

Experiment no: 7

Date:

Menu Driven Application

Aim:

Implement a menu-driven program to navigate to different activities.

ALGORITHM:

Step 1: Create multiple activities (e.g., Home, Settings, About).

Step 2: Define menu items in **res/menu/menu.xml**.

Step 3: Inflate menu in **onCreateOptionsMenu()**.

Step 4: Handle item clicks in **onOptionsItemSelected()**.

Step 5: Use Intents to navigate between activities.

CODE:

MainActivity.java:

```
package com.example.menudrivenjis;

import android.content.Intent;
import android.os.Bundle;

import com.google.android.material.snackbar.Snackbar;

import androidx.appcompat.app.AppCompatActivity;

import android.view.View;

import androidx.navigation.NavController;
import androidx.navigation.Navigation;
import androidx.navigation.ui.AppBarConfiguration;
import androidx.navigation.ui.NavigationUI;

import com.example.menudrivenjis.databinding.ActivityMainBinding;

import android.view.Menu;
```

```

import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {

    private AppBarConfiguration appBarConfiguration;
    private ActivityMainBinding binding;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        binding = ActivityMainBinding.inflate(getLayoutInflater());
        setContentView(binding.getRoot());

        setSupportActionBar(binding.toolbar);

        NavController navController = Navigation.findNavController(this,
R.id.nav_host_fragment_content_main);
        appBarConfiguration = new AppBarConfiguration.Builder(navController.getGraph()).build();
        NavigationUI.setupActionBarWithNavController(this, navController, appBarConfiguration);

        binding.fab.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Snackbar.make(view, "Replace with your own action", Snackbar.LENGTH_LONG)
                    .setAnchorView(R.id.fab)
                    .setAction("Action", null).show();
            }
        });
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.menu_main, menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        // Handle action bar item clicks here. The action bar will
        // automatically handle clicks on the Home/Up button, so long
        // as you specify a parent activity in AndroidManifest.xml.
        int id = item.getItemId();

```

```

//noinspection SimplifiableIfStatement
if (id == R.id.action_settings) {
    return true;
}
else if (id == R.id.pid)
{
    Intent i=new Intent(MainActivity.this, MainActivity2.class);
    startActivity(i);
}
else if(id==R.id.aid)
{
    Intent j=new Intent(MainActivity.this, Armstrong.class);
    startActivity(j);
}

return super.onOptionsItemSelected(item);
}

@Override
public boolean onSupportNavigateUp() {
    NavController navController = Navigation.findNavController(this,
R.id.nav_host_fragment_content_main);
    return NavigationUI.navigateUp(navController, appBarConfiguration)
        || super.onSupportNavigateUp();
}
}

```

MainActivity.xml

```

<menu 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"
    tools:context="com.example.menudrivenjis.MainActivity">
    <item
        android:id="@+id/action_settings"
        android:orderInCategory="100"
        android:title="@string/action_settings"

```

```

        app:showAsAction="never" />
    <item
        android:id="@+id/pid"
        android:orderInCategory="101"
        android:title="palindrome" />
    <item
        android:id="@+id/aid"
        android:orderInCategory="102"
        android:title="amstrong" />
</menu>

```

Palindrome.java :

```

package com.example.menudrivenjis;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity2 extends AppCompatActivity {
    Button b;
    EditText e1;
    TextView t1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main2);

        e1=findViewById(R.id.editTextText3);
        b= findViewById(R.id.button3);
        t1=findViewById(R.id.textView5);
        b.setOnClickListener(new View.OnClickListener() {

```

```

@Override
public void onClick(View v) {
    int x= Integer.parseInt(e1.getText().toString());
    int m=x;
    int n=0;

    while (x!=0)
    {
        int r=x%10;
        n=n*10+r;
        x=x/10;
    }
    if(m==n)
    {
        t1.setText(m + " is a Palindrome.");
    }
    else
    {t1.setText(m + " is not palindrome" );

    }
}
});
ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {
    Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
    v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);
    return insets;
});
}
}

```

Palindrome.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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

```

```
<TextView
    android:id="@+id/textViewHeading"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Palindrome"
    android:textSize="24sp"
    android:textStyle="bold"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="40dp" />
```

```
<EditText
    android:id="@+id/editTextText3"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter a number"
    android:inputType="number"
    app:layout_constraintTop_toBottomOf="@id/textViewHeading"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="40dp"
    android:padding="12dp" />
```

```
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Check"
    app:layout_constraintTop_toBottomOf="@id/editTextText3"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="24dp" />
```

```
<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Result will show here"
    app:layout_constraintTop_toBottomOf="@id/button3"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    android:layout_marginTop="24dp"
```

```
        android:textSize="18sp" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Amstrong.java :

```
package com.example.menudrivenjis;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class Amstrong extends AppCompatActivity {

    Button b;
    EditText e1;
    TextView t1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_amstrong);

        e1 = findViewById(R.id.editTextText2);
        b = findViewById(R.id.button2);
        t1 = findViewById(R.id.textView4);

        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String inputStr = e1.getText().toString();
                if (inputStr.isEmpty()) {
```

```

        t1.setText("Please enter a number");
        return;
    }

    int num = Integer.parseInt(inputStr);
    int originalNum = num;
    int digits = inputStr.length();
    int sum = 0;

    while (num > 0) {
        int digit = num % 10;
        // Calculate power manually because Math.pow returns double
        int power = 1;
        for (int i = 0; i < digits; i++) {
            power *= digit;
        }
        sum += power;
        num /= 10;
    }

    if (sum == originalNum) {
        t1.setText(originalNum + " is an Armstrong number.");
    } else {
        t1.setText(originalNum + " is NOT an Armstrong number.");
    }
}

});

ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main1), (v, insets) -> {
    Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
    v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);
    return insets;
});
}
}

```

Amstrong.xml :

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.appcompat.widget.LinearLayoutCompat
    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:id="@+id/main1"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
android:gravity="center_horizontal"
android:padding="24dp"
tools:context=".Amstrong">
```

```
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Armstrong"
    android:textSize="24sp"
    android:layout_marginBottom="24dp" />
```

```
<EditText
    android:id="@+id/editTextText2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="number"
    android:hint="Enter number"
    android:layout_marginBottom="24dp" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Result"
    android:layout_marginBottom="24dp" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Result will be shown here"
    android:textSize="18sp" />
```

```
</androidx.appcompat.widget.LinearLayoutCompat>
```

OUTPUT:



