PROJECT TITLE : A DEMONSTRATION OF TEXT INPUT AND VALIDATION WITH ANDROID COMPOSE

PROJECT PRESENTED BY

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A DEMONSTRATION OF TEXT INPUT AND VALIDATION WITH ANDROID COMPOSE

PROJECT REPORT TEMPLATE

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Paste the Empathy Map Screenshot

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Paste the Ideation & Brainstorming Map Screenshot

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A.Source code

Attach the code for the solution built

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PROJECT REPORT TEMPLATE

1.INTRODUCTION

1.1 Overview

A Brief Description about the project

Android software development is the process by which applications are created for devices running the Android operating system. Google states that[3] "Android apps can be written using Kotlin, Java, and C++ languages" using the Android software development kit (SDK), while using other languages is also possible. All non-Java virtual machine (JVM) languages, such as Go, JavaScript, C, C++ or assembly, need the help of JVM language code, that may be supplied by tools, likely with restricted API support. Some programming languages and tools allow cross-platform app support (i.e. for both Android and iOS). Third party tools, development environments, and language support have also continued to evolve and expand since the initial SDK was released in 2008. The official Android app distribution mechanism to end users is Google Play; it also allows staged gradual app release, as well as distribution of pre-release app versions to testers

1.2 Purpose

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The Use of this project

- A Project that demonstrates the uses of android Jetpack composed to build a UI for Survey App. Survey App project Built Using in the Android Jetpack Compose UI toolkit.The App Allows the User to Answer a Series of Questions.It Showcases some of the key Features of the Compose UI Toolkit,Data Management and User

- You 'll be able to Work on Android Studio and build an app.

2.PROBLEM DEFINITION & DESIGN THINKING

2.1 Empathy Map

Paste the Empathy Map Screenshots

Empathy Map

- An Empathy map is a simple ,easy to digest visual that captures knowledgement about a users behaviours and attitudes

- It is useful tool to helps teams better Understand their users
- creating an effective solution requires understanding the true problem and the person who is experiencing it.
- The Exercise of creating the map helps participants consider things from the users persceptive along with his / her goals and challenges

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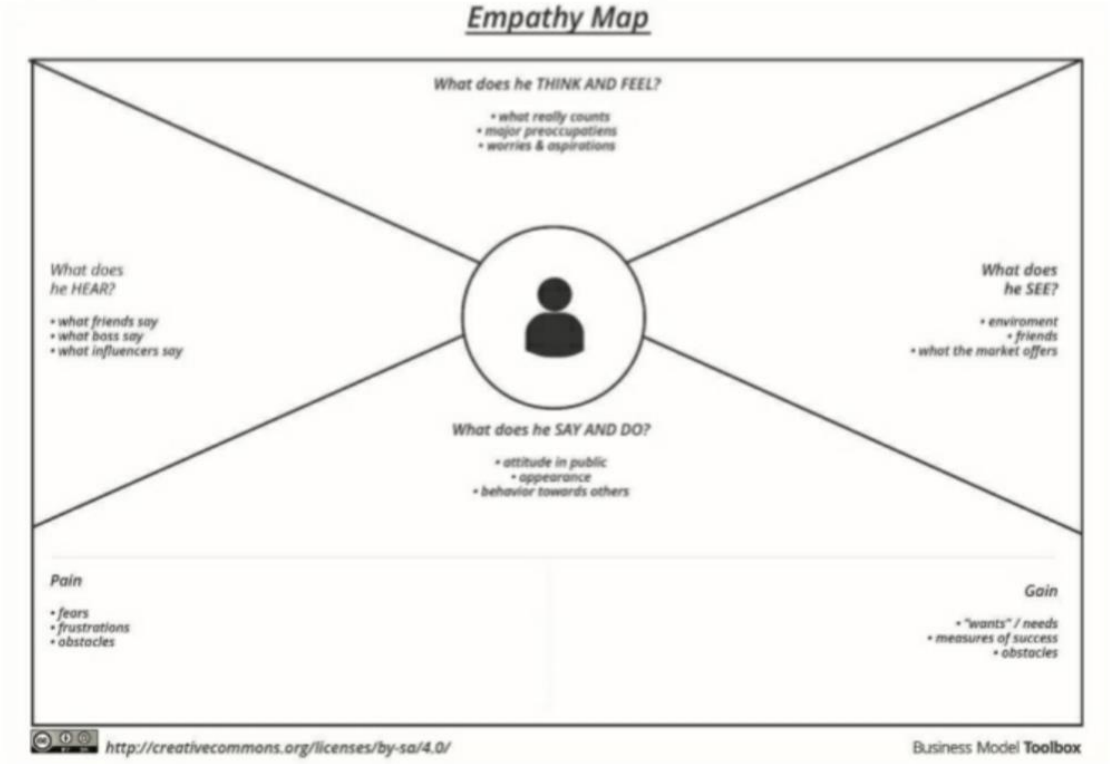
Example:



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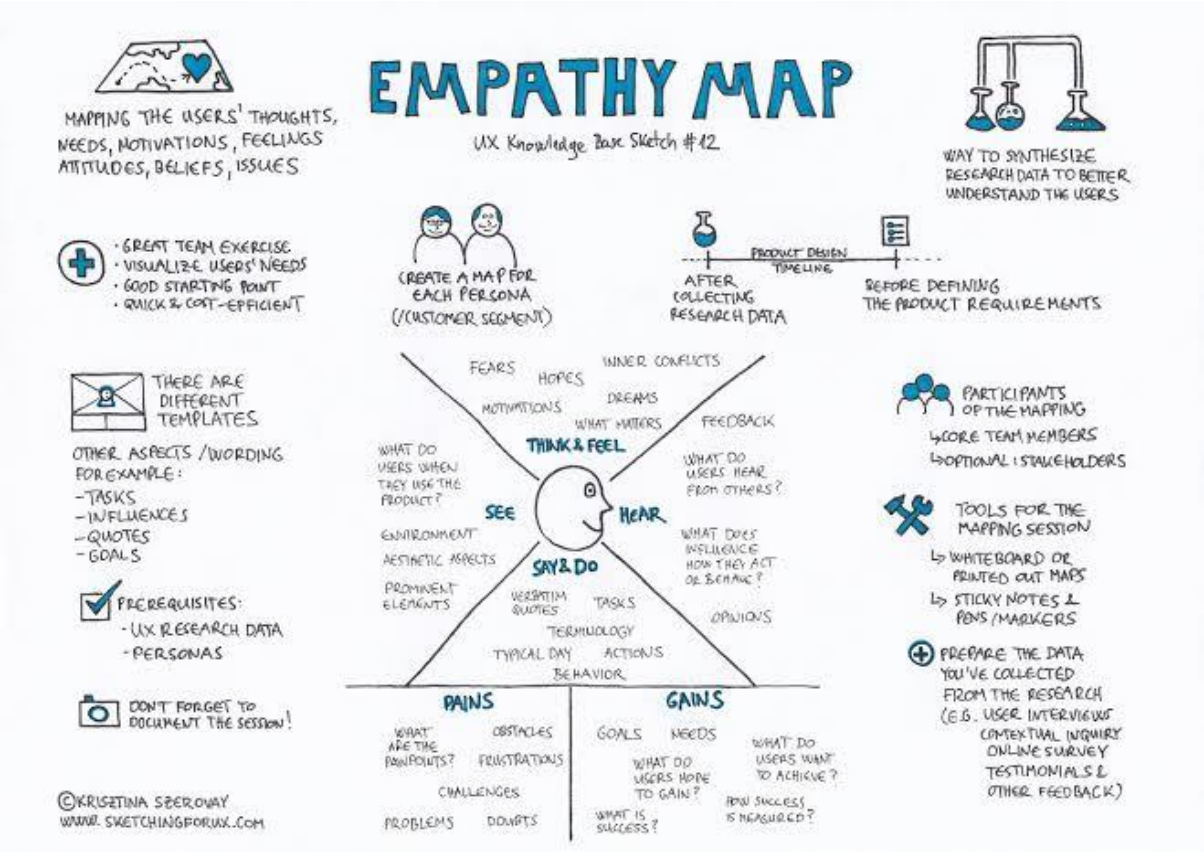

To create a project empathy map that helps to stay on schedule

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2.1 Ideation & Brainstorming Map

Paste the Brainstorming map screenshot

Brainstorming & Idea Prioritization Template

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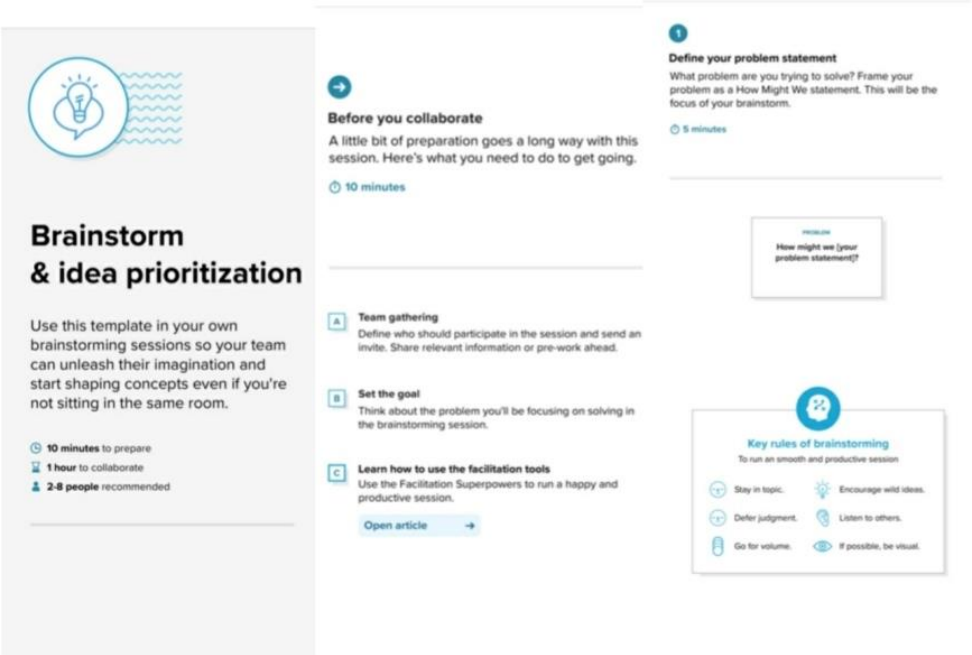
- Brainstorming Provides a free and Open Environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving.Prioritizing volume over value ,out –of – the-box ideas are welcome and build upon and all participants are encouraged to collaborate,helping each other develop a rich amount creative solutions

- Use this Template in your own brainstorming sessions so your team can unleash their imagination and start shaping concept even if u are not sitting in the same room

Step – 1 :Team Gathering,Collaboration and Select the Problem Statement



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Step – 2 :Brainstorm, Idea Listening and Grouping

Step –3: Idea Prioritization

3.RESULT

Final Findings (output) of the project with the screenshots

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OUTPUT

Survey Details

Name: Raja
Age: 34
Mobile_number: 9486096902
Gender: Male
Diabetic: Not Diabetic

Name: Priya
Age: 45
Mobile_number: 9685268249
Gender:Female
Diabetic:Diabetic

4.ADVANTAGES & DISADVANTAGES

❖ ADVANTAGES

- ***focusManager*** is used to clear current focus and to move it in certain direction. In our case it's *down*.
- ***keyboardController*** is used to hide/show keyboard.
- ***creditCardNumberFocusRequester*** & ***nameFocusRequested*** are *FocusRequesters*. They allow us to request focus for composables on demand(eg. from events
  - ***Modifier.focusRequester.onFocusChanged*** — We've added focus requesters and *onFocusChanged* listener to our composable modifiers.
  - ***fieldValue*** — is a class holding information about the editing state.The input service updates text selection, cursor, text and text composition. This class represents those values and allows to observe changes to those values in the text editing composables. We need it to place the input indicator to the end of the entered text upon requesting focus after process death/if input is not empty.

Auto-validation UX can be improved by adding debouncing to the validation events. Debounce sample is inside the repository

❖ DISADVANTAGES

1) Keyboard isn't opened upon entering the screen.

2) No *TextField* is focused upon entering the screen.

3) There is no way to tell which *TextField* was focused last, after process death occurred.

