**PRACTICAL NO.9**

**a. Database Programming with SQLite**

**Code:**

**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">  
  
 <EditText  
 android:id="@+id/un"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="32dp"  
 android:layout\_marginEnd="32dp"  
 android:ems="10"  
 android:hint="Enter Username"  
 android:inputType="textPersonName"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.062" />  
  
 <EditText  
 android:id="@+id/pass"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="32dp"  
 android:layout\_marginEnd="32dp"  
 android:ems="10"  
 android:hint="Enter Password"  
 android:inputType="textPassword"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.15" />  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Save"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.099"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.238" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Read"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.498"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.238" />  
  
 <ListView  
 android:id="@+id/userList"  
 android:layout\_width="0dp"  
 android:layout\_height="400dp"  
 android:layout\_marginStart="32dp"  
 android:layout\_marginEnd="32dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.885" />  
  
 <Button  
 android:id="@+id/button3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Check"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.9"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.238" />  
  
 <Button  
 android:id="@+id/button4"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Change Pass"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.1"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.335" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.kt**

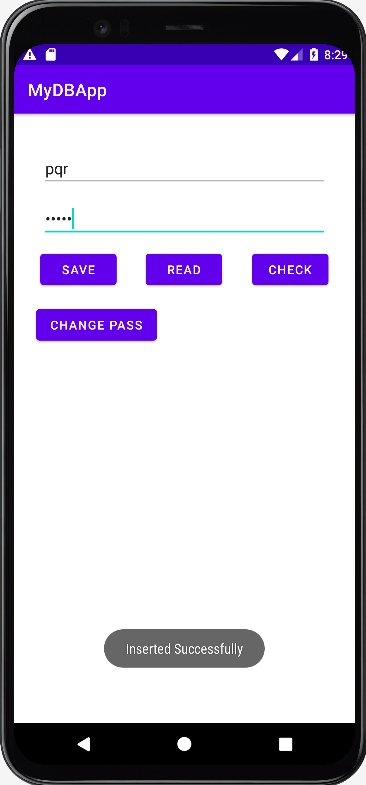
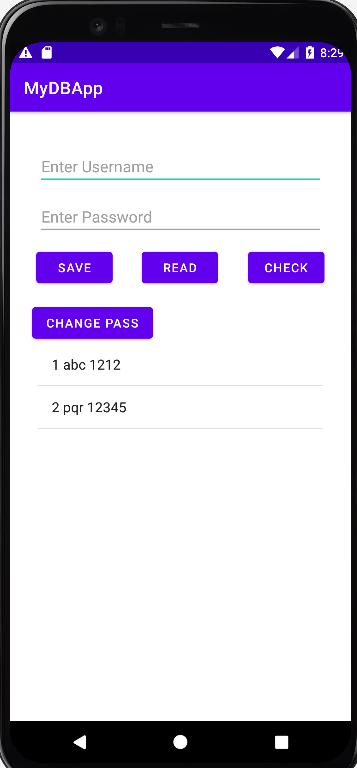
package com.example.mydbapp  
  
import androidx.appcompat.app.AppCompatActivity  
import android.os.Bundle  
import android.widget.ArrayAdapter  
import android.widget.Toast  
import kotlinx.android.synthetic.main.activity\_main.\*  
  
class MainActivity : AppCompatActivity() {  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.activity\_main)  
  
 var mydatabase=TyitDatabaseHelper(this)  
 button.setOnClickListener {  
 var un=un.text.toString()  
 var pass=pass.text.toString()  
 mydatabase.saveUser(un,pass)  
 }  
  
 button2.setOnClickListener {  
 var userD=mydatabase.readUsers()  
 var ad=ArrayAdapter(this,android.R.layout.simple\_list\_item\_1,userD)  
 userList.adapter=ad  
 }  
  
 userList.setOnItemClickListener { adapterView, view, i, l ->  
 var data=userList.getItemAtPosition(i).toString()  
 Toast.makeText(this,data,Toast.LENGTH\_SHORT).show()  
 }  
  
 userList.setOnItemLongClickListener { adapterView, view, i, l ->  
 var id=userList.getItemIdAtPosition(i).toString()[0]  
 mydatabase.deleteUser(id.digitToInt())  
 true  
 }  
  
 button3.setOnClickListener {  
 if(mydatabase.checkUser(un.text.toString(),pass.text.toString())){  
 Toast.makeText(this,"Valid User",Toast.LENGTH\_SHORT).show()  
 }  
 else{  
 Toast.makeText(this,"Invalid User",Toast.LENGTH\_SHORT).show()  
 }  
 }  
  
 button4.setOnClickListener {  
 if(mydatabase.changePass(un.text.toString(),pass.text.toString())){  
 Toast.makeText(this,"Password Changed!!!",Toast.LENGTH\_SHORT).show()  
 }  
 else{  
 Toast.makeText(this,"Error!!!!",Toast.LENGTH\_SHORT).show()  
 }  
 }  
 }  
}

