modifier = Modifier.padding(vertical = 16.dp)
            )
        }

        Button(
            onClick = {
                if (username.isNotEmpty() &&
password.isNotEmpty() && email.isNotEmpty()) {
                    val user = User(
                        id = null,
                        firstName = username,
                        lastName = null,
                        email = email,
                        password = password
                    )
                    databaseHelper.insertUser(user)
                    error = "User registered successfully"
                    // Start LoginActivity using the current context
                    context.startActivity(
                        Intent(
                            context,
                            LoginActivity::class.java
                        )
```

```
                )

            } else {
                error = "Please fill all fields"
            }
        },
        modifier = Modifier.padding(top = 16.dp)
    ) {
        Text(text = "Register")
    }
    Spacer(modifier = Modifier.width(10.dp))
    Spacer(modifier = Modifier.height(10.dp))

    Row() {
        Text(
            modifier = Modifier.padding(top = 14.dp), text =
"Have an account?"
        )
        TextButton(onClick = {
            context.startActivity(
                Intent(
                    context,
                    LoginActivity::class.java
                )
            )
        })

        {
            Spacer(modifier = Modifier.width(10.dp))
            Text(text = "Log in")
        }
    }
  }
```

```
}
private fun startLoginActivity(context: Context) {
   val intent = Intent(context, LoginActivity::class.java)
   ContextCompat.startActivity(context, intent, null)
}
```

3.Creating MainActivity2.kt File

```
package com.example.owlapplication

import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.Image
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.rememberScrollState
import androidx.compose.foundation.verticalScroll
import androidx.compose.material.Text
import androidx.compose.runtime.Composable
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.draw.scale
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.res.stringResource
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.text.style.TextAlign
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import
com.example.owlapplication.ui.theme.OwlApplicationTheme
```

```
class MainActivity2 : ComponentActivity() {
   override fun onCreate(savedInstanceState: Bundle?) {
      super.onCreate(savedInstanceState)
      setContent {
         Greeting()
      }
   }
}
@Composable
fun Greeting() {
   Column(
      modifier = Modifier.padding(start = 26.dp, end = 26.dp,
bottom = 26.dp)
         .verticalScroll(rememberScrollState())
         .background(Color.White),
      verticalArrangement = Arrangement.Top
   ) {

      Image(
         painterResource(id = R.drawable.img_1),
         contentDescription = "",
         modifier =
Modifier.align(Alignment.CenterHorizontally)
            .scale(scaleX = 1.5F, scaleY = 1.5F)
      )

      Spacer(modifier = Modifier.height(60.dp))

      Text(
         text = stringResource(id = R.string.course1),
         color = Color(0xFFFFA500),
         fontSize = 16.sp,
```

```
            modifier =
Modifier.align(Alignment.CenterHorizontally)
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.topic1),
            fontWeight = FontWeight.Bold,
            fontSize = 26.sp,
            modifier =
Modifier.align(Alignment.CenterHorizontally)

        )
        Spacer(modifier = Modifier.height(20.dp))
        Text(
            text = stringResource(id = R.string.subheading1_1),
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.text1_1),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
            fontSize = 16.sp
        )

        Spacer(modifier = Modifier.height(20.dp))
        Text(
            text = stringResource(id = R.string.subheading1_2),
```

```
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.text1_2),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
            fontSize = 16.sp
        )
    }
}
```

5. Creating MainActivity3.kt File

```
package com.example.owlapplication

import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.Image
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.rememberScrollState
import androidx.compose.foundation.verticalScroll
import androidx.compose.material.Text
import androidx.compose.runtime.Composable
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.draw.scale
import androidx.compose.ui.graphics.Color
```