4) No *ImeAction* handling for the *name TextField*.

5) Keyboard isn't dismissed upon successful button click

5.APPLICATION

The Areas Where this Solution can be applied

This Application can be used for

- Surveying the person's having diabetics or not

6.CONCLUSION

- A Conclusion is an important part of the paper : It provides closure for the reader while reminding the reader of the contents and importance of the paper.

7.FUTURE SCOPE

Android compose is the clearly future of Android .It

Requires less code and it's easier to understand and maintain.Compose allows you to build higher quality screens more quickly

8.APPENDIX

A.SOURCE CODE

AndroidManifest.xml

Compose Input: A Demonstration of Text Input and Validation with Android Compose

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.SurveyApplication"
        tools:targetApi="31">
        <activity
            android:name=".RegisterActivity"
            android:exported="false"
            android:label="@string/title_activity_register"
            android:theme="@style/Theme.SurveyApplication" />
        <activity
            android:name=".MainActivity"
            android:exported="false"
            android:label="MainActivity"
            android:theme="@style/Theme.SurveyApplication" />
        <activity
            android:name=".AdminActivity"
            android:exported="false"
            android:label="@string/title_activity_admin"
            android:theme="@style/Theme.SurveyApplication" />
        <activity
            android:name=".LoginActivity"
            android:exported="true"
            android:label="@string/app_name"
            android:theme="@style/Theme.SurveyApplication">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

```
            </intent-filter>
        </activity>
    </application>

</manifest>
```

Color.kt

```
package com.example.surveyapplication.ui.theme

import androidx.compose.ui.graphics.Color

val Purple200 = Color(0xFFBB86FC)
val Purple500 = Color(0xFF6200EE)
val Purple700 = Color(0xFF3700B3)
val Teal200 = Color(0xFF03DAC5)
```

Shape.kt

```
package com.example.surveyapplication.ui.theme

import androidx.compose.foundation.shape.RoundedCornerShape
import androidx.compose.material.Shapes
import androidx.compose.ui.unit.dp

val Shapes = Shapes(
    small = RoundedCornerShape(4.dp),
    medium = RoundedCornerShape(4.dp),
    large = RoundedCornerShape(0.dp)
)
```

Theme.kt

```
package com.example.surveyapplication.ui.theme

import androidx.compose.foundation.isSystemInDarkTheme
import androidx.compose.material.MaterialTheme
import androidx.compose.material.darkColors
import androidx.compose.material.lightColors
import androidx.compose.runtime.Composable

private val DarkColorPalette = darkColors(
    primary = Purple200,
    primaryVariant = Purple700,
    secondary = Teal200
)

private val LightColorPalette = lightColors(
    primary = Purple500,
    primaryVariant = Purple700,
    secondary = Teal200

    /* Other default colors to override
    background = Color.White,
```

```
    surface = Color.White,
    onPrimary = Color.White,
    onSecondary = Color.Black,
    onBackground = Color.Black,
    onSurface = Color.Black,
    */
)

@Composable
fun SurveyApplicationTheme(
    darkTheme: Boolean = isSystemInDarkTheme(),
    content: @Composable () -> Unit
) {
    val colors = if (darkTheme) {
        DarkColorPalette
    } else {
        LightColorPalette
    }

    MaterialTheme(
        colors = colors,
        typography = Typography,
        shapes = Shapes,
        content = content
    )
}
```

Type.kt

```
package com.example.surveyapplication.ui.theme

import androidx.compose.material.Typography
import androidx.compose.ui.text.TextStyle
import androidx.compose.ui.text.font.FontFamily
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.sp

// Set of Material typography styles to start with
val Typography = Typography(
    body1 = TextStyle(
        fontFamily = FontFamily.Default,
        fontWeight = FontWeight.Normal,
        fontSize = 16.sp
    )
    /* Other default text styles to override
    button = TextStyle(
        fontFamily = FontFamily.Default,
        fontWeight = FontWeight.W500,
        fontSize = 14.sp
    ),
    caption = TextStyle(
        fontFamily = FontFamily.Default,
        fontWeight = FontWeight.Normal,
        fontSize = 12.sp
    )
    */
)
```

A DEMONSTRATION OF TEXT INPUT AND VALIDATION WITH ANDROID COMPOSE

AdminActivity.kt

```
package com.example.surveyapplication

import android.os.Bundle
import android.util.Log
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.compose.foundation.Image
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.lazy.LazyColumn
import androidx.compose.foundation.lazy.LazyRow
import androidx.compose.foundation.lazy.items
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.graphics.Color
import androidx.compose.ui.layout.ContentScale
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import com.example.surveyapplication.ui.theme.SurveyApplicationTheme

class AdminActivity : ComponentActivity() {
    private lateinit var databaseHelper: SurveyDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = SurveyDatabaseHelper(this)
        setContent {
            val data = databaseHelper.getAllSurveys();
            Log.d("swathi", data.toString())
            val survey = databaseHelper.getAllSurveys()
            ListListScopeSample(survey)
        }
    }
}
@Composable
fun ListListScopeSample(survey: List<Survey>) {

    Image(
        painterResource(id = R.drawable.background), contentDescription =
"",
        alpha =0.1F,
        contentScale = ContentScale.FillHeight,
        modifier = Modifier.padding(top = 40.dp)
    )

    Text(
        text = "Survey Details",
        modifier = Modifier.padding(top = 24.dp, start = 106.dp, bottom =
24.dp),
        fontSize = 30.sp,
        color = Color(0xFF25b897)
```

```
    )
    Spacer(modifier = Modifier.height(30.dp))
    LazyRow(
        modifier = Modifier
            .fillMaxSize()
            .padding(top = 80.dp),

        horizontalArrangement = Arrangement.SpaceBetween
    ) {
        item {

            LazyColumn {
                items(survey) { survey ->
                    Column(
                        modifier = Modifier.padding(
                            top = 16.dp,
                            start = 48.dp,
                            bottom = 20.dp
                        )
                    ) {
                        Text("Name: ${survey.name}")
                        Text("Age: ${survey.age}")
                        Text("Mobile_Number: ${survey.mobileNumber}")
                        Text("Gender: ${survey.gender}")
                        Text("Diabetics: ${survey.diabetics}")
                    }
                }
            }
        }
    }
}
```

LoginActivity.kt

```
package com.example.surveyapplication

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.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.core.content.ContextCompat
```

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```
import com.example.surveyapplication.ui.theme.SurveyApplicationTheme

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.survey_login),
contentDescription = "")

        Text(
            fontSize = 36.sp,
            fontWeight = FontWeight.ExtraBold,
            fontFamily = FontFamily.Cursive,
            color = Color(0xFF25b897),
            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)
        )
```

A DEMONSTRATION OF TEXT INPUT AND VALIDATION WITH ANDROID COMPOSE

```
        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()
                    }
                    if (user != null && user.password == "admin") {
                        error = "Successfully log in"
                        context.startActivity(
                            Intent(
                                context,
                                AdminActivity::class.java
                            )
                        )
                    }
                    else {
                        error =  "Invalid username or password"
                    }

                } else {
                    error = "Please fill all fields"
                }
            },
            colors = ButtonDefaults.buttonColors(backgroundColor =
Color(0xFF84adb8)),
            modifier = Modifier.padding(top = 16.dp)
        ) {
            Text(text = "Login")
        }
        Row {
            TextButton(onClick = {context.startActivity(
                Intent(
                    context,
                    RegisterActivity::class.java
                )
            )}
            )
            { Text(color = Color(0xFF25b897),text = "Register") }
            TextButton(onClick = {
            })

            {
                Spacer(modifier = Modifier.width(60.dp))
```

```
                Text(color = Color(0xFF25b897),text = "Forget password?")
            }
        }
    }
}
private fun startMainPage(context: Context) {
    val intent = Intent(context, MainActivity::class.java)
    ContextCompat.startActivity(context, intent, null)
}
```

MainActivity.kt

```
package com.example.surveyapplication

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.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.style.TextAlign
import androidx.compose.ui.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import com.example.surveyapplication.ui.theme.SurveyApplicationTheme

class MainActivity : ComponentActivity() {
    private lateinit var databaseHelper: SurveyDatabaseHelper
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        databaseHelper = SurveyDatabaseHelper(this)
        setContent {
            FormScreen(this, databaseHelper)
        }
    }
}

@Composable
fun FormScreen(context: Context, databaseHelper: SurveyDatabaseHelper) {

    Image(
        painterResource(id = R.drawable.background), contentDescription =
"",
        alpha =0.1F,
        contentScale = ContentScale.FillHeight,
        modifier = Modifier.padding(top = 40.dp)
        )
```

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```
// Define state for form fields
var name by remember { mutableStateOf("") }
var age by remember { mutableStateOf("") }
var mobileNumber by remember { mutableStateOf("") }
var genderOptions = listOf("Male", "Female", "Other")
var selectedGender by remember { mutableStateOf("") }
var error by remember { mutableStateOf("") }
var diabeticsOptions = listOf("Diabetic", "Not Diabetic")
var selectedDiabetics by remember { mutableStateOf("") }

Column(
    modifier = Modifier.padding(24.dp),
    horizontalAlignment = Alignment.Start,
    verticalArrangement = Arrangement.SpaceEvenly
) {

    Text(
        fontSize = 36.sp,
        textAlign = TextAlign.Center,
        text = "Survey on Diabetics",
        color = Color(0xFF25b897)
    )

    Spacer(modifier = Modifier.height(24.dp))

    Text(text = "Name :", fontSize = 20.sp)
    TextField(
        value = name,
        onValueChange = { name = it },
    )

    Spacer(modifier = Modifier.height(14.dp))

    Text(text = "Age :", fontSize = 20.sp)
    TextField(
        value = age,
        onValueChange = { age = it },
    )

    Spacer(modifier = Modifier.height(14.dp))

    Text(text = "Mobile Number :", fontSize = 20.sp)
    TextField(
        value = mobileNumber,
        onValueChange = { mobileNumber = it },
    )

    Spacer(modifier = Modifier.height(14.dp))

    Text(text = "Gender :", fontSize = 20.sp)
    RadioGroup(
        options = genderOptions,
        selectedOption = selectedGender,
        onSelectedChange = { selectedGender = it }
    )

    Spacer(modifier = Modifier.height(14.dp))
```

A DEMONSTRATION OF TEXT INPUT AND VALIDATION WITH ANDROID COMPOSE

```
        Text(text = "Diabetics :", fontSize = 20.sp)
        RadioGroup(
            options = diabeticsOptions,
            selectedOption = selectedDiabetics,
            onSelectedChange = { selectedDiabetics = it }
        )

        Text(
            text = error,
            textAlign = TextAlign.Center,
            modifier = Modifier.padding(bottom = 16.dp)
        )
        // Display Submit button
        Button(
            onClick = {  if (name.isNotEmpty() && age.isNotEmpty() &&
mobileNumber.isNotEmpty() && genderOptions.isNotEmpty() &&
diabeticsOptions.isNotEmpty()) {
                val survey = Survey(
                    id = null,
                    name = name,
                    age = age,
                    mobileNumber = mobileNumber,
                    gender = selectedGender,
                    diabetics = selectedDiabetics
                )
                databaseHelper.insertSurvey(survey)
                error = "Survey Completed"

            } else {
                error = "Please fill all fields"
            }
            },
            colors = ButtonDefaults.buttonColors(backgroundColor =
Color(0xFF84adb8)),
            modifier = Modifier.padding(start = 70.dp).size(height = 60.dp,
width = 200.dp)
        ) {
            Text(text = "Submit")
        }
    }
}
@Composable
fun RadioGroup(
    options: List<String>,
    selectedOption: String?,
    onSelectedChange: (String) -> Unit
) {
    Column {
        options.forEach { option ->
            Row(
                Modifier
                    .fillMaxWidth()
                    .padding(horizontal = 5.dp)
            ) {
                RadioButton(
                    selected = option == selectedOption,
                    onClick = { onSelectedChange(option) }
                )
```

```
                Text(
                    text = option,
                    style = MaterialTheme.typography.body1.merge(),
                    modifier = Modifier.padding(top = 10.dp),
                    fontSize = 17.sp
                )
            }
        }
    }
}
```