**TyitDatabaseHelper.kt**

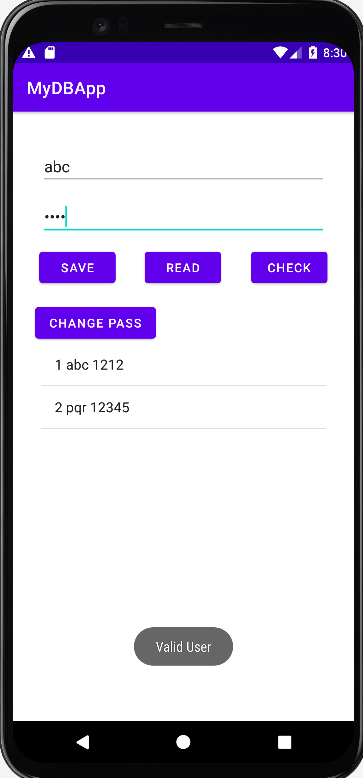
package com.example.mydbapp  
  
import android.content.ContentValues  
import android.content.Context  
import android.database.sqlite.SQLiteDatabase  
import android.database.sqlite.SQLiteOpenHelper  
import android.widget.Toast  
import androidx.core.content.contentValuesOf  
  
class TyitDatabaseHelper(var context:Context):SQLiteOpenHelper(context,"TYIT2025",null,1) {  
 override fun onCreate(p0: SQLiteDatabase?) {  
 var create\_table="create table users(id integer primary key autoincrement,username varchar(20),password var(20))"  
 p0?.execSQL(create\_table)  
 }  
  
 override fun onUpgrade(p0: SQLiteDatabase?, p1: Int, p2: Int) {  
 TODO("Not yet implemented")  
 }  
  
 fun saveUser(username:String,pass:String){  
 var db=this.writableDatabase  
 var cv= ContentValues()  
 cv.put("username",username)  
 cv.put("password",pass)  
 var res=db.insert("users",null,cv)  
 if (res > 1){  
 Toast.makeText(context,"Inserted Successfully",Toast.LENGTH\_SHORT).show()  
 }  
 else{  
 Toast.makeText(context,"Error!!!",Toast.LENGTH\_SHORT).show()  
 }  
 }  
  
 fun readUsers():ArrayList<String>{  
 var userdata=ArrayList<String>()  
 var db=this.readableDatabase  
 var rec=db.rawQuery("select \* from users",null)  
 if (rec.moveToFirst())  
 {  
 do{  
 var data=rec.getString(0).toString()+" "+rec.getString(1).toString()+" "+rec.getString(2).toString()  
 userdata.add(data)  
 }while (rec.moveToNext())  
 }  
 return userdata  
 }  
  
 fun deleteUser(uid:Int){  
 var db=this.writableDatabase  
 var res=db.delete("users","id="+uid,null)>0  
 if(res){  
 Toast.makeText(context,"Deleted Successfully",Toast.LENGTH\_SHORT).show()  
 }  
 else{  
 Toast.makeText(context,"Error!!!",Toast.LENGTH\_SHORT).show()  
 }  
 }  
  
 fun checkUser(un:String,pass:String):Boolean{  
 var status=false  
 var db=this.readableDatabase  
 var res=db.rawQuery("select \* from users where username='$un' and password='$pass'",null)  
 if (res.count==1){  
 status=true  
 }  
 return status  
 }  
  
 fun changePass(username: String, newPassword: String): Boolean {  
 val db = this.writableDatabase  
 val cv = ContentValues()  
 cv.put("password",newPassword)  
 val result = db.update("users", cv, "username=?", arrayOf(username))  
 return result > 0  
 }  
  
}

**Output:**

**Saving and Reading the data :**

**Checking user is present at database :**



**Change password according to the username :**

