sharedPreferences

实验一：利用sharedpreferences实现登录页面

界面

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="#AA0000FF"
        android:textSize="45sp"
        android:textColor="#FFFFFFFF"
        android:text="用户登陆" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:textSize="25sp"
        android:textColor="#000000"
        android:text="请输入用户名:" />

    <EditText
        android:id="@+id/et_name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="25sp"
        android:hint="用户名" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="25sp"
        android:textColor="#000000"
        android:text="请输入密码:" />


    <EditText
        android:id="@+id/et_passwd"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="密码"
        android:textSize="25sp"
```

```xml
            android:inputType="textPassword" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">
        <CheckBox
            android:id="@+id/cb_save"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_marginTop="5dp"
            android:layout_weight="1"
            android:text="保存密码" />
        <CheckBox
            android:id="@+id/cb_login"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:layout_marginTop="5dp"
            android:text="自动登录" />
    </LinearLayout>

    <Button
        android:id="@+id/btn_login"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="登录"
        android:textSize="20sp" />
</LinearLayout>
```

java:

```java
package com.example.sharedperf;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.Toast;

public class LoginActivity extends AppCompatActivity implements
View.OnClickListener {

    private EditText et_name, et_pwd;
    private CheckBox ck_save, ck_login;
    private SharedPreferences pref;
    private SharedPreferences.Editor editor;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```java
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
        initView();
        pref = getSharedPreferences("login", Context.MODE_PRIVATE);
        editor = pref.edit();
        loadInfo();
    }

    void initView(){
        et_name = findViewById(R.id.et_name);
        et_pwd = findViewById(R.id.et_passwd);
        ck_save = findViewById(R.id.cb_save);
        ck_login = findViewById(R.id.cb_login);
        findViewById(R.id.btn_login).setOnClickListener(this);
    }

    void loadInfo(){
        String name = pref.getString("name", "");
        String pwd = pref.getString("pwd", "");
        boolean isSave = pref.getBoolean("isSave", false);
        boolean isAutoLogin = pref.getBoolean("isAutoLogin", false);
        if (isSave) {
            et_name.setText(name);
            et_pwd.setText(pwd);
            ck_save.setChecked(true);
            ck_login.setChecked(isAutoLogin);
        }
        if (isAutoLogin) {
            Intent i = new Intent(this, MainActivity.class);
            startActivity(i);
        }
    }
    @Override
    public void onClick(View v) {
        String name = et_name.getText().toString(); //"u1"
        String pwd = et_pwd.getText().toString(); //"1234"
        boolean isSave = ck_save.isChecked();
        boolean isAutoLogin = ck_login.isChecked();
//        if save
        if (isSave) {
            editor.putString("name", name);
            editor.putString("pwd", pwd);
            editor.putBoolean("isSave", isSave);
            editor.putBoolean("isAutoLogin", isAutoLogin);
            editor.commit();
            Toast.makeText(this, "save successfully",
Toast.LENGTH_SHORT).show();
        }
//              判断用户密码是否正确：略
        Intent i = new Intent(this, MainActivity.class);
        startActivity(i);
    }
}
```

文件存储

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="#AA0000FF"
        android:textSize="45sp"
        android:textColor="#FFFFFFFF"
        android:text="文件输入输出" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:textSize="25sp"
        android:textColor="#000000"
        android:text="请输入文件名:" />

    <EditText
        android:id="@+id/et_name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="25sp"
        android:singleLine="true"
        android:hint="文件名" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="25sp"
        android:textColor="#000000"
        android:text="请输入内容:" />


    <EditText
        android:id="@+id/et_text"
        android:layout_width="match_parent"
        android:layout_height="133dp"
        android:hint="文本内容"
        android:lines="3"
        android:textSize="25sp" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
```

```xml
        android:orientation="horizontal">

    <RadioGroup
        android:id="@+id/save_dir"
        android:orientation="horizontal"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" >

        <RadioButton
            android:id="@+id/internal"
            android:text="内部存储"
            android:checked="true"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />

        <RadioButton
            android:id="@+id/internal2"
            android:text="内部2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />

        <RadioButton
            android:id="@+id/external_private"
            android:text="外部私有存储"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />

        <RadioButton
            android:id="@+id/external_public"
            android:text="外部公有存储"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
    </RadioGroup>
</LinearLayout>
<Button
    android:id="@+id/btn_write"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:text="写入文件"
    android:textSize="20sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:textSize="25sp"
    android:textColor="#000000"
    android:text="请输入文件名:" />

<EditText
    android:id="@+id/et_readfile"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="25sp"
```

```xml
                android:singleLine="true"
                android:hint="文件名" />
        <Button
                android:id="@+id/btn_read"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_gravity="center"
                android:text="读取文件"
                android:textSize="20sp" />
        <TextView
                android:id="@+id/tv_text"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:lines="3"/>
    </LinearLayout>
```

