

Class: **BSE-6A**

BAHRIA UNIVERSITY (KARACHI CAMPUS)

Open Ended Lab I – SPRING SEMESTER – 2022

Software Application for Mobile Devices

Morning

Lab Instructor: **Engr. Muhammad Rehan Baig**

Student’s Name: Abdul Basit Reg. No: 65175

Scenario

BSmart is a Company that make Smart Vehicles and Smart Home Appliances. BSmart is launching a mobile application that will control these products.

As a Software Engineer working in BSmart you are responsible for DESIGNING and implementing the following requirements and pages given below.

The Application contains following Pages and Requirements for the BSmart V1 Application.

Requirements and Pages

* **Login/Signup page**

User can Register/Authenticate from this page

* **Smart CCTV surveillance Page.**

This page shows the screening of all the connected cameras in the application.

* **All Appliances Rooms Page.**

This page shows the List of Rooms and launches that contains Smart Appliances like Smart Led, Smart Fan, Smart AC etc. that are controllable by Mobile Application.

User can Turn Led On/Off, AC On/Off using Mobile Application

User can use speech recognition for automated controlling of Appliances using Mobile Application.

* **Smart Garage Page**

From this page User can open or close garage door using mobile application

* **Smart Car Page**

From this page User can give ignition, turn on the AC, even user can park the car using mobile application.

Every point is important. Read the given scenario carefully to perform this Open-Ended Lab.

Solution:

1) Login page:

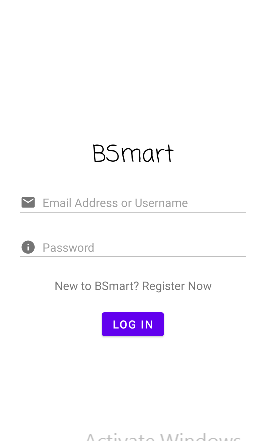
activity\_main.xml:

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:gravity="center"  
 tools:context=".login">  
  
 <TextView  
 android:layout\_height="wrap\_content"  
 android:layout\_width="match\_parent"  
 android:text="BSmart"  
 android:fontFamily="casual"  
 android:textColor="@color/black"  
 android:textSize="35dp"  
 android:gravity="center"></TextView>  
  
 <EditText  
 android:id="@+id/email"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginRight="4pt"  
 android:layout\_marginLeft="4pt"  
 android:layout\_marginTop="10pt"  
 android:hint="Email Address or Username"  
 android:layout\_marginStart="30dp"  
 android:layout\_marginEnd="30dp"  
 android:drawableLeft="@drawable/ic\_baseline\_email\_24"  
 android:drawablePadding="10dp"/>  
  
 <EditText  
 android:id="@+id/password"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="10pt"  
 android:layout\_marginLeft="4pt"  
 android:layout\_marginRight="4pt"  
 android:inputType="textPassword"  
 android:hint="Password"  
 android:layout\_marginStart="30dp"  
 android:layout\_marginEnd="30dp"  
 android:drawableLeft="@drawable/ic\_baseline\_info\_24"  
 android:drawablePadding="10dp"/>  
  
 <TextView  
 android:id="@+id/btn\_signup"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginRight="4pt"  
 android:layout\_marginLeft="4pt"  
 android:layout\_marginTop="10pt"  
 android:gravity="center\_horizontal"  
 android:textSize="18dp"  
 android:text="New to BSmart? Register Now" />  
  
 <Button  
 android:id="@+id/btn\_login"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="10pt"  
 android:textSize="17dp"  
 android:text="Log in"/>  
  
 </LinearLayout>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java:

package com.example.oel1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 EditText username=findViewById(R.id.*email*);  
 EditText password=findViewById(R.id.*password*);  
 Button btn\_login = findViewById(R.id.*btn\_login*);  
 TextView btn\_sign = findViewById(R.id.*btn\_signup*);  
  
 btn\_login.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 if(username.getText().toString().equals("xyz@gmail.com") && password.getText().toString().equals("abc123")){  
  
 startActivity(new Intent(MainActivity.this, DashboardActivity.class));  
 }  
  
 else  
 {  
 Toast.*makeText*(getApplicationContext(),"Invalid Login Details...",Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 });  
  
 btn\_sign.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 startActivity(new Intent(MainActivity.this, RegistrationActivity.class));  
 }  
 });  
 }  
}

Output:



2) Registration page:

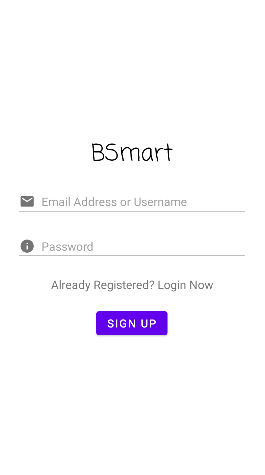
activity\_registration.xml:

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".RegistrationActivity">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:gravity="center"  
 tools:context=".login">  
  
 <TextView  
 android:layout\_height="wrap\_content"  
 android:layout\_width="match\_parent"  
 android:text="BSmart"  
 android:fontFamily="casual"  
 android:textColor="@color/black"  
 android:textSize="35dp"  
 android:gravity="center"></TextView>  
  
 <EditText  
 android:id="@+id/email"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginRight="4pt"  
 android:layout\_marginLeft="4pt"  
 android:layout\_marginTop="10pt"  
 android:hint="Email Address or Username"  
 android:layout\_marginStart="30dp"  
 android:layout\_marginEnd="30dp"  
 android:drawableLeft="@drawable/ic\_baseline\_email\_24"  
 android:drawablePadding="10dp"/>  
  
 <EditText  
 android:id="@+id/password"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="10pt"  
 android:layout\_marginLeft="4pt"  
 android:layout\_marginRight="4pt"  
 android:inputType="textPassword"  
 android:hint="Password"  
 android:layout\_marginStart="30dp"  
 android:layout\_marginEnd="30dp"  
 android:drawableLeft="@drawable/ic\_baseline\_info\_24"  
 android:drawablePadding="10dp"/>  
  
 <TextView  
 android:id="@+id/btn\_signup"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginRight="4pt"  
 android:layout\_marginLeft="4pt"  
 android:layout\_marginTop="10pt"  
 android:gravity="center\_horizontal"  
 android:textSize="18dp"  
 android:text="Already Registered? Login Now" />  
  
 <Button  
 android:id="@+id/btn\_login"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="10pt"  
 android:textSize="17dp"  
 android:text="Sign up"/>  
  
 </LinearLayout>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

RegistrationActivity.java:

package com.example.oel1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
import android.content.Intent;  
  
public class RegistrationActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_registration*);  
  
 EditText username=findViewById(R.id.*email*);  
 EditText passwordd=findViewById(R.id.*password*);  
 TextView btn2signup=findViewById(R.id.*btn\_signup*);  
 Button btn1login=findViewById(R.id.*btn\_login*);  
  
 btn1login.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 startActivity(new Intent(RegistrationActivity.this, MainActivity.class));  
 }  
 });  
  
 btn2signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String email = username.getText().toString().trim();  
 String password= passwordd.getText().toString().trim();  
  
 if(email.isEmpty())  
 {  
 username.setError("Email is empty");  
 username.requestFocus();  
 return;  
 }  
  
 else if(password.isEmpty())  
 {  
 passwordd.setError("Enter the password");  
 passwordd.requestFocus();  
 return;  
 }  
  
 else if(password.length()<5)  
 {  
 passwordd.setError("Length of the password should be more than 5");  
 passwordd.requestFocus();  
 return;  
 }  
  
 else  
 {  
 Toast.*makeText*(getApplicationContext(),"You are successfully Registered",Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 });  
 }  
}

Output:



3) Dashboard page:

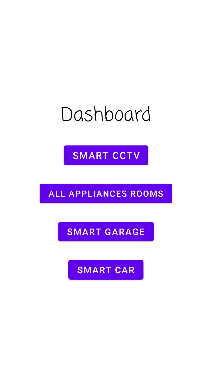
activity\_dashboard.xml:

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".DashboardActivity">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:gravity="center"  
 tools:context=".login">  
  
 <TextView  
 android:layout\_height="wrap\_content"  
 android:layout\_width="match\_parent"  
 android:text="Dashboard"  
 android:gravity="center"  
 android:textSize="35dp"  
 android:textColor="@color/black"  
 android:fontFamily="casual"></TextView>  
  
 <Button  
 android:id="@+id/cctv"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="10pt"  
 android:textSize="18dp"  
 android:text="Smart CCTV"/>  
  
 <Button  
 android:id="@+id/appliances"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="10pt"  
 android:textSize="16dp"  
 android:text="All Appliances Rooms"/>  
  
 <Button  
 android:id="@+id/garage"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="10pt"  
 android:textSize="17dp"  
 android:text="Smart Garage"/>  
  
 <Button  
 android:id="@+id/car"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_marginTop="10pt"  
 android:textSize="17dp"  
 android:text="Smart Car"/>  
  
