ANIMAL VOICE DEMOSTRATION APLLICATION

USING ANDROID STUDIO

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**INTRODUCTION**

Mobile application development is the process of creating software applications that run on a mobile device, and a typical mobile application utilizes a network connection to work with remote computing resources. Android apps are primarily built using Java or Kotlin. There is more than one programming language and technology stack for building mobile apps – the key is picking a technology stack that is best suited for your mobile app. Mobile technologies advance much faster with new version of mobile platform.

The aim of our project is to build a mobile application named ‘Animal voice demonstration app” which is an educational based application where the user can see different animals name with pictures and also listen to the respective animal sound. It is developed for kids to learn different animals name and their sound. The pictures will help kids recognized animals with name and also sounds. This application is user and parent friendly.

**LITERATURE WORK**

1. **ANDROID STUDIO**

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems or as a subscription-based service in 2020. It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development. Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014. The first stable build was released in December 2014, starting from version 1.0.

1. **JAVA**

Java is a high-level, class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is a general-purpose programming language intended to let application developers write once, run anywhere (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation. Java applications are typically compiled to byte code that can run on any Java virtual machine (JVM) regardless of the underlying computer architecture. The syntax of Java is similar to C and C++, but has fewer low-level facilities than either of them. The Java runtime provides dynamic capabilities (such as reflection and runtime code modification) that are typically not available in traditional compiled languages. As of 2019, Java was one of the most popular programming languages in use according to GitHub, particularly for client-server web applications, with a reported 9 million developers.

1. **XML**

XML (Extensible Markup Language) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. The World Wide Web Consortium's XML 1.0 Specification of 1998 and several other related specifications. This is a powerful way to store data in a format that can be stored, searched and shared. Most importantly, since the fundamental of XML is standardized, if you share or transmit XML across systems or platforms, either locally or over the internet, the recipient can still parse the data due to standardized XML syntax.

**DESIGN**

For the design of the project, we have used XML for the layout of the app. Then we have written the logical part of the elements in the java. The Android platform uses XML files in projects for many purposes, from providing basic configuration of the application in the Manifest File, to using XML Layout Files to define the user interface.

  XML is well used in defining the UI of the application for the different reasons I mentioned earlier but the files that must be used to do that in Android are the Layout XML. Files which hold all the elements or the tools that we want to use in our application. Like the Text view’s, Buttons and other UI elements. XML also helps in providing various graphics to the elements or views to create a custom UI. That we put in Drawable XML files.

Firstly, we have designed a login page where the user has to enter E-mail address and password, if user has already registered then can login directly and also a new user can register by setting up a password and username as E-mail id.

After this, the next page is the Demonstration of animal sound with their respective images and names and the user can click button or slide vertically for next animal image and sound.

IF NOT

START

IF ALREADY USER?

DEMONSTRATION PAGE

LOGIN

REGISTER

**IMPLEMENTATION**

**Code Snippets:**

1. **Register module:** This module contains code for Sign Up page, and we used XML for the layout of the app and Java for the logical part.

**XML Code:**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout 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"

android:background="@drawable/login\_page"

android:theme="@android:style/Theme.Wallpaper.NoTitleBar"

tools:context=".MainActivity">

<EditText

android:id="@+id/username"

android:layout\_width="200dp"

android:layout\_height="40dp"

android:layout\_below="@+id/imageView"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="70dp"

android:background="#ACBBEE"

android:drawableLeft="@drawable/ic\_action\_user"

android:ems="10"

android:hint="User Name"

android:inputType="textPersonName"

android:textSize="16dp" />

<EditText

android:id="@+id/password"

android:layout\_width="200dp"

android:layout\_height="40dp"

android:layout\_below="@+id/username"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="33dp"

android:background="#ACBBEE"

android:drawableLeft="@drawable/ic\_action\_password"

android:ems="10"

android:hint="Password"

android:inputType="textPassword" />

<EditText

android:id="@+id/repassword"

android:layout\_width="200dp"

android:layout\_height="40dp"

android:layout\_below="@+id/password"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="33dp"