RegisterActivity.kt

```
package com.example.surveyapplication

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.tooling.preview.Preview
import androidx.compose.ui.unit.dp
import androidx.compose.ui.unit.sp
import androidx.core.content.ContextCompat
import com.example.surveyapplication.ui.theme.SurveyApplicationTheme

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("") }
```

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```
    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.survey_signup),
contentDescription = "")

        Text(
            fontSize = 36.sp,
            fontWeight = FontWeight.ExtraBold,
            fontFamily = FontFamily.Cursive,
            color = Color(0xFF25b897),
            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)
            )
        }
```

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```
        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"
                }
            },
            colors = ButtonDefaults.buttonColors(backgroundColor =
Color(0xFF84adb8)),
            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( color = Color(0xFF25b897),text = "Log in")
            }
        }
    }
}
private fun startLoginActivity(context: Context) {
    val intent = Intent(context, LoginActivity::class.java)
```

```
    ContextCompat.startActivity(context, intent, null)
}
```

Survey.kt

```
package com.example.surveyapplication

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

@Entity(tableName = "survey_table")
data class Survey(
    @PrimaryKey(autoGenerate = true) val id: Int?,
    @ColumnInfo(name = "name") val name: String?,
    @ColumnInfo(name = "age") val age: String?,
    @ColumnInfo(name = "mobile_number") val mobileNumber: String?,
    @ColumnInfo(name = "gender") val gender: String?,
    @ColumnInfo(name = "diabetics") val diabetics: String?,

    )
```

SurveyDao.kt

```
package com.example.surveyapplication

import androidx.room.*

@Dao
interface SurveyDao {

    @Query("SELECT * FROM survey_table WHERE age = :age")
    suspend fun getUserByAge(age: String): Survey?

    @Insert(onConflict = OnConflictStrategy.REPLACE)
    suspend fun insertSurvey(survey: Survey)

    @Update
    suspend fun updateSurvey(survey: Survey)

    @Delete
    suspend fun deleteSurvey(survey: Survey)
}
```

SurveyDatabase.kt

```
package com.example.surveyapplication

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

@Database(entities = [Survey::class], version = 1)
abstract class SurveyDatabase : RoomDatabase() {
```

```
    abstract fun surveyDao(): SurveyDao

    companion object {

        @Volatile
        private var instance: SurveyDatabase? = null

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

SurveyDatabaseHelper.kt

```
package com.example.surveyapplication

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 SurveyDatabaseHelper(context: Context) :
    SQLiteOpenHelper(context, DATABASE_NAME, null, DATABASE_VERSION) {

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

        private const val TABLE_NAME = "survey_table"
        private const val COLUMN_ID = "id"
        private const val COLUMN_NAME = "name"
        private const val COLUMN_AGE = "age"
        private const val COLUMN_MOBILE_NUMBER= "mobile_number"
        private const val COLUMN_GENDER = "gender"
        private const val COLUMN_DIABETICS = "diabetics"
    }

    override fun onCreate(db: SQLiteDatabase?) {
        val createTable = "CREATE TABLE $TABLE_NAME (" +
                "$COLUMN_ID INTEGER PRIMARY KEY AUTOINCREMENT, " +
                "$COLUMN_NAME TEXT, " +
                "$COLUMN_AGE TEXT, " +
                "$COLUMN_MOBILE_NUMBER TEXT, " +
                "$COLUMN_GENDER TEXT," +
                "$COLUMN_DIABETICS TEXT" +
                ")"
```

```
        db?.execSQL(createTable)
    }

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

    fun insertSurvey(survey: Survey) {
        val db = writableDatabase
        val values = ContentValues()
        values.put(COLUMN_NAME, survey.name)
        values.put(COLUMN_AGE, survey.age)
        values.put(COLUMN_MOBILE_NUMBER, survey.mobileNumber)
        values.put(COLUMN_GENDER, survey.gender)
        values.put(COLUMN_DIABETICS, survey.diabetics)
        db.insert(TABLE_NAME, null, values)
        db.close()
    }

