Project Report

1. Introduction

1.1 Overview

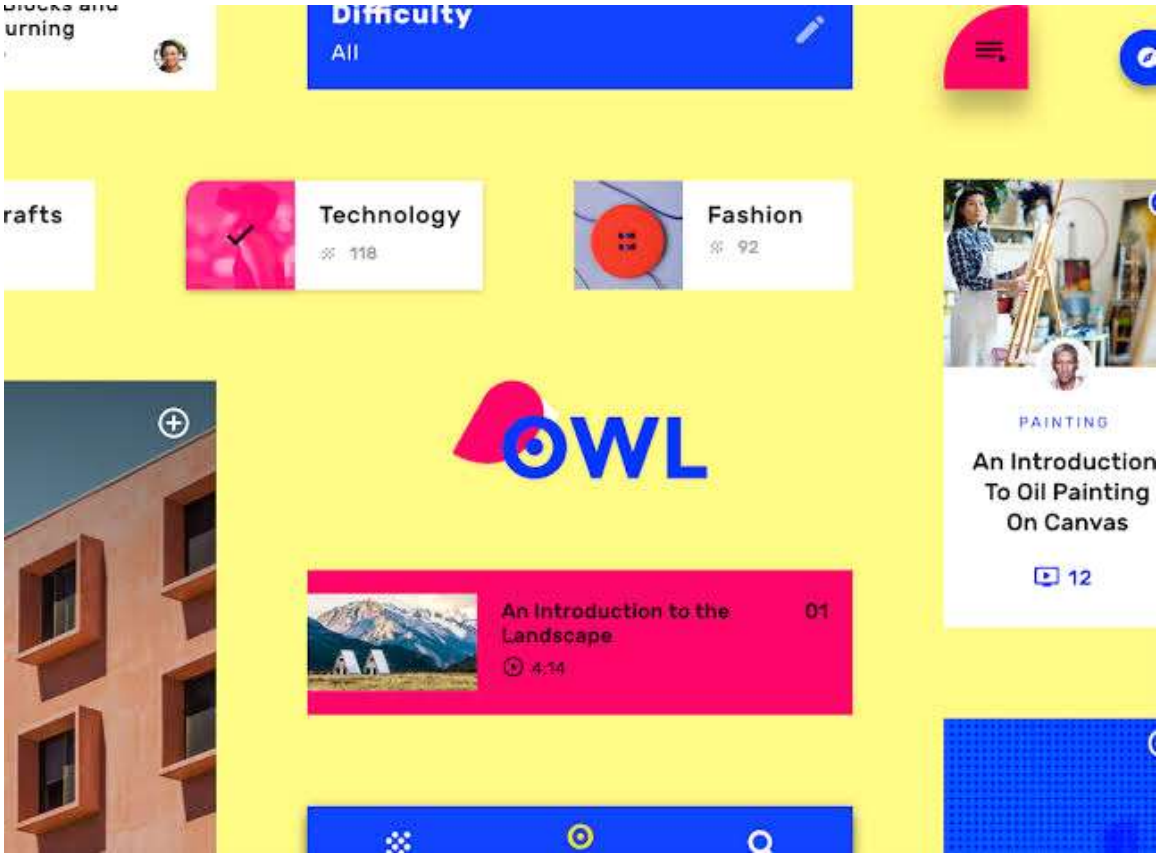
We have developed a project that demonstrates the use of Android Jetpack Compose to build a UI for a Owl-M: a material design study app. Owl-M app is a sample project built using the Android Compose UI toolkit. A Compose implementation of the Owl Material study.

1.2 Purpose

The main purpose of develop an app that is comfortable to use and to pretty much have a very less learning curve when it comes to using the app for everyone.

2. Problem Definition & Design Thinking

2.1 Empathy Map



2.2 Ideation and Brainstorm Map

3. Result

Login Page:

Login

Username

Password

Login

Register page:

Register

Username

Email

Main page:

Study Material

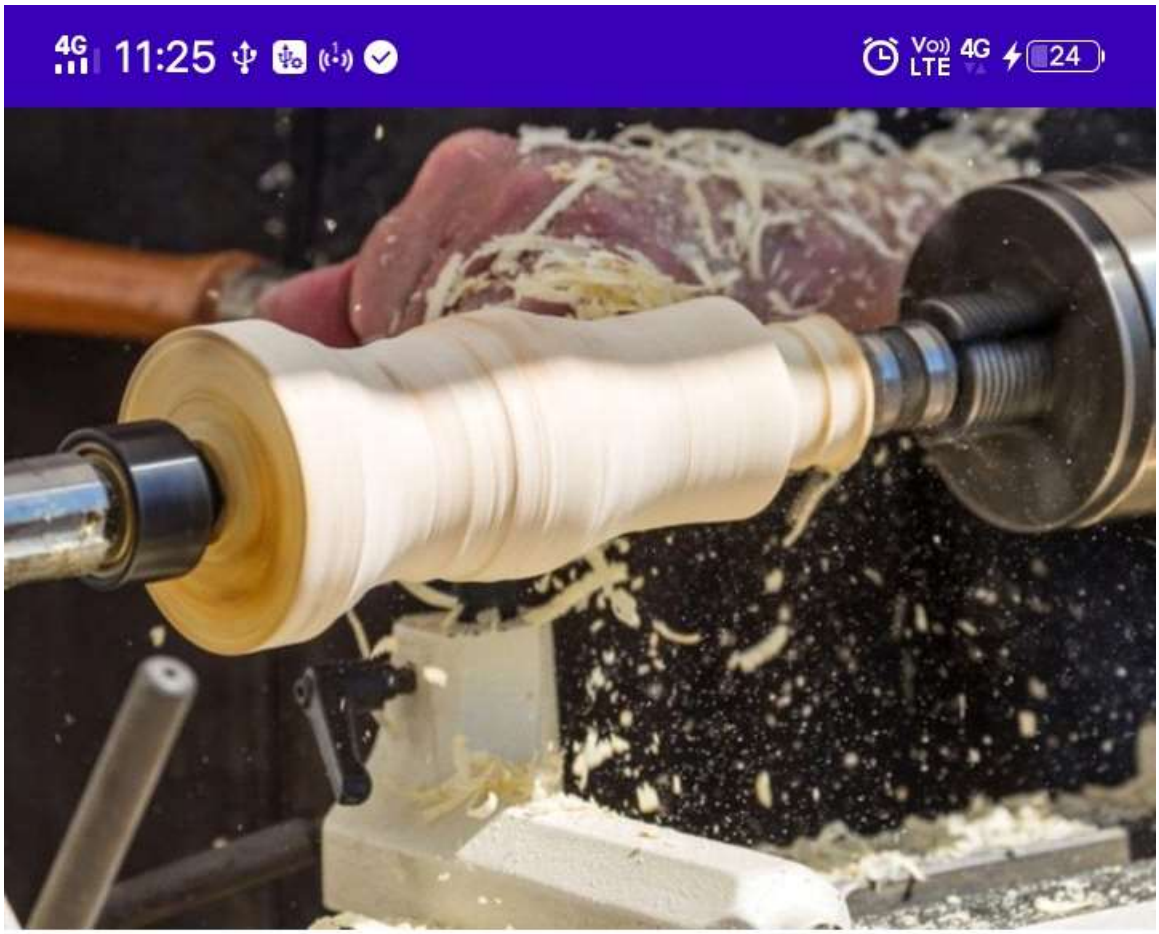
Arts & Craft

The Basics of Woodturning

Painting

An introduction to oil painting

Material page:



Arts & Craft

The Basics of Woodturning

What Is WoodTurning

Woodturning is a form of woodworking involving a lathe. With other kinds of woodworking, the wood is stationary and the tool moves to create cuts.

Advantages:

- User experience: By following the Material Design guidelines, your app will have a consistent look and feel across multiple devices and platforms, which can lead to a better user experience.
- Easy navigation: Material Design provides a clear and intuitive way to navigate through different parts of the app, making it easier for users to find what they're looking for.
- Visual appeal: Material Design's focus on bold colors, typography, and motion can help make your app visually appealing and engaging for users.
- Consistency: By following the Material Design principles, your app will have a consistent layout and design throughout, which can help establish trust with users and make it easier for them to use.

Disadvantages:

- Lack of originality: Since Material Design is a popular design system, your app may look similar to other apps that also use Material Design, which may lead to a lack of originality.
- Technical challenges: Implementing Material Design can be technically challenging, especially for novice developers, which may increase development time and costs.
- Limited customization: Since Material Design has specific guidelines and principles, it may limit the extent to which you can customize the look and feel of your app.