 </LinearLayout>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

DashboardActivity.java:

package com.example.oel1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.graphics.Camera;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
public class DashboardActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_dashboard*);  
 Button btn1\_signup=findViewById(R.id.*cctv*);  
 Button btn2\_signup=findViewById(R.id.*appliances*);  
 Button btn3\_signup=findViewById(R.id.*garage*);  
 Button btn4\_signup=findViewById(R.id.*car*);  
  
 btn1\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 startActivity(new Intent(DashboardActivity.this, Cameraa.class));  
 }  
 });  
  
 btn2\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 startActivity(new Intent(DashboardActivity.this, Appliances.class));  
 }  
 });  
  
 btn3\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 startActivity(new Intent(DashboardActivity.this, Garage.class));  
 }  
 });  
  
 btn4\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 startActivity(new Intent(DashboardActivity.this, Car.class));  
 }  
 });  
  
 }  
}

Output:

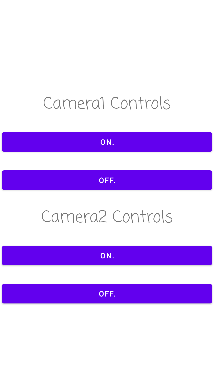


4) Camera page:

cameraa.java:

package com.example.oel1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.Toast;  
  
public class Cameraa extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_cameraa*);  
  
 Button btn1\_signup=findViewById(R.id.*btn\_on*);  
 Button btn2\_signup=findViewById(R.id.*btn\_off*);  
 Button btn3\_signup=findViewById(R.id.*btn\_on1*);  
 Button btn4\_signup=findViewById(R.id.*btn\_off1*);  
  
 btn1\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Camera1 turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
 btn3\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Camera2 turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn2\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Camera1 turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn4\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Camera2 turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
 }  
}

Output:

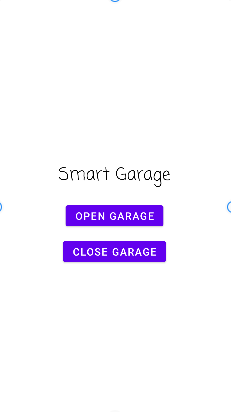


5) Garage page:

garage.java:

package com.example.oel1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.Toast;  
  
public class Garage extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_garage*);  
  
 Button btn1=findViewById(R.id.*on*);  
 Button btn2=findViewById(R.id.*off*);  
  
 btn1.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Garage Opened",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
 btn2.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Garage Closed",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
 }  
}

Output:

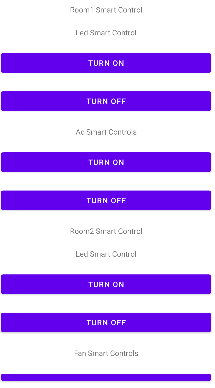


6) Appliances page:

appliances.java:

package com.example.oel1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.Toast;  
  
public class Appliances extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_appliances*);  
  
 Button btn1\_signup=findViewById(R.id.*btn\_on*);  
 Button btn2\_signup=findViewById(R.id.*btn\_off*);  
 Button btn3\_signup=findViewById(R.id.*btn\_on1*);  
 Button btn4\_signup=findViewById(R.id.*btn\_off1*);  
 Button btn11\_signup=findViewById(R.id.*btn\_on11*);  
 Button btn22\_signup=findViewById(R.id.*btn\_off22*);  
 Button btn33\_signup=findViewById(R.id.*btn\_on33*);  
 Button btn44\_signup=findViewById(R.id.*btn\_off44*);  
  
 btn1\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Led turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
 btn3\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Ac turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn2\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Led turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn4\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Ac turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
 btn11\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Led turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
 btn33\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Fan turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn22\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Led turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn44\_signup.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Fan turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
 }  
}

Output:



7) Car page:

car.java:

package com.example.oel1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.Toast;  
  
public class Car extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_car*);  
  
 Button btn1=findViewById(R.id.*on*);  
 Button btn2=findViewById(R.id.*off*);  
 Button btn3=findViewById(R.id.*on1*);  
 Button btn4=findViewById(R.id.*off1*);  
  
 btn1.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Ignition turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
 btn3.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Ac turned on.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn2.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Ignition turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
  
  
 btn4.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Toast.*makeText*(getApplicationContext(),"Ac turned off.",Toast.*LENGTH\_SHORT*).show();  
  
 }  
 });  
 }  
}

Output:

