A sleep tracking app for a better night's rest

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DESCRIPTION

- 1. Sleep Tracking: Monitor sleep duration, stages (light, deep, REM), and sleep cycles.
- 2. Sleep Score: Get a daily sleep score based on sleep quality, duration, and consistency.
- 3. Sleep Stage Tracking: Visualize sleep stages in real-time, identifying light, deep, and REM sleep.
- 4. Smart Alarms: Wake up during light sleep phases, feeling refreshed and energized.
- 5. Sleep Diary: Log sleep-related events, such as coffee consumption, exercise, or stress levels.
- 6. Personalized Recommendations: Receive tailored advice on sleep schedule, relaxation techniques, and sleep environment optimization.
- 7. Sleep Goals: Set and track sleep goals, monitoring progress over time.
- 8. Mood Tracking: Monitor emotions and energy levels, correlating them with sleep quality.
- 9. Relaxation Techniques: Access guided meditations, breathing exercises, and soothing sounds.
- 10. Integrations: Connect with popular health and fitness apps (e.g., Fitbit, Apple Health).

Main Activity:

```
package com.example.projectoneimport androidx.test.platform.app.
InstrumentationRegistryimport androidx.test.ext.junit.runners.
AndroidJUnit4import org.junit.Testimport org.
junit.runner.RunWithimport 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.projectone",
 appContext.packageName)    }}
```

```
<?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.ProjectOne"
   tools:targetApi="31">
     <activity
android:name=".TrackActivity"
    android:exported="false"
    android:label="@string/title_activity_track"
android:theme="@style/Theme.ProjectOne" />        <activity
```

```
<activity             android:name=".TrackActivity“
  android:exported="false"
android:label="@string/title_activity_track"
android:theme="@style/Theme.ProjectOne" />
 <activity
 android:name=".MainActivity"
 android:exported="false"
android:label="@string/app_name"
android:theme="@style/Theme.ProjectOne" />
   <activity
android:name=".MainActivity2"
  android:exported="false"
     android:label="RegisterActivity"
android:theme="@style/Theme.ProjectOne" />
   <activity
 android:name=".LoginActivity"
   android:exported="true"
 android:label="@string/app_name"
android:theme="@style/Theme.ProjectOne">
   <intent-filter>
   <action android:name="android.intent.action.MAIN" />
```

```
Text(
        fontSize = 36.sp,
        fontWeight = FontWeight.ExtraBold,
        fontFamily = FontFamily.Cursive,
        color = Color.White,
        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") },
            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,
                        MainPage::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"
            }
        },
        modifier = Modifier.padding(top = 16.dp)
    ) {
        Text(text = "Login")
    }
    Row {
        TextButton(onClick = {context.startActivity(
            Intent(
                context,
                MainActivity::class.java
            )
        )}
        )
        { Text(color = Color.White,text = "Sign up") }
        TextButton(onClick = {
        })

        {
            Spacer(modifier = Modifier.width(60.dp))
            Text(color = Color.White,text = "Forget password?")
```