java:

```java
package com.example.practice;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.os.Environment;
import android.util.Log;
import android.view.View;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;

import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;

public class FileActivity extends AppCompatActivity implements
View.OnClickListener, RadioGroup.OnCheckedChangeListener {

    private EditText et_name;
    private EditText et_text;
    private EditText et_rf;
    private TextView tv_text;
    private String save_type = "internal";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_file);
        initView();
    }

    void initView() {
        et_name = findViewById(R.id.et_name);
```

```java
        et_text = findViewById(R.id.et_text);
        et_rf = findViewById(R.id.et_readfile);
        tv_text = findViewById(R.id.tv_text);
        findViewById(R.id.btn_read).setOnClickListener(this);
        findViewById(R.id.btn_write).setOnClickListener(this);
        RadioGroup save_dir = findViewById(R.id.save_dir);
        save_dir.setOnCheckedChangeListener(this);
    }

    //    内部存储写入
    void writeFile(String filename, String text) {
        FileOutputStream fos = null;
        try {
            fos = openFileOutput(filename, MODE_APPEND);
            byte[] bytes = text.getBytes(); //将字符串编码为byte序列
            fos.write(bytes);
            fos.close();
        } catch (IOException e) {
            throw new RuntimeException(e);
        }
        Toast.makeText(this, "save success", Toast.LENGTH_SHORT).show();
    }

    //    内部存储读取
    String readFile(String filename) {
        String text = null;
        FileInputStream fis = null;
        try {
            fis = openFileInput(filename);
            int length = fis.available(); //返回文件总大小 或者 字节数
            byte[] bytes = new byte[length];
            fis.read(bytes);
            text = new String(bytes);
            fis.close();
        } catch (IOException e) {
            throw new RuntimeException(e);
        }
        return text;
    }

    void writeFile(String filename, String dirPath, String text) {
        Log.i("filetest", "writeFile: file saved at: "+dirPath);
        File fp = new File(dirPath, filename);
        FileOutputStream fos = null;
        try {
            fos = new FileOutputStream(fp, true);
            byte[] bytes = text.getBytes(); //将字符串编码为byte序列
            fos.write(bytes);
            fos.close();
        } catch (IOException e) {
            throw new RuntimeException(e);
        }
        Toast.makeText(this, "save success", Toast.LENGTH_SHORT).show();
    }
```

```java
    String readFile(String filename, String dirPath) {
        String text = null;
        FileInputStream fis = null;
        Log.i("filetest", "readFile: file saved at: "+dirPath);
        File fp = new File(dirPath, filename);
        try {
            fis = new FileInputStream(fp);
            int length = fis.available();
            byte[] bytes = new byte[length];
            fis.read(bytes);
            text = new String(bytes);
            fis.close();
        } catch (IOException e) {
            throw new RuntimeException(e);
        }
        return text;
    }

    @Override
    public void onClick(View v) {
        int btn_id = v.getId();
        if(btn_id == R.id.btn_write){
            String name = et_name.getText().toString();
            String text = et_text.getText().toString();
            String dirPath = null;
            switch (save_type) {
                case "external_private": // 外部存储私有空间
                    dirPath =
getExternalFilesDir(Environment.DIRECTORY_DOWNLOADS).toString();
                    writeFile(name, dirPath, text);
                    break;
                case "external_public":
                    //外部存储公共空间:需要配置相关权限
                    dirPath =
Environment.getExternalStoragePublicDirectory(Environment.DIRECTORY_DOWNLOADS).t
oString();
                    writeFile(name, dirPath, text);
                    break;
                case "internal2":
                    dirPath = getFilesDir().toString();
                    writeFile(name, dirPath, text);
                    break;
                default:
                    writeFile(name, text);
                    break;
            }
        } else {
            String name = et_rf.getText().toString();
            String text;
            String dirPath = null;
            switch (save_type) {
                case "external_private":
                    // 外部存储私有空间
                    dirPath =
getExternalFilesDir(Environment.DIRECTORY_DOWNLOADS).toString();
```

```java
                        text = readFile(name, dirPath);
                        break;
                    case "external_public":
                        //外部存储公共空间：需要配置相关权限
                        dirPath =
Environment.getExternalStoragePublicDirectory(Environment.DIRECTORY_DOWNLOADS).t
oString();
                        text = readFile(name, dirPath);
                        break;
                    case "internal2": //内部存储2：通过路径的方式
                        dirPath = getFilesDir().toString();
                        text = readFile(name, dirPath);
                        break;
                    default:
                        text = readFile(name);
                        break;
                }
                tv_text.setText(text);
            }

        }

        @Override
        public void onCheckedChanged(RadioGroup group, int checkedId) {
            if (checkedId == R.id.internal) {
                save_type = "internal";
            } else if (checkedId == R.id.external_private) {
                save_type = "external_private";
            } else  if (checkedId == R.id.external_public) {
                save_type = "external_public";
            } else {
                save_type = "internal2";
            }
            Log.i("filetest", "onCheckedChanged: "+save_type);
        }
}
```