    @SuppressLint("Range")
    fun getSurveyByAge(age: String): Survey? {
        val db = readableDatabase
        val cursor: Cursor = db.rawQuery("SELECT * FROM $TABLE_NAME WHERE
$COLUMN_AGE = ?", arrayOf(age))
        var survey: Survey? = null
        if (cursor.moveToFirst()) {
            survey = Survey(
                id = cursor.getInt(cursor.getColumnIndex(COLUMN_ID)),
                name =
cursor.getString(cursor.getColumnIndex(COLUMN_NAME)),
                age = cursor.getString(cursor.getColumnIndex(COLUMN_AGE)),
                mobileNumber =
cursor.getString(cursor.getColumnIndex(COLUMN_MOBILE_NUMBER)),
                gender =
cursor.getString(cursor.getColumnIndex(COLUMN_GENDER)),
                diabetics =
cursor.getString(cursor.getColumnIndex(COLUMN_DIABETICS)),
            )
        }
        cursor.close()
        db.close()
        return survey
    }
    @SuppressLint("Range")
    fun getSurveyById(id: Int): Survey? {
        val db = readableDatabase
        val cursor: Cursor = db.rawQuery("SELECT * FROM $TABLE_NAME WHERE
$COLUMN_ID = ?", arrayOf(id.toString()))
        var survey: Survey? = null
        if (cursor.moveToFirst()) {
            survey = Survey(
                id = cursor.getInt(cursor.getColumnIndex(COLUMN_ID)),
                name =
cursor.getString(cursor.getColumnIndex(COLUMN_NAME)),
                age = cursor.getString(cursor.getColumnIndex(COLUMN_AGE)),
                mobileNumber =
```

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```
cursor.getString(cursor.getColumnIndex(COLUMN_MOBILE_NUMBER)),
                gender =
cursor.getString(cursor.getColumnIndex(COLUMN_GENDER)),
                diabetics =
cursor.getString(cursor.getColumnIndex(COLUMN_DIABETICS)),
            )
        }
        cursor.close()
        db.close()
        return survey
    }

    @SuppressLint("Range")
    fun getAllSurveys(): List<Survey> {
        val surveys = mutableListOf<Survey>()
        val db = readableDatabase
        val cursor: Cursor = db.rawQuery("SELECT * FROM $TABLE_NAME", null)
        if (cursor.moveToFirst()) {
            do {
                val survey = Survey(
                    cursor.getInt(cursor.getColumnIndex(COLUMN_ID)),
                    cursor.getString(cursor.getColumnIndex(COLUMN_NAME)),
                    cursor.getString(cursor.getColumnIndex(COLUMN_AGE)),

cursor.getString(cursor.getColumnIndex(COLUMN_MOBILE_NUMBER)),
                    cursor.getString(cursor.getColumnIndex(COLUMN_GENDER)),

cursor.getString(cursor.getColumnIndex(COLUMN_DIABETICS))
                )
                surveys.add(survey)
            } while (cursor.moveToNext())
        }
        cursor.close()
        db.close()
        return surveys
    }

}
```

User.kt

```
package com.example.surveyapplication

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?,

    )
```

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UserDao.kt

```
package com.example.surveyapplication

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)
}
```

UserDatabase.kt

```
package com.example.surveyapplication

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
            }
        }
    }
}
```

UserDatabaseHelper.kt

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```
package com.example.surveyapplication

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
    }

}
```

ExampleInstrumentedTest.kt

```
package com.example.surveyapplication

import androidx.test.platform.app.InstrumentationRegistry
import androidx.test.ext.junit.runners.AndroidJUnit4

import org.junit.Test
import org.junit.runner.RunWith

import org.junit.Assert.*

/**
 * Instrumented test, which will execute on an Android device.
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
@RunWith(AndroidJUnit4::class)
class ExampleInstrumentedTest {
    @Test
    fun useAppContext() {
        // Context of the app under test.
        val appContext =
InstrumentationRegistry.getInstrumentation().targetContext
        assertEquals("com.example.surveyapplication",
appContext.packageName)
    }
}
```

ExampleUnitTest.kt

```
package com.example.surveyapplication

import org.junit.Test

import org.junit.Assert.*

/**
 * Example local unit test, which will execute on the development machine
(host).
 *
 * See [testing documentation](http://d.android.com/tools/testing).
 */
class ExampleUnitTest {
    @Test
    fun addition_isCorrect() {
        assertEquals(4, 2 + 2)
```

```
    }
}
```