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

MAIN PAGE.KT

```
package com.example.snackordering

import android.annotation.SuppressLint
import android.content.Context
import android.os.Bundle
import android.widget.Toast
import androidx.activity.ComponentActivity
import androidx.activity.compose.setContent
import androidx.annotation.DrawableRes
import androidx.annotation.StringRes
import androidx.compose.foundation.Image
import androidx.compose.foundation.background
import androidx.compose.foundation.layout.*
import androidx.compose.foundation.shape.CircleShape
import androidx.compose.foundation.shape.RoundedCornerShape
import androidx.compose.material.*
import androidx.compose.material.icons.Icons
import androidx.compose.material.icons.filled.*
import androidx.compose.runtime.Composable
import androidx.compose.ui.Alignment
import androidx.compose.ui.Modifier
import androidx.compose.ui.draw.clip
import androidx.compose.ui.graphics.Color
import androidx.compose.foundation.lazy.LazyColumn
import androidx.compose.foundation.lazy.items
import androidx.compose.material.Text
import androidx.compose.ui.unit.dp
import androidx.compose.ui.graphics.RectangleShape
import androidx.compose.ui.layout.ContentScale
import androidx.compose.ui.platform.LocalContext
import androidx.compose.ui.res.painterResource
import androidx.compose.ui.res.stringResource
import androidx.compose.ui.text.font.FontWeight
import androidx.compose.ui.unit.sp
import androidx.core.content.ContextCompat.startActivity
import com.example.snackordering.ui.theme.SnackOrderingTheme

import android.content.Intent as Intent1


class MainPage : ComponentActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContent {
            SnackOrderingTheme {
                // A surface container using the 'background' color from the theme
                Surface(
                    modifier = Modifier.fillMaxSize(),
                    color = MaterialTheme.colors.background
                ) {
```

```
 FinalView(this)
                val context = LocalContext.current
                //PopularFoodColumn(context)
            }
        }
      }
   }
}


@Composable
fun TopPart() {

   Row(
      modifier = Modifier
         .fillMaxWidth()
         .background(Color(0xffeceef0)), Arrangement.SpaceBetween
   ) {
      Icon(
         imageVector = Icons.Default.Add, contentDescription = "Menu Icon",
 Modifier

               .clip(CircleShape)
               .size(40.dp),
           tint = Color.Black,
       )
       Column(horizontalAlignment = Alignment.CenterHorizontally) {
           Text(text = "Location", style = MaterialTheme.typography.subtitle1, color =
Color.Black)
           Row {
               Icon(
                   imageVector = Icons.Default.LocationOn,
                   contentDescription = "Location",
                   tint = Color.Red,
               )
               Text(text = "Accra" , color = Color.Black)
           }

       }
       Icon(
           imageVector = Icons.Default.Notifications, contentDescription = "Notification
Icon",
 Modifier
                .size(45.dp),
            tint = Color.Black,
        )
    }
}

@Composable
fun CardPart() {
    Card(modifier = Modifier.size(width = 310.dp, height = 150.dp),
RoundedCornerShape(20.dp)) {
        Row(modifier = Modifier.padding(10.dp), Arrangement.SpaceBetween) {
            Column(verticalArrangement = Arrangement.spacedBy(12.dp)) {
                Text(text = "Get Special Discounts")
                Text(text = "up to 85%", style = MaterialTheme.typography.h5)
                Button(onClick = {}, colors = ButtonDefaults.buttonColors(Color.White)) {
                    Text(text = "Claim voucher", color = MaterialTheme.colors.surface)
                }
            }
            Image(
                painter = painterResource(id = R.drawable.food_tip_im),
                contentDescription = "Food Image", Modifier.size(width = 100.dp, height =
200.dp)
            )
 )
        }
    }
}


@Composable
fun PopularFood(
    @DrawableRes drawable: Int,