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

    <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />
    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />

    <application
        android:requestLegacyExternalStorage="true"
</manifest>
```

SQLite

电脑cmd下

可以配置好环境变量：

sqlite3 class.db

```
表格创建：
create table student(sno integer primary key autoincrement, sname text not null,
sscore float);

查看表：
.tables

新增数据
insert into student(sname, sscore) values ("jia", 88);
删
delete from student where sno=1;
改
update student set sscore=90 where sno=1;
查
select * from student;
```

退出：.exit

进入虚拟机的虚拟环境

adb devices: 查询设备

adb shell / adb -s xxx shell

退出：exit

进入sdcard，创建文件夹，再sqlite3 xx.db

```
Cursor c = db.rawQuery("select * from student where sname=?",new Stirng[]
{"finch"});

if(cursor.moveToFirst()) {
    String name = c.getString(c.getColumnIndex("sname"));
}
```

布局：

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".DBActivity">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```xml
        android:background="#AA0000FF"
        android:textSize="45sp"
        android:textColor="#FFFFFFFF"
        android:gravity="center"
        android:text="班级管理" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:padding="10dp">

        <TextView
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:textSize="25sp"
            android:textColor="#000000"
            android:text="学号:" />

        <EditText
            android:id="@+id/et_sno"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="3"
            android:textSize="25sp"
            android:singleLine="true"
            android:hint="输入学号" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:padding="10dp">

        <TextView
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:textSize="25sp"
            android:textColor="#000000"
            android:text="学生姓名:" />

        <EditText
            android:id="@+id/et_sname"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="2"
            android:textSize="25sp"
            android:singleLine="true"
            android:hint="输入学生姓名" />
    </LinearLayout>
```

```xml
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:padding="10dp">

    <TextView
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:textSize="25sp"
        android:textColor="#000000"
        android:text="年龄:" />

    <EditText
        android:id="@+id/et_sage"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="3"
        android:textSize="25sp"
        android:singleLine="true"
        android:hint="输入年龄" />
</LinearLayout>
<Button
    android:id="@+id/btn_insert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="新增"
    android:textSize="25sp"/>
<Button
    android:id="@+id/btn_delete"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="删除"
    android:textSize="25sp"/>
<Button
    android:id="@+id/btn_update"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="修改"
    android:textSize="25sp"/>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:padding="10dp">

    <TextView
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:textSize="25sp"
        android:textColor="#000000"
        android:text="学号:" />
```

```xml
        <EditText
            android:id="@+id/et_ssno"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="3"
            android:textSize="25sp"
            android:singleLine="true"
            android:hint="输入学号"  />
    </LinearLayout>

    <Button
        android:id="@+id/btn_select"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="查询"
        android:textSize="25sp"/>
    <TextView
        android:id="@+id/tv_res"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="#88FFFF88"
        android:textSize="25sp"/>

</LinearLayout>
```

java

```java
package com.example.practice;

import androidx.appcompat.app.AppCompatActivity;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.os.Environment;
import android.util.Log;
import android.view.View;
import android.widget.EditText;
import android.widget.TextClock;
import android.widget.TextView;


import java.io.File;

import DB.DBHelper;

public class DBActivity extends AppCompatActivity implements
View.OnClickListener {

    private static final String TAG = "sqliteTest";
    private EditText et_sno;
    private EditText et_sname;
    private EditText et_sage;
```

```java
    private EditText et_ssno;
    private SQLiteDatabase classdb;
    private TextView tv_res;

    private DBHelper dbHelper = null;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_db);
        initView();
        initDB();
    }
    void initView() {
        et_sno = findViewById(R.id.et_sno);
        et_sname = findViewById(R.id.et_sname);
        et_sage = findViewById(R.id.et_sage);
        et_ssno = findViewById(R.id.et_ssno);
        tv_res = findViewById(R.id.tv_res);
        findViewById(R.id.btn_insert).setOnClickListener(this);
        findViewById(R.id.btn_delete).setOnClickListener(this);
        findViewById(R.id.btn_select).setOnClickListener(this);
        findViewById(R.id.btn_update).setOnClickListener(this);
    }

    void initDB() {

        String dataPath = getExternalFilesDir("database").toString() +
File.separator + "class.db";
        // 1. 打开或者创建数据库，根据数据库是否存在
        //String name，数据库文件的名字,绝对路径
        // 模式
        //CursorFactory factory，游标工厂，查询时返回自定义的Cursor对象
        dbHelper = new DBHelper(this, dataPath,null,1);
        classdb = dbHelper.getWritableDatabase(); //即打开又可以写
//        classdb = openOrCreateDatabase(dataPath, Context.MODE_PRIVATE, null);
//        if (classdb != null) {
//            Log.i(TAG, "initDB: create class.db success at " + dataPath);
//        }
//        2. 创建表:student
//        String createTabelStu = "create table if not exists student(sno text
primary key, sname text not null, sage integer)";
//        classdb.execSQL(createTabelStu);

    }

    @Override
    public void onClick(View v) {
        String sno = et_sno.getText().toString().trim();
        String sname = et_sname.getText().toString().trim();
        String ssno = et_ssno.getText().toString().trim();
        int sage;
        if (!et_sage.getText().toString().equals("")) {
            sage = Integer.parseInt(et_sage.getText().toString());
        } else {
```

```
                sage = 0;
        }
        if (v.getId() == R.id.btn_insert) {
            //          3. 插入数据
            ContentValues vals = new ContentValues();
            vals.put("sno", sno);
            vals.put("sname", sname);
            vals.put("sage", sage);
            long cnt = classdb.insert("student", null, vals);
            if (cnt > 0) {
                Log.i(TAG, String.format("onClick: insert data success, cnt =
%d", cnt));
            }
        } else if (v.getId() == R.id.btn_delete) {
            String whereClause = "sno=? or sname=?";
            String [] args = new String[]{sno, sname};
            int cnt = classdb.delete("student",whereClause, args);
        } else if (v.getId() == R.id.btn_update) {
            ContentValues vals = new ContentValues();
            vals.put("sage", sage);
            String whereClause = "sno=? or sname=?";
            String [] args = new String[]{sno, sname};
            classdb.update("student", vals, whereClause, args);
        } else {
            Cursor cursor = classdb.query("student", null, null,
                    null,null,null,null);
            String showRes = "sno, sname, sage \n";
            while (cursor.moveToNext()) {
                String data = cursor.getString(0) + ", "
                        + cursor.getString(1) + ", "
                        + cursor.getString(2) + "\n";
                showRes = showRes + data;
            }
            tv_res.setText(showRes);


        }

    }
}
```

DBHelper

```
package DB;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(@Nullable Context context, @Nullable String name, @Nullable
SQLiteDatabase.CursorFactory factory, int version) {
```

```java
        super(context, name, factory, version);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        String createTabelStu = "create table if not exists student(sno text
primary key, sname text not null, sage integer)";
        db.execSQL(createTabelStu);
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        String alterSQL = "ALTER TABLE  student add phone varchar(12)";
        db.execSQL(alterSQL);
    }
}
```
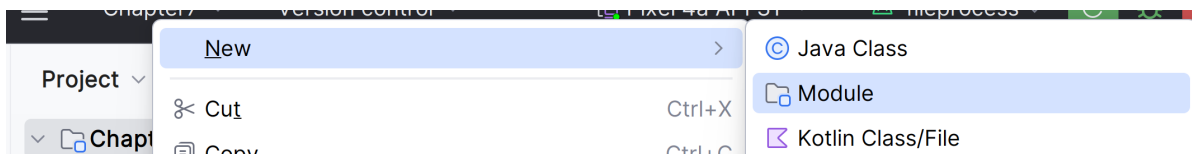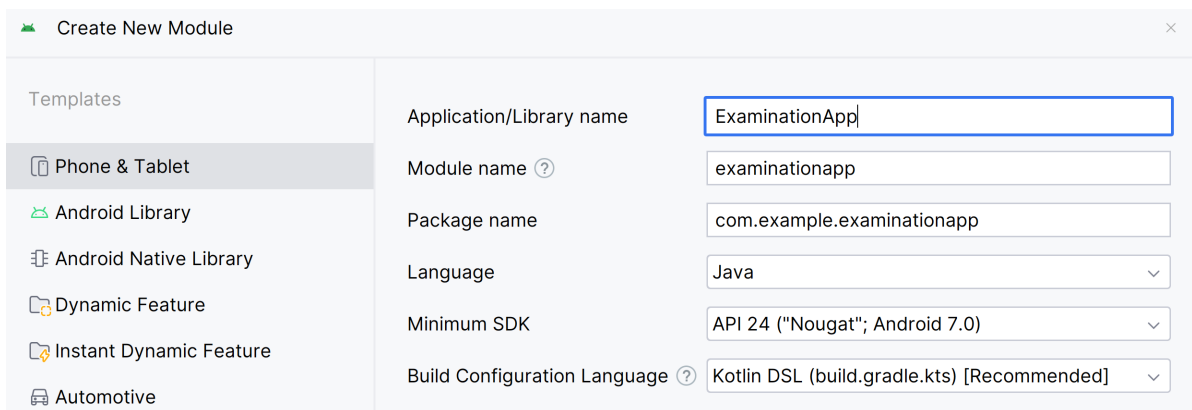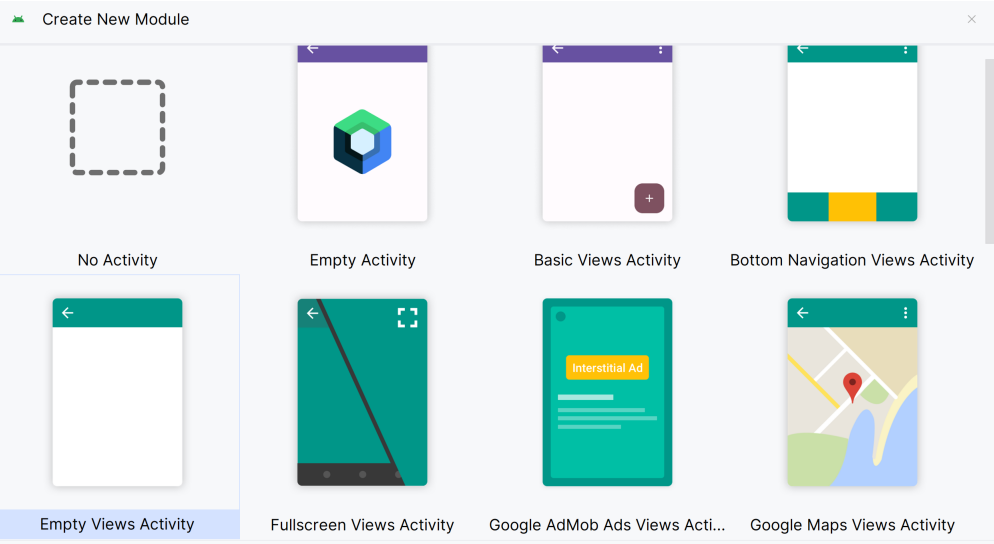
综合练习

步骤1：创建模块

1. 打开Android Studio， 在项目名称处右键，创建一个新的module。


2. 设置名称

3. 选择**Empty Views Activity, Next -> Finish**.