- App size: Material Design can require additional resources, such as images and animations, which may increase the size of your app and require more storage space on the user's device.

Applicatins:

- User-friendly interface: The application should have a simple and intuitive interface that allows users to easily to handle stduy.
- Login and sign-up pages: Users should be able to create an account or log in to access the all material.
- Google Drive: Google's cloud storage service uses Material Design to provide a clean and intuitive interface for users.
- Evernote: The note-taking app uses Material Design to create a consistent user experience across different platforms.

Conclusion:

Overall Owl-M: A Material Design Study App is a simple to use stduy app that provides a very easy to use interface for everybody. Further improvements can be added to this app which is being discussed in the next session.

Future Scope:

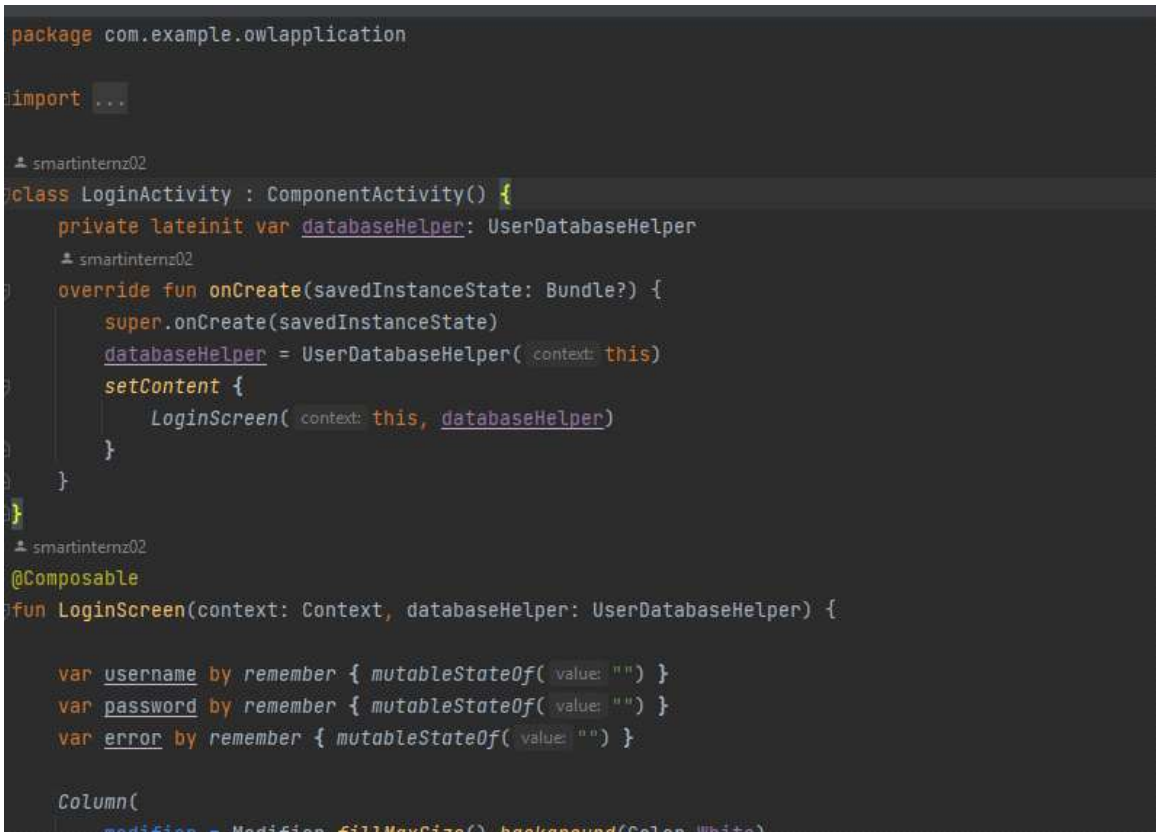
- Adding more features: As you receive feedback from users, you may identify areas where you can add more features to enhance the user experience. For example, you may consider adding new functionality to the main page, such as chat or discussion forums, to encourage user engagement and interaction.
- Integrating with other platforms: To increase the reach and functionality of your app, you may consider integrating it

with other platforms, such as social media, payment gateways, or third-party APIs. This can help attract new users and provide more value to existing users.