```
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.res.stringResource
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.text.style.TextAlign
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp

class MainActivity3 : ComponentActivity() {
   override fun onCreate(savedInstanceState: Bundle?) {
      super.onCreate(savedInstanceState)
      setContent {
         Greeting1()
      }
   }
}
@Composable
fun Greeting1() {
   Column(
      modifier = Modifier.padding(start = 26.dp, end = 26.dp,
bottom = 26.dp)
         .verticalScroll(rememberScrollState())
         .background(Color.White),
      verticalArrangement = Arrangement.Top
   ) {

      Image(
         painterResource(id = R.drawable.img_2),
         contentDescription = "",
         modifier =
Modifier.align(Alignment.CenterHorizontally)
            .scale(scaleX = 1.2F, scaleY = 1F)
      )
```

```
        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.course2),
            color = Color(0xFFFFA500),
            fontSize = 16.sp,
            modifier =
Modifier.align(Alignment.CenterHorizontally)
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.topic2),
            fontWeight = FontWeight.Bold,
            fontSize = 26.sp,
            modifier =
Modifier.align(Alignment.CenterHorizontally)

        )
        Spacer(modifier = Modifier.height(20.dp))
        Text(
            text = stringResource(id = R.string.subheading2_1),
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.text2_1),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
```

```
            fontSize = 16.sp
        )

        Spacer(modifier = Modifier.height(20.dp))
        Text(
            text = stringResource(id = R.string.subheading2_2),
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.text2_2),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
            fontSize = 16.sp
        )
    }
}
```

6. Creating MainActivity4.kt File

```
package com.example.owlapplication

import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.Image
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.rememberScrollState
import androidx.compose.foundation.verticalScroll
```

```
import androidx.compose.material.MaterialTheme
import androidx.compose.material.Surface
import androidx.compose.material.Text
import androidx.compose.runtime.Composable
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.draw.scale
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.res.stringResource
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.text.style.TextAlign
import androidx.compose.ui.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import
com.example.owlapplication.ui.theme.OwlApplicationTheme

class MainActivity4 : ComponentActivity() {
   override fun onCreate(savedInstanceState: Bundle?) {
      super.onCreate(savedInstanceState)
      setContent {
         Greeting2()
      }
   }
}
@Composable
fun Greeting2() {
   Column(
      modifier = Modifier.padding(start = 26.dp, end = 26.dp,
bottom = 26.dp)
         .verticalScroll(rememberScrollState())
         .background(Color.White),
```

```
        verticalArrangement = Arrangement.Top
    ) {

        Image(
            painterResource(id = R.drawable.img_3),
            contentDescription = "",
            modifier =
Modifier.align(Alignment.CenterHorizontally)
                .scale(scaleX = 1.5F, scaleY = 2F)
        )

        Spacer(modifier = Modifier.height(60.dp))

        Text(
            text = stringResource(id = R.string.course3),
            color = Color(0xFFFFA500),
            fontSize = 16.sp,
            modifier =
Modifier.align(Alignment.CenterHorizontally)
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.topic3),
            fontWeight = FontWeight.Bold,
            fontSize = 26.sp,
            modifier =
Modifier.align(Alignment.CenterHorizontally)

        )
        Spacer(modifier = Modifier.height(20.dp))
        Text(
```

```
            text = stringResource(id = R.string.subheading3_1),
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.text3_1),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
            fontSize = 16.sp
        )

        Spacer(modifier = Modifier.height(20.dp))
        Text(
            text = stringResource(id = R.string.subheading3_2),
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.text3_2),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
            fontSize = 16.sp
        )
    }
}
```

7.Creating MainActivity5.kt file

```
package com.example.owlapplication

import android.os.Bundle
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.Image
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.rememberScrollState
import androidx.compose.foundation.verticalScroll
import androidx.compose.material.MaterialTheme
import androidx.compose.material.Surface
import androidx.compose.material.Text
import androidx.compose.runtime.Composable
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.draw.scale
import androidx.compose.ui.graphics.Color
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.res.stringResource
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.text.style.TextAlign
import androidx.compose.ui.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import
com.example.owlapplication.ui.theme.OwlApplicationTheme

class MainActivity4 : ComponentActivity() {
   override fun onCreate(savedInstanceState: Bundle?) {
      super.onCreate(savedInstanceState)
      setContent {
```

```
            Greeting2()
        }
    }
}
@Composable
fun Greeting2() {
    Column(
        modifier = Modifier.padding(start = 26.dp, end = 26.dp,
bottom = 26.dp)
            .verticalScroll(rememberScrollState())
            .background(Color.White),
        verticalArrangement = Arrangement.Top
    ) {

        Image(
            painterResource(id = R.drawable.img_3),
            contentDescription = "",
            modifier =
Modifier.align(Alignment.CenterHorizontally)
                .scale(scaleX = 1.5F, scaleY = 2F)
        )

        Spacer(modifier = Modifier.height(60.dp))

        Text(
            text = stringResource(id = R.string.course3),
            color = Color(0xFFFFA500),
            fontSize = 16.sp,
            modifier =
Modifier.align(Alignment.CenterHorizontally)
        )

        Spacer(modifier = Modifier.height(20.dp))
```

```
        Text(
            text = stringResource(id = R.string.topic3),
            fontWeight = FontWeight.Bold,
            fontSize = 26.sp,
            modifier =
Modifier.align(Alignment.CenterHorizontally)

        )
        Spacer(modifier = Modifier.height(20.dp))
        Text(
            text = stringResource(id = R.string.subheading3_1),
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))

        Text(
            text = stringResource(id = R.string.text3_1),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
            fontSize = 16.sp
        )

        Spacer(modifier = Modifier.height(20.dp))
        Text(
            text = stringResource(id = R.string.subheading3_2),
            modifier = Modifier.align(Alignment.Start),
            fontSize = 20.sp
        )

        Spacer(modifier = Modifier.height(20.dp))
```

```
        Text(
            text = stringResource(id = R.string.text3_2),
            modifier = Modifier.align(Alignment.Start),
            textAlign = TextAlign.Justify,
            fontSize = 16.sp
        )
    }
}
```

6.Modifying AndroidManifest.Xml:

When we run the app we will get the MainActivity.kt file as our first screen , but we want LoginActivity.kt , So we need to change in AndroidManifest.xml

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

    <application
        android:allowBackup="true"

android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.OwlApplication"
        tools:targetApi="31">
        <activity
            android:name=".RegisterActivity"
```

```
    android:exported="false"
    android:label="@string/title_activity_register"
    android:theme="@style/Theme.OwlApplication" />
<activity
    android:name=".MainActivity"
    android:exported="false"
    android:label="MainActivity"
    android:theme="@style/Theme.OwlApplication" />
<activity
    android:name=".MainActivity5"
    android:exported="false"
    android:label="@string/title_activity_main5"
    android:theme="@style/Theme.OwlApplication" />
<activity
    android:name=".MainActivity4"
    android:exported="false"
    android:label="@string/title_activity_main4"
    android:theme="@style/Theme.OwlApplication" />
<activity
    android:name=".MainActivity3"
    android:exported="false"
    android:label="@string/title_activity_main3"
    android:theme="@style/Theme.OwlApplication" />
<activity
    android:name=".MainActivity2"
    android:exported="false"
    android:label="@string/title_activity_main2"
    android:theme="@style/Theme.OwlApplication" />
<activity
    android:name=".LoginActivity"
    android:exported="true"
    android:label="@string/app_name"
    android:theme="@style/Theme.OwlApplication">
```

```
            <intent-filter>
               <action android:name="android.intent.action.MAIN"
        />

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

        </manifest>
```

7.Running The Application:

This milestone explains about running the application

1.Run Apps On A Hardware Device:

Set up a device for development Connect to your device using USB connect to your device using wi-fi Troubleshoot device connection. Device connection Assistant Resolve USB connection issues.Resolve wireless connection issues RSA security key