Create New Module

| No Activity | Empty Activity | Basic Views Activity | Bottom Navigation Views Activity |
| Empty Views Activity | Fullscreen Views Activity | Google AdMob Ads Views Acti… | Google Maps Views Activity |

步骤2：创建相关页面文件 & 导入资源文件

本应该包含的页面共有:

界面	对应的java与布局文件	功能 & 涉及操作
	登录界面: LoginActivity.java \ activity_login.xml	1. 注册：跳转到注册页面； 2. 登录：跳转到应用主页； 3. 用户密码校验

界面	对应的java与布局文件	功能 & 涉及操作
	注册界面：RegisterActivity.java \ activity_register.xml	1. 用户输入信息并保存到数据库； 2. 校验用户是否已经注册； 3. 返回登录页面
	应用主页: MainActivity.java \ activity_main.xml	1. 显示用户名； 2. 跳转到其他页面
	考试页面: TestActivity.java \ activity_test.xml	1. 作答 2. 打分并保存成绩与作答结果
	查看考试结果: ReviewActivity.java \ activity_review.xml	1. 查看作答结果

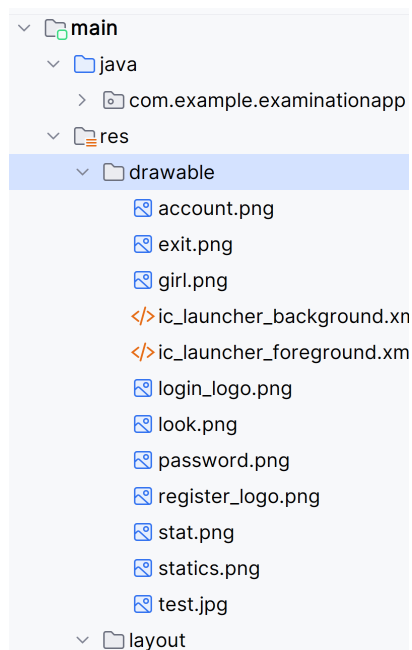| 界面	对应的java与布局文件	功能 & 涉及操作
	查看成绩统计: ScoreActivity.java \ activity_score.xml	1. 查看成绩

1. 创建以上页面的布局文件与java文件：在module名称右键 - new - activity：
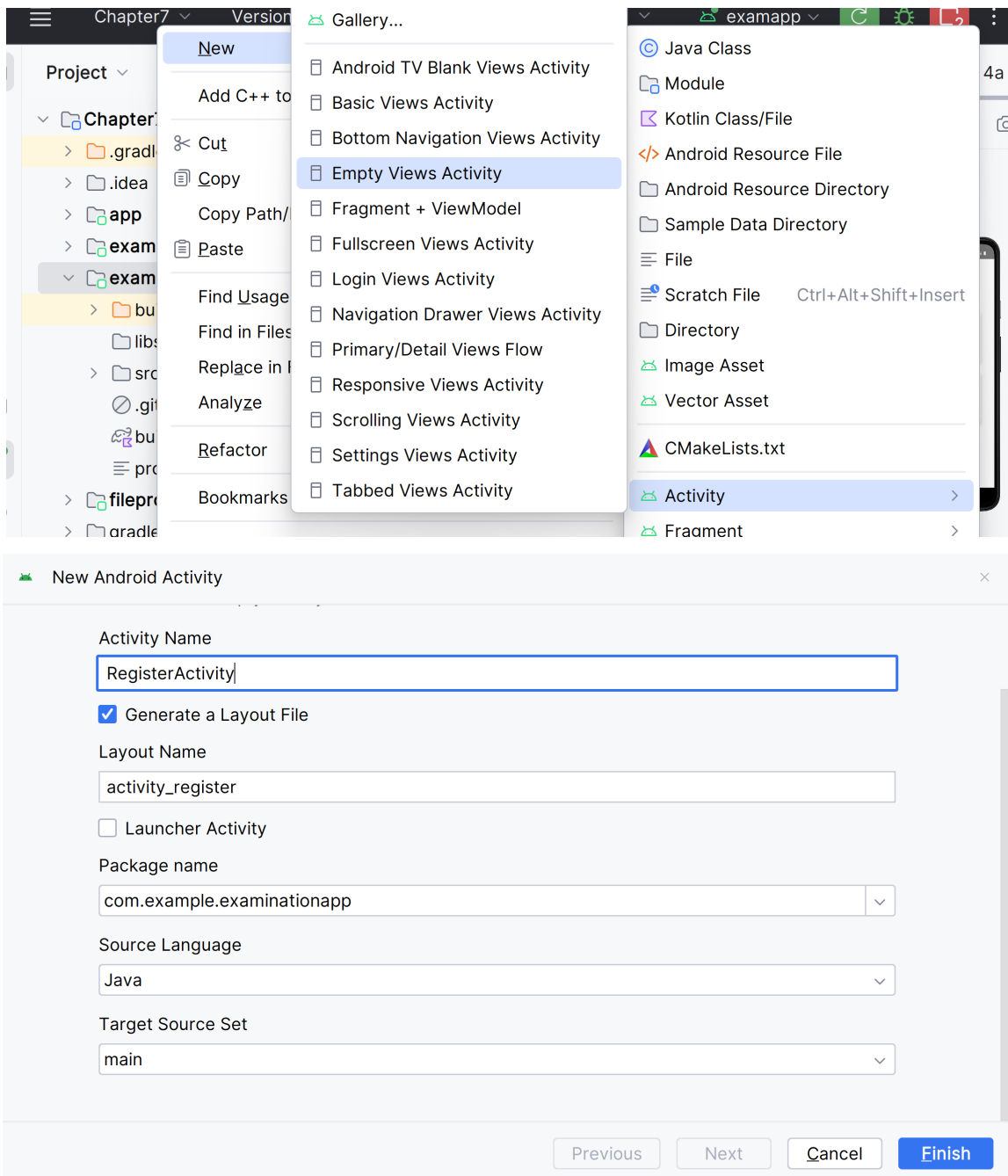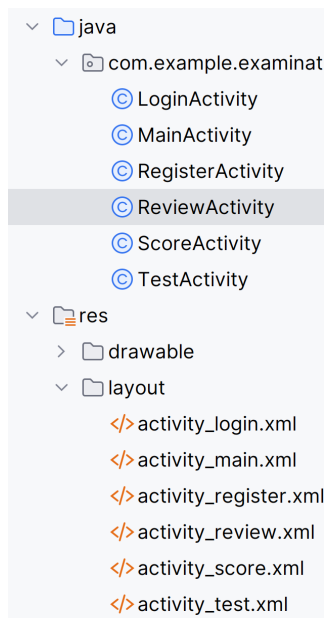
2. 导入各种图标图片：