- Enhancing security: As technology advances, security threats may become more sophisticated, and users may become more concerned about their data privacy. You may consider enhancing the security features of your app, such as using multi-factor authentication or encryption, to ensure user data is protected.

Appendix:

login Activity:



```
package com.example.owlapplication

import ...

smartinternz02
class LoginActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    smartinternz02
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper( context: this)
        setContent {
            LoginScreen( context: this, databaseHelper)
        }
    }
}
smartinternz02
@Composable
fun LoginScreen(context: Context, databaseHelper: UserDatabaseHelper) {

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

    Column(
```

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

    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( text: "Username") },
        modifier = Modifier.padding(10.dp)
            .width(280.dp)
    )

    TextField(
```

```
        }
        Row { this: RowScope
            TextButton(onClick = {context.startActivity(
                Intent(
                    context,
                    RegisterActivity::class.java
                )
            )}
            )
            { Text(text = "Register") }
            TextButton(onClick = {
            })

            { this: RowScope
                Spacer(modifier = Modifier.width(60.dp))
                Text(text = "Forget password?")
            }
        }
    }
}
 smartinternz02
private fun startMainPage(context: Context) {
    val intent = Intent(context, MainActivity::class.java)
    ContextCompat.startActivity(context, intent,  options: null)
}
```

Register Activity:

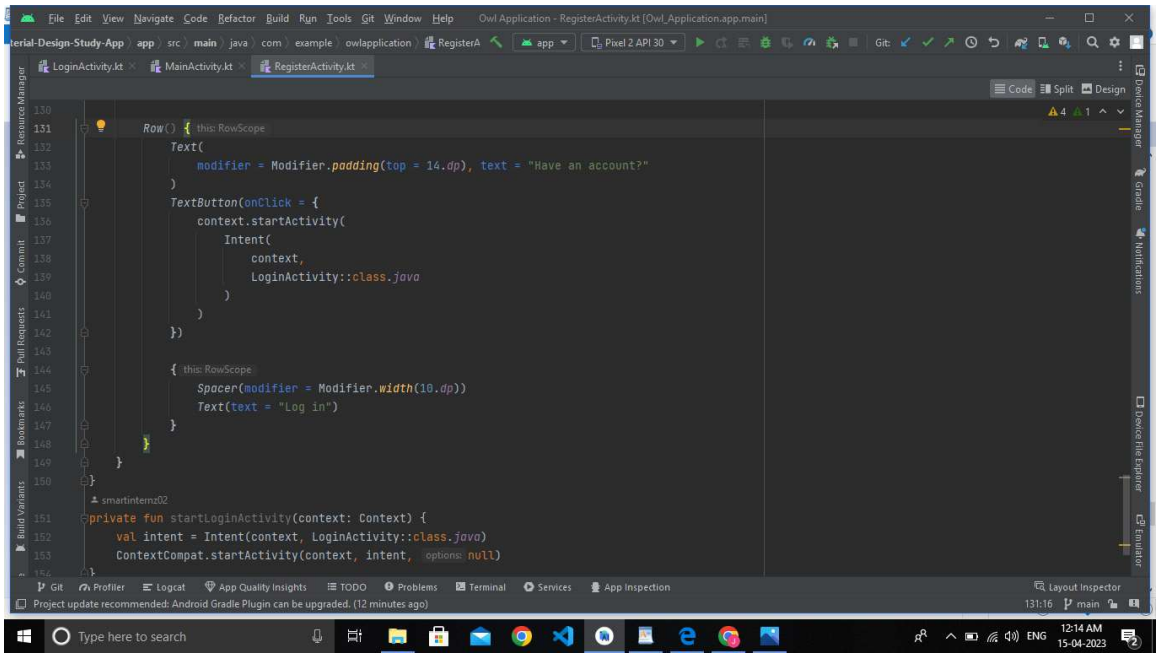
```
package com.example.owlapplication

import ...

smartinternz02
class RegisterActivity : ComponentActivity() {
    private lateinit var databaseHelper: UserDatabaseHelper
    smartinternz02
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = UserDatabaseHelper( context: this)
        setContent {
            RegistrationScreen( context: this, databaseHelper)
        }
    }
}

smartinternz02
@Composable
fun RegistrationScreen(context: Context, databaseHelper: UserDatabaseHelper) {