    @StringRes text1: Int,
    context: Context
) {
    Card(
        modifier = Modifier
            .padding(top=20.dp, bottom = 20.dp, start = 65.dp)
            .width(250.dp)

    ) {
```

```
Column(
            verticalArrangement = Arrangement.Top,
            horizontalAlignment = Alignment.CenterHorizontally
        ) {
            Spacer(modifier = Modifier.padding(vertical = 5.dp))
            Row(
                modifier = Modifier
                    .fillMaxWidth(0.7f), Arrangement.End
            ) {
                Icon(
                    imageVector = Icons.Default.Star,
                    contentDescription = "Star Icon",
                    tint = Color.Yellow
                )
                Text(text = "4.3", fontWeight = FontWeight.Black)
            }
            Image(
                painter = painterResource(id = drawable),
                contentDescription = "Food Image",
                contentScale = ContentScale.Crop,
modifier = Modifier
                .size(100.dp)
                .clip(CircleShape)
        )
        Text(text = stringResource(id = text1), fontWeight = FontWeight.Bold)
        Row(modifier = Modifier.fillMaxWidth(0.7f), Arrangement.SpaceBetween) {
            /*TODO Implement Prices for each card*/
            Text(
                text = "$50",
                style = MaterialTheme.typography.h6,
                fontWeight = FontWeight.Bold,
                fontSize = 18.sp
            )

            IconButton(onClick = {

                //var no=FoodList.lastIndex;
                //Toast.
                val intent = Intent1(context, TargetActivity::class.java)
                context.startActivity(intent)
```

```
 }) {
                    Icon(
                        imageVector = Icons.Default.ShoppingCart,
                        contentDescription = "shopping cart",
                    )
                }
            }
        }
    }
}



private val FoodList = listOf(
    R.drawable.sandwish to R.string.sandwich,
    R.drawable.sandwish to R.string.burgers,
    R.drawable.pack to R.string.pack,
    R.drawable.pasta to R.string.pasta,
 R.drawable.tequila to R.string.tequila,
    R.drawable.wine to R.string.wine,
    R.drawable.salad to R.string.salad,
    R.drawable.pop to R.string.popcorn
).map { DrawableStringPair(it.first, it.second) }

private data class DrawableStringPair(
    @DrawableRes val drawable: Int,
    @StringRes val text1: Int
)



@Composable
fun App(context: Context) {

    Column(
        modifier = Modifier
            .fillMaxSize()
            .background(Color(0xffeceef0))
            .padding(10.dp),
 verticalArrangement = Arrangement.Top,
        horizontalAlignment = Alignment.CenterHorizontally
    ) {
        Surface(modifier = Modifier, elevation = 5.dp) {
            TopPart()
        }
        Spacer(modifier = Modifier.padding(10.dp))
        CardPart()

        Spacer(modifier = Modifier.padding(10.dp))
        Row(modifier = Modifier.fillMaxWidth(), Arrangement.SpaceBetween) {
            Text(text = "Popular Food", style = MaterialTheme.typography.h5, color =
Color.Black)
            Text(text = "view all", style = MaterialTheme.typography.subtitle1,  color =
Color.Black)
        }
        Spacer(modifier = Modifier.padding(10.dp))
        PopularFoodColumn(context) // <- call the function with parentheses
    }
}
```

```
@Composable
fun PopularFoodColumn(context: Context) {

    LazyColumn(
        modifier = Modifier.fillMaxSize(),

        content = {
            items(FoodList) { item ->
                PopularFood(context = context,drawable =
item.drawable, text1 = item.text1)
                abstract class Context
            }
        },
        verticalArrangement = Arrangement.spacedBy(16.dp))
}


@SuppressLint("UnusedMaterialScaffoldPaddingParameter")
```

```
@Composable
fun FinalView(mainPage: MainPage) {
    SnackOrderingTheme {
        Scaffold() {
            val context = LocalContext.current
            App(context)
        }
    }
}
```