解压drawable.zip，并将里面所有图片拉入examinationapp\src\main\res\drawable文件夹中：

3. 设置AndroidManifest.xml：

取消MainActivity为主页面，设置LoginActivity为主页面。

```xml
        <activity
            android:name=".TestActivity"
            android:exported="false" />
        <activity
            android:name=".RegisterActivity"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="false" />
        <activity
            android:name=".LoginActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
```

步骤3：登录界面

1.布局：activity_login.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    tools:context=".LoginActivity">
<!--    第一张图片设置-->
    <TextView
        android:layout_width="400dp"
        android:layout_height="400dp"
        android:background="@drawable/login_logo"/>
<!--    用户登录-->
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="60dp"
        android:gravity="center"
        android:text="用户登录"
        android:textColor="#5768C5"
        android:textSize="25dp"
        android:background="#225768C5"
        android:layout_marginTop="-60dp" />

<!--输入用户名 & 密码-->
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
```

```xml
        android:padding="10dp">

        <ImageView
            android:layout_width="50dp"
            android:layout_height="50dp"
            android:layout_weight="0"
            app:srcCompat="@drawable/account" />

        <EditText
            android:id="@+id/et_uid"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="2"
            android:ems="10"
            android:hint="请输入您的学号"
            android:textSize="20sp" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:orientation="horizontal"
        android:padding="10dp">

        <ImageView
            android:layout_width="50dp"
            android:layout_height="50dp"
            android:layout_weight="0"
            app:srcCompat="@drawable/password" />

        <EditText
            android:id="@+id/et_upwd"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:hint="请输入您的密码"
            android:textSize="20sp"
            android:inputType="textPassword" />
    </LinearLayout>
<!--    保存密码复选框-->
    <CheckBox
        android:id="@+id/cb_save"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="保存密码"
        android:layout_gravity="right"
        android:layout_marginRight="15dp"/>
<!--    登录按钮：跳转到应用主页-->
    <Button
        android:id="@+id/btn_login"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```xml
        android