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



Main Activity:

```
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.clickable
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.rememberScrollState
import androidx.compose.foundation.verticalScroll
import androidx.compose.material.Card
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 MainActivity : ComponentActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContent {
            StudyApp(this)
        }
    }
}

@Composable
fun StudyApp(context: Context) {

    Column(
        modifier = Modifier
            .padding(20.dp)
            .verticalScroll(rememberScrollState())

    ) {

        Text(text = "Study Material",
            fontSize = 36.sp,
            fontWeight = FontWeight.Bold,
            color = Color(0xFFFFA500),
            modifier = Modifier.align(Alignment.CenterHorizontally))

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


//        01
        Card(
            modifier = Modifier
                .fillMaxWidth()
                .height(250.dp)
                .clickable {
                    context.startActivity(
                        Intent(context, MainActivity2::class.java)
```

```
                )
            },
            elevation = 8.dp
        )
        {
            Column(
                horizontalAlignment = Alignment.CenterHorizontally
            ) {
                Image(
                    painterResource(id = R.drawable.img_1), contentDescription = "",
                    modifier = Modifier
                        .height(150.dp)
                        .scale(scaleX = 1.2F, scaleY = 1F)
                )
                Text(text = stringResource(id = R.string.course1),color =
Color(0xFFFFA500),
                    fontSize = 16.sp)

                Text(
                    text = stringResource(id = R.string.topic1),
                    fontWeight = FontWeight.Bold,
                    fontSize = 20.sp,
                    textAlign = TextAlign.Center,
                )
            }
        }

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

//        02
        Card(
            modifier = Modifier
                .fillMaxWidth()
                .height(250.dp)
                .clickable {
                    context.startActivity(
                        Intent(context, MainActivity3::class.java)

                )
            },
            elevation = 8.dp
        )
```

```
        {
            Column(
            horizontalAlignment = Alignment.CenterHorizontally
        ) {
            Image(
                painterResource(id = R.drawable.img_2), contentDescription = "",
                modifier = Modifier
                    .height(150.dp)
                    .scale(scaleX = 1.4F, scaleY = 1F)
            )
            Text(text = stringResource(id = R.string.course2),color =
Color(0xFFFFA500),
                fontSize = 16.sp)

            Text(
                text = stringResource(id = R.string.topic2),
                fontWeight = FontWeight.Bold,
                fontSize = 20.sp,
                textAlign = TextAlign.Center,
            )
        }
        }

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

//        03
        Card(
            modifier = Modifier
                .fillMaxWidth()
                .height(250.dp)
                .clickable {
                    context.startActivity(
                        Intent(context, MainActivity4::class.java)

                    )
                },
            elevation = 8.dp
        )
        {
            Column(
                horizontalAlignment = Alignment.CenterHorizontally
            ) {
```

```
            Image(
                painterResource(id = R.drawable.img_3), contentDescription = "",
                modifier = Modifier
                    .height(150.dp)
                    .scale(scaleX = 1.2F, scaleY = 1F)
            )
            Text(text = stringResource(id = R.string.course3),color =
Color(0xFFFFA500),
                fontSize = 16.sp)

            Text(
                text = stringResource(id = R.string.topic3),
                fontWeight = FontWeight.Bold,
                fontSize = 20.sp,
                textAlign = TextAlign.Center,
            )
        }
    }


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

//      04
    Card(
        modifier = Modifier
            .fillMaxWidth()
            .height(250.dp)
            .clickable {
                context.startActivity(
                    Intent(context, MainActivity5::class.java)

                )
            },
        elevation = 8.dp
    )
    {
        Column(
            horizontalAlignment = Alignment.CenterHorizontally
        ) {
            Image(
                painterResource(id = R.drawable.img_4), contentDescription = "",
```

```
                modifier = Modifier
                    .height(150.dp)
                    .scale(scaleX = 1.2F, scaleY = 1F)
            )
            Text(text = stringResource(id = R.string.course4),color =
Color(0xFFFFA500),
                fontSize = 16.sp)

            Text(
                text = stringResource(id = R.string.topic4),
                fontWeight = FontWeight.Bold,
                fontSize = 20.sp,
                textAlign = TextAlign.Center,
            )
        }
    }


}
```