ORDER.KT

```
package com.example.snackordering

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

@Entity(tableName = "order_table")
data class Order(
    @PrimaryKey(autoGenerate = true) val id: Int?,
    @ColumnInfo(name = "quantity") val quantity:
String?,
    @ColumnInfo(name = "address") val address:
```

```
String?,
    @ColumnInfo(name = "address") val address:
String?,
)
```

ORDERDAO.KT

```
package com.example.snackordering
import androidx.room.*
@Dao
interface OrderDao {
 @Query("SELECT * FROM order_table WHERE
address= :address")
    suspend fun getOrderByAddress(address: String): Order?

    @Insert(onConflict = OnConflictStrategy.REPLACE)
    suspend fun insertOrder(order: Order)

    @Update
    suspend fun updateOrder(order: Order)

    @Delete
    suspend fun deleteOrder(order: Order)
}
```

ORDERDATABASE.KT

```
package com.example.snackordering

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

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

    abstract fun orderDao(): OrderDao

    companion object {

        @Volatile
        private var instance: OrderDatabase? = null

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

ORDER DATABASE HELPER.KT

```
package com.example.snackordering

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

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

        private const val TABLE_NAME = "order_table"
        private const val COLUMN_ID = "id"
        private const val COLUMN_QUANTITY = "quantity"
        private const val COLUMN_ADDRESS = "address"
    }
```

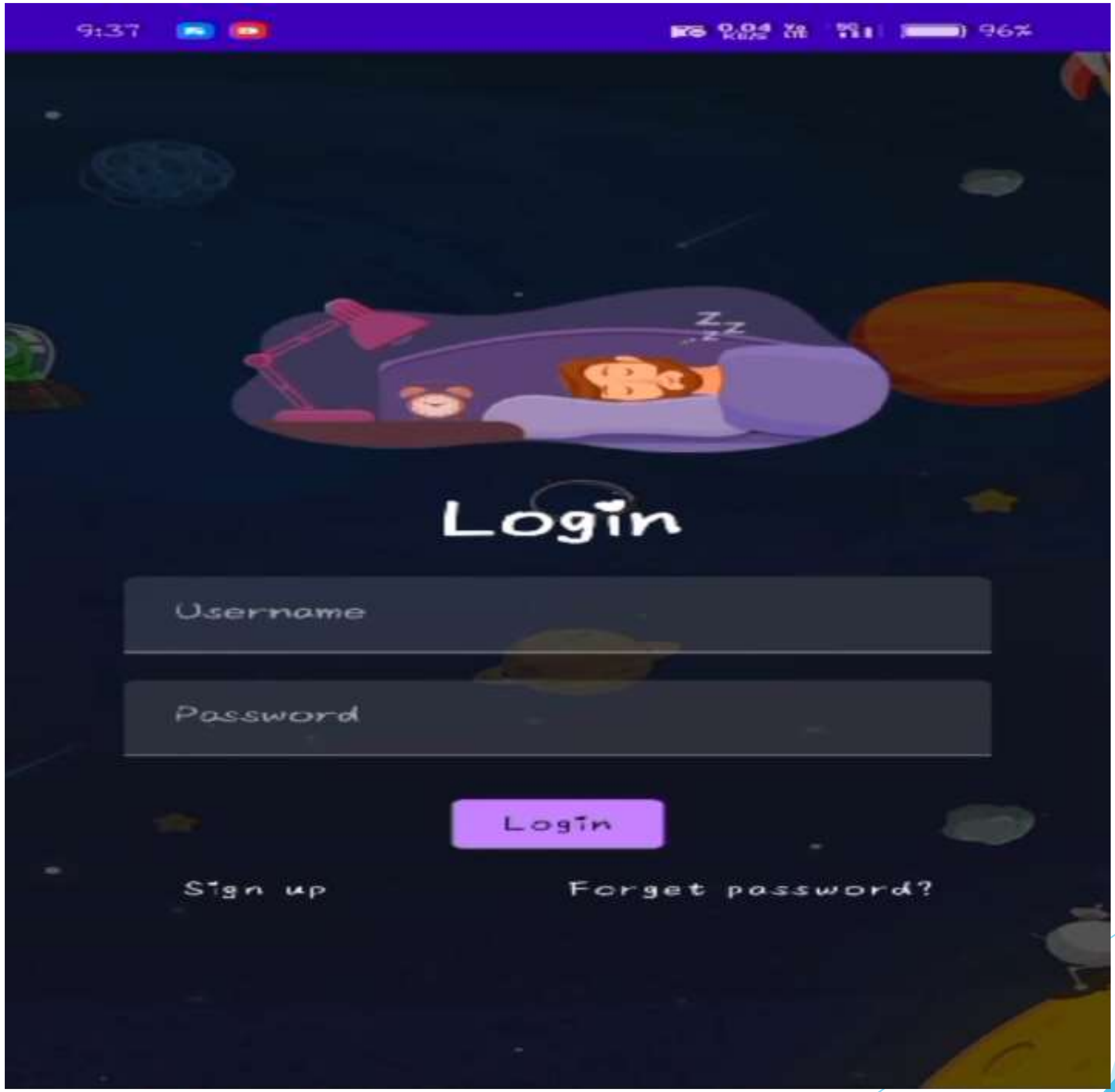
```
override fun onCreate(db: SQLiteDatabase?) {
        val createTable = "CREATE TABLE $TABLE_NAME (" +
                "${COLUMN_ID} INTEGER PRIMARY KEY AUTOINCREMENT, " +
                "${COLUMN_QUANTITY} Text, " +
                "${COLUMN_ADDRESS} TEXT " +
                ")"

        db?.execSQL(createTable)
    }

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

    fun insertOrder(order: Order) {
        val db = writableDatabase
        val values = ContentValues()
```

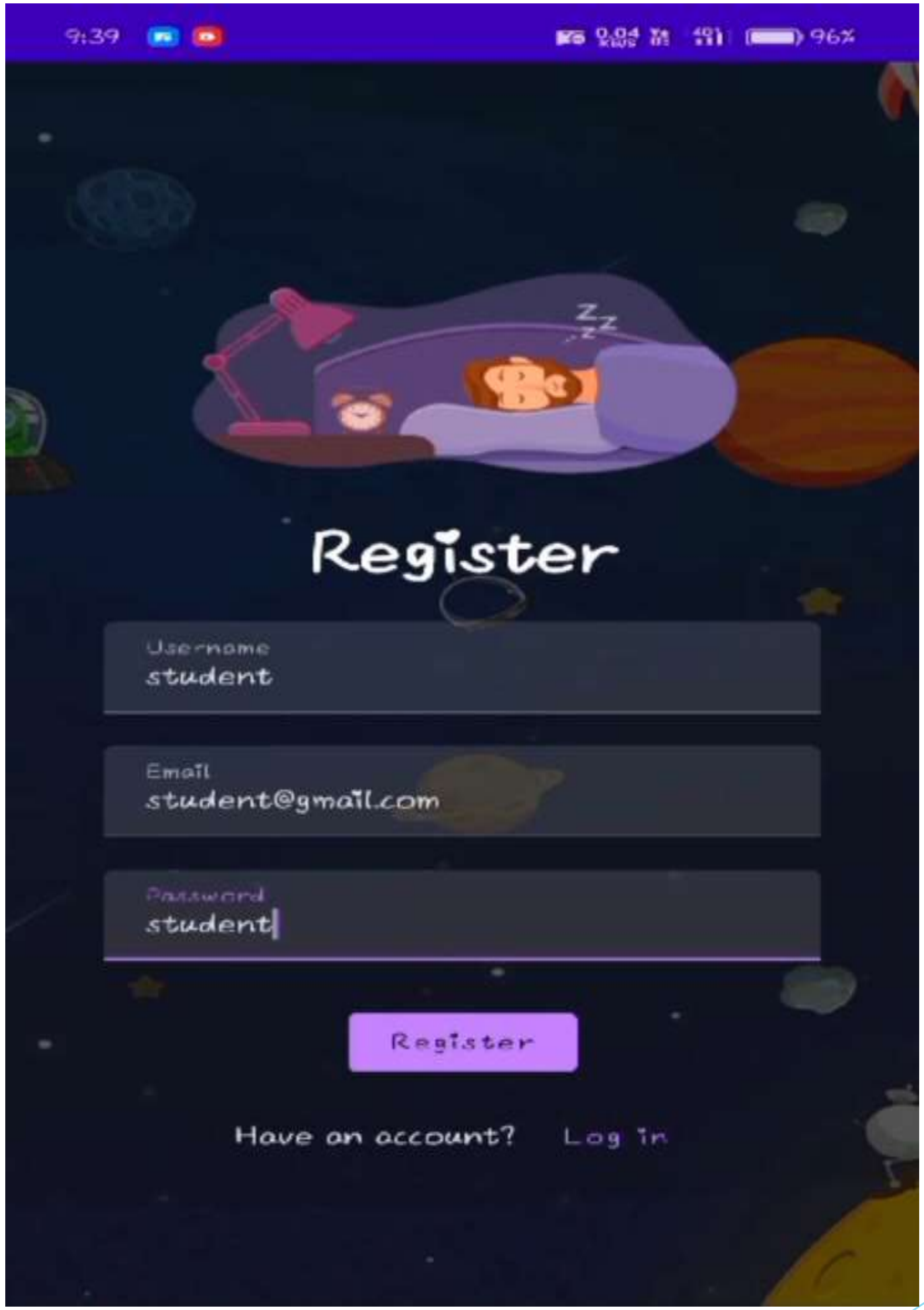
```
values.put(COLUMN_QUANTITY, order.quantity)
        values.put(COLUMN_ADDRESS, order.address)
        db.insert(TABLE_NAME, null, values)
        db.close()
    }



    @SuppressLint("Range")
    fun getOrderByQuantity(quantity: String): Order? {
        val db = readableDatabase
        val cursor: Cursor = db.rawQuery("SELECT * FROM $TABLE_NAME WHERE $COLUMN_QUANTITY = ?",
arrayOf(quantity))
        var order: Order? = null
        if (cursor.moveToFirst()) {
            order = Order(
                id = cursor.getInt(cursor.getColumnIndex(COLUMN_ID)),
                quantity = cursor.getString(cursor.getColumnIndex(COLUMN_QUANTITY)),
                address = cursor.getString(cursor.getColumnIndex(COLUMN_ADDRESS)),
            )
        }
```

```
plugins {    id 'com.android.application’
   id 'org.jetbrains.kotlin.android’}
android {    namespace 'com.example.projectone’
   compileSdk 33     defaultConfig
 {
    applicationId "com.example.projectone"
     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.room:room-common:2.5.0’
 implementation 'androidx.room:room-ktx:2.5.0’
   testImplementation 'junit:junit:4.13.2'
"androidx.compose.ui:ui-tooling:$compose_ui_version"
debugImplementation "androidx.compose.ui:ui-test-manifest:
$compose_ui_version"}
```

OUTPUT:


9:37
96%
Login
Username
Password
Login
Sign up
Forget password?

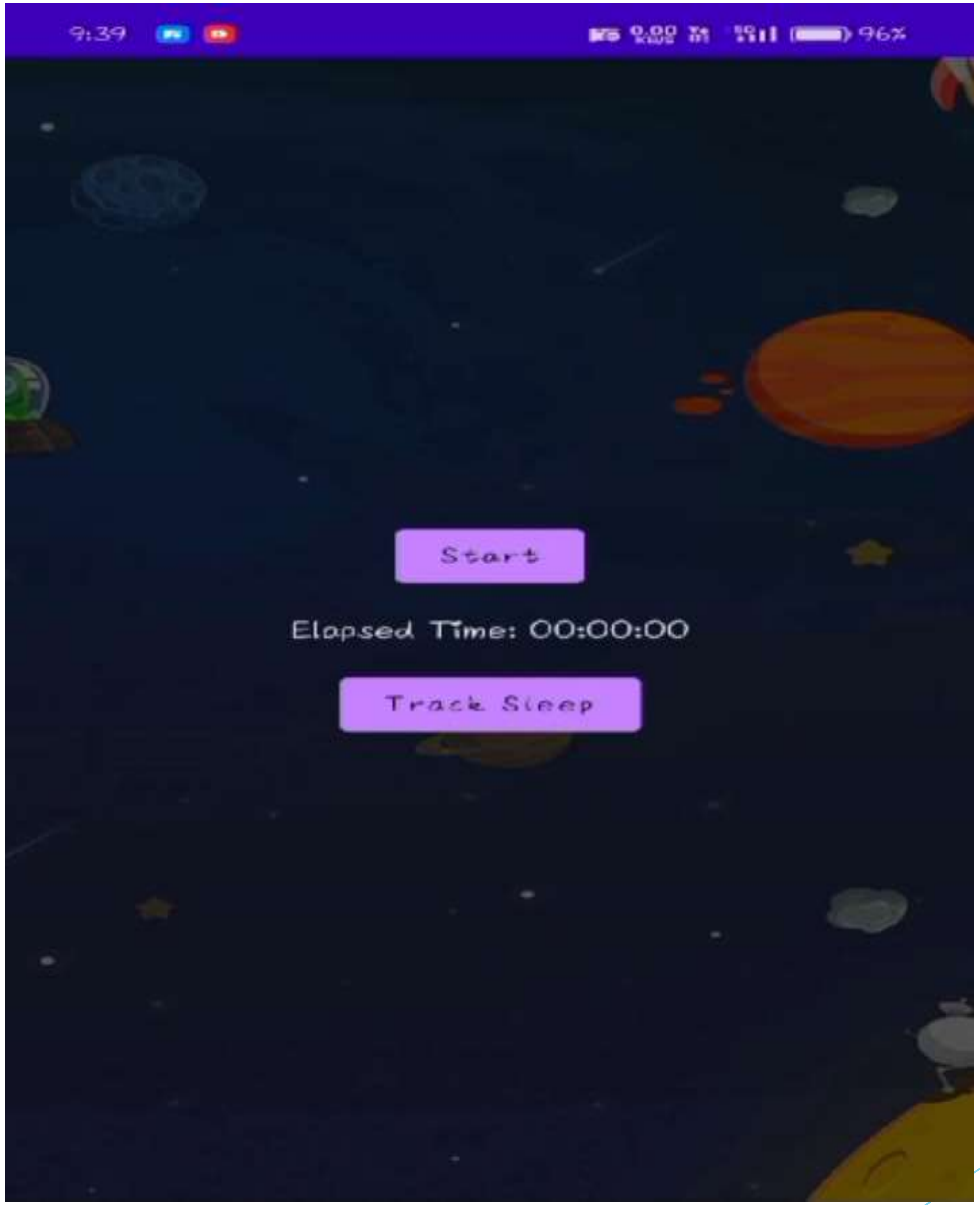

9:39 96%

Register

Username
student

Email
student@gmail.com

Password
student


9:39
96%
Start
Elapsed Time: 00:00:00
Track Sleep