android:background="#ACBBEE"

android:drawableLeft="@drawable/ic\_action\_password"

android:ems="10"

android:hint="Retype password"

android:inputType="textPassword" />

<Button

android:id="@+id/btnsignup"

android:layout\_width="200dp"

android:layout\_height="wrap\_content"

android:layout\_below="@+id/repassword"

android:layout\_alignParentBottom="true"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="33dp"

android:layout\_marginBottom="260dp"

android:text="REGISTER"

android:textSize="20dp" />

<Button

android:id="@+id/btnsignin"

android:layout\_width="wrap\_content"

android:layout\_height="30dp"

android:layout\_below="@+id/repassword"

android:layout\_alignParentEnd="true"

android:layout\_alignParentRight="true"

android:layout\_alignParentBottom="true"

android:layout\_marginTop="116dp"

android:layout\_marginEnd="57dp"

android:layout\_marginRight="57dp"

android:layout\_marginBottom="209dp"

android:background="@color/black"

android:text="SIGN IN" />

<ImageView

android:id="@+id/imageView"

android:layout\_width="120dp"

android:layout\_height="120dp"

android:layout\_alignParentTop="true"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="30dp"

app:srcCompat="@drawable/logo" />

<TextView

android:id="@+id/textView2"

android:layout\_width="180dp"

android:layout\_height="20dp"

android:layout\_alignParentStart="true"

android:layout\_alignParentLeft="true"

android:layout\_alignParentBottom="true"

android:layout\_marginStart="72dp"

android:layout\_marginLeft="72dp"

android:layout\_marginBottom="223dp"

android:text="Already have an account?" />

<TextView

android:id="@+id/textView4"

android:layout\_width="wrap\_content"

android:layout\_height="40dp"

android:layout\_alignParentStart="true"

android:layout\_alignParentLeft="true"

android:layout\_alignParentTop="true"

android:layout\_marginStart="64dp"

android:layout\_marginLeft="64dp"

android:layout\_marginTop="173dp"

android:text="Register"

android:textSize="20dp" />

<!-- <TextView

android:id="@+id/textsignin"

android:layout\_width="wrap\_content"

android:layout\_height="60dp"

android:layout\_alignParentBottom="true"

android:layout\_centerHorizontal="true"

android:layout\_marginBottom="183dp"

android:text="Already User? Login Here."

android:textSize="18dp" />

-->

</RelativeLayout>

**Java Code:**

package com.example.animalvoicedemonstration;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.view.Window;

import android.view.WindowManager;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;

import org.w3c.dom.Text;

public class MainActivity extends AppCompatActivity {

EditText username, password, repassword ;

Button signup, signin;

DBHelper DB;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

username = (EditText) findViewById(R.id.username);

password = (EditText) findViewById(R.id.password);

repassword = (EditText) findViewById(R.id.repassword);

signup = (Button) findViewById(R.id.btnsignup);

signin = (Button) findViewById(R.id.btnsignin);

DB = new DBHelper(this);

signup.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String user = username.getText().toString();

String pass = password.getText().toString();

String repass = repassword.getText().toString();

if(user.equals("")||pass.equals("")||repass.equals(""))

Toast.makeText(MainActivity.this, "Please enter all the fields", Toast.LENGTH\_SHORT).show();

else{

if(pass.equals(repass)){

Boolean checkuser = DB.checkusername(user);

if(checkuser==false){

Boolean insert = DB.insertData(user, pass);

if(insert==true){

Toast.makeText(MainActivity.this, "Registered successfully", Toast.LENGTH\_SHORT).show();

Intent intent = new Intent(getApplicationContext(),HomeActivity.class);

startActivity(intent);

}else{

Toast.makeText(MainActivity.this, "Registration failed", Toast.LENGTH\_SHORT).show();

}

}

else{

Toast.makeText(MainActivity.this, "User already exists! please sign in", Toast.LENGTH\_SHORT).show();

}

}else{

Toast.makeText(MainActivity.this, "Passwords not matching", Toast.LENGTH\_SHORT).show();

}

} }

});

signin.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent intent = new Intent(getApplicationContext(), LoginActivity.class);

startActivity(intent);

}

});

}

}

1. **Login module:** This module contains code for login page, and we have used XML for the layout of the app and Java for the logical part.

**XML Code:**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout 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"

android:background="@drawable/login\_page"

android:padding="10dp"

tools:context=".LoginActivity">

<EditText

android:id="@+id/username1"

android:layout\_width="200dp"

android:layout\_height="40dp"

android:layout\_below="@+id/imageView2"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"

android:background="#ACBBEE"

android:drawableLeft="@drawable/ic\_action\_user"

android:ems="10"

android:hint="Username"

android:inputType="textPersonName"

android:textSize="16dp" /

<EditText

android:id="@+id/password1"

android:layout\_width="200dp"

android:layout\_height="40dp"

android:layout\_below="@+id/username1"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"

android:background="#ACBBEE"

android:drawableLeft="@drawable/ic\_action\_password"

android:ems="10"

android:hint="Password"

android:inputType="textPassword" />

<Button

android:id="@+id/btnsignin1"

android:layout\_width="200dp"

android:layout\_height="wrap\_content"

android:layout\_below="@+id/password1"

android:layout\_alignParentBottom="true"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"

android:layout\_marginBottom="300dp"

android:text="SIGN IN"

android:textSize="20dp"

<ImageView

android:id="@+id/imageView2"

android:layout\_width="120dp"

android:layout\_height="120dp"

android:layout\_alignParentTop="true"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="30dp"

app:srcCompat="@drawable/logo" />

<Button

android:id="@+id/gotoRegister"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@+id/password1"

android:layout\_alignParentEnd="true"

android:layout\_alignParentRight="true"

android:layout\_alignParentBottom="true"

android:layout\_marginTop="144dp"

android:layout\_marginEnd="51dp"

android:layout\_marginRight="51dp"

android:layout\_marginBottom="232dp"

android:text="SIGN UP"

android:textSize="14dp" />

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentBottom="true"

android:layout\_marginEnd="12dp"

android:layout\_marginRight="12dp"

android:layout\_marginBottom="252dp"

android:layout\_toStartOf="@+id/gotoRegister"

android:layout\_toLeftOf="@+id/gotoRegister"

android:text="Don't have an account?"

android:textSize="16dp" />

<TextView

android:id="@+id/textView3"

android:layout\_width="wrap\_content"

android:layout\_height="40dp"

android:layout\_alignParentStart="true"

android:layout\_alignParentLeft="true"

android:layout\_alignParentTop="true"

android:layout\_marginStart="66dp"

android:layout\_marginLeft="66dp"

android:layout\_marginTop="162dp"

android:text="Login"

android:textColor="@android:color/secondary\_text\_dark"

android:textColorHighlight="#9983CC39"

android:textColorHint="#808080"

android:textSize="20dp" />

<!-- <TextView

android:id="@+id/visitRegister"

android:layout\_width="wrap\_content"

android:layout\_height="35dp"

android:layout\_below="@+id/password1"

android:layout\_alignParentEnd="true"

android:layout\_alignParentRight="true"

android:layout\_alignParentBottom="true"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="144dp"

android:layout\_marginEnd="79dp"

android:layout\_marginRight="79dp"

android:layout\_marginBottom="250dp"

android:text="New user? Register here."

android:textSize="18dp" /> -->

</RelativeLayout>

**Java Code:**

package com.example.animalvoicedemonstration;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

import android.os.Bundle;

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.Toast;

public class LoginActivity extends AppCompatActivity {

EditText username, password, visitregister;

Button btnlogin ,btnregister;

DBHelper DB;

@SuppressLint("WrongViewCast")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_login);

username = (EditText) findViewById(R.id.username1);

password = (EditText) findViewById(R.id.password1);

btnlogin = (Button) findViewById(R.id.btnsignin1);

btnregister = findViewById(R.id.gotoRegister);

DB = new DBHelper(this);

btnlogin.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String user = username.getText().toString();

String pass = password.getText().toString();

if(user.equals("")||pass.equals(""))

Toast.makeText(LoginActivity.this, "Please enter all the fields", Toast.LENGTH\_SHORT).show();

else{

Boolean checkuserpass = DB.checkusernamepassword(user, pass);

if(checkuserpass==true){

Toast.makeText(LoginActivity.this, "Sign in successfull", Toast.LENGTH\_SHORT).show();

Intent intent = new Intent(getApplicationContext(), HomeActivity.class);

startActivity(intent);

}else{

Toast.makeText(LoginActivity.this, "Invalid Credentials", Toast.LENGTH\_SHORT).show();

}

}

});

btnregister.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent intent = new Intent(getApplicationContext(), MainActivity.class);

startActivity(intent);

}

});

}

}

**3. demonstration Module**: This module contains the animal pictures and their respective sound part, and we have used XML for the layout of the app and Java for the logical part.

**XML Code:**

<?xml version="1.0" encoding="utf-8"?>

<FrameLayout 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/activity\_main"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:theme="@android:style/Theme.Wallpaper.NoTitleBar.Fullscreen"

tools:context=".HomeActivity">

<androidx.viewpager.widget.ViewPager

android:id="@+id/pager"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent" />

<RelativeLayout

android:id="@+id/wrapper"

android:layout\_width="wrap\_content"

android:layout\_height="match\_parent">

<TextView

android:id="@+id/txtName"

android:layout\_width="200dp"

android:layout\_height="50dp"

android:layout\_above="@id/textView1"

android:layout\_centerHorizontal="true"

android:layout\_marginBottom="10dp"

android:background="@drawable/text\_button"

android:gravity="center"

android:text="Name"

android:textColor="#FFF"

android:textSize="20sp"></TextView>

<ImageButton

android:id="@+id/btnPrevious"

style="@style/Widget.AppCompat.Button.Colored"

android:layout\_width="40dp"

android:layout\_height="50dp"

android:layout\_centerVertical="true"

android:background="@drawable/text\_button"

android:src="@drawable/ic\_previous" />

<ImageButton

android:id="@+id/btnNext"

style="@style/Widget.AppCompat.Button.Colored"

android:layout\_width="40dp"

android:layout\_height="50dp"

android:layout\_alignParentRight="true"

android:layout\_centerVertical="true"

android:background="@drawable/text\_button"

android:src="@drawable/ic\_next" /

<ImageButton

android:id="@+id/btnSpeak"

style="@style/Widget.AppCompat.Button.Borderless"

android:layout\_width="75dp"

android:layout\_height="75dp"

android:layout\_alignParentBottom="true"

android:layout\_centerHorizontal="true"

android:background="@drawable/sound\_button"

android:src="@drawable/ic\_speak" />

<TextView

android:id="@+id/textView1"

android:layout\_width="match\_parent"

android:layout\_height="50dp"

android:layout\_above="@id/btnSpeak"

android:text="" />

</RelativeLayout>

</FrameLayout>

**Java code:**

package com.example.animalvoicedemonstration;

import androidx.appcompat.app.AppCompatActivity;

import androidx.viewpager.widget.ViewPager;

import android.annotation.SuppressLint;

import android.content.Intent;

import android.media.MediaPlayer;

import android.os.Bundle;

import android.view.View;

import android.widget.EditText;

import android.widget.ImageButton;

import android.widget.TextView;

public class HomeActivity extends AppCompatActivity implements View.OnClickListener {

String[] birds = {"cat","cow","dog","elephant","goat","lion","sheep"};

ViewPager pager;

ImageButton btnPrevious,btnNext,btnPlay;

TextView txtName;

MediaPlayer player;

@SuppressLint("WrongViewCast")

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_home);

//RandomAnimals

// Collections.shuffle(Arrays.asList(birds));

txtName = (TextView) findViewById(R.id.txtName);

txtName.setText(upperCaseFirstLetter(birds[0]));

pager = (ViewPager)findViewById(R.id.pager);

ViewPagerAdopter adopter = new ViewPagerAdopter(this,birds);

pager.setAdapter(adopter);

pager.setOnPageChangeListener(new ViewPager.OnPageChangeListener() {

@Override

public void onPageScrolled(int position, float positionOffset, int positionOffsetPixels) {

}

@Override public void onPageSelected(int position) {

txtName.setText(upperCaseFirstLetter(birds[position]));

if (player != null && player.isPlaying())

player.stop()

}

@Override

public void onPageScrollStateChanged(int state) {

}

});

btnPrevious = (ImageButton)findViewById(R.id.btnPrevious);

btnNext = (ImageButton)findViewById(R.id.btnNext);

btnPlay = (ImageButton) findViewById(R.id.btnSpeak);

btnNext.setOnClickListener(this);

btnPlay.setOnClickListener(this);

btnPrevious.setOnClickListener(this);

}

private String upperCaseFirstLetter(String birds) {

String str = new String(birds);

return str.substring(0, 1).toUpperCase() + str.substring(1).toLowerCase();

}

@Override public void onClick(View v) {

switch (v.getId()) {

case R.id.btnPrevious:

{

if(pager.getCurrentItem() == 0)

pager.setCurrentItem(birds.length-1,true);

else

pager.setCurrentItem(pager.getCurrentItem()-1,true);

}

break;

case R.id.btnNext:

{

if(pager.getCurrentItem() == birds.length-1)

pager.setCurrentItem(0,true);

else

pager.setCurrentItem(pager.getCurrentItem()+1,true);

}

break;

case R.id.btnSpeak:

{

int birdSound this.getResources().getIdentifier(txtName.getText().toString().toLowerCase(),"raw",this.getPackageName();

player = MediaPlayer.create(this,birdSound);

player.setLooping(false);

player.setVolume(1.0f,1.0f);

player.start();

}

break;

default:

break;

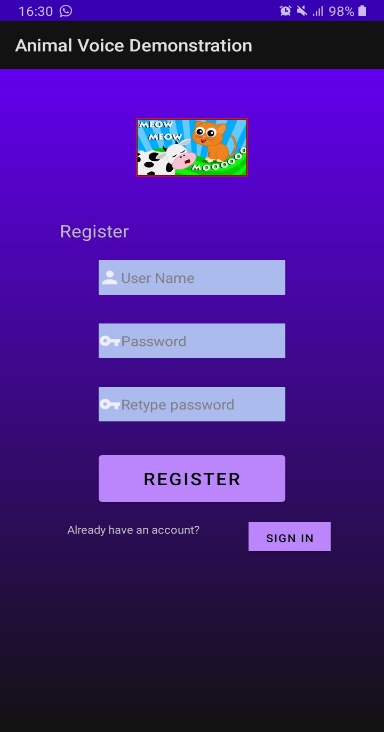
}

}

}

# RESULT AND DISCUSSION

**Figure 1: Register Page**



**Snapshot 1:** This snapshot shows the register page where users can register.

## Figure 2: Login Page

## 

**Snapshot 2:** This snapshot shows the login page where users can login.

**Figure 3: Demonstration Page**



**Snapshot 3:** This snapshot shows animal name with image and their respective sound.

**CONCLUSION**

The overall intention of this project is to develop an educational based android application on Animal voice Demonstration which is used is to provide kids a platform to learn about different animal names and their sounds with their respective images. It is a parent friendly application. By this project, we have gained a huge knowledge on how the android applications works and how there are being developed.

The future enhancement of this project is that we would like to include some additional images as well as sounds and also requirements that can be implemented and integrated into the application code, making it much more reliable and flexible, and also making it much more user interactive.

**REFERENCES**

* + Login and register page - <https://youtu.be/JAUlEZrkpRk>
  + Login and register authentication- <https://youtu.be/gaykE36N7PY>

<https://youtu.be/MFRFFTDAq8w>

* + Reset password- <https://youtu.be/UMNeeMSUZl0>
  + Overall Idea https://youtu.be/KqFvcv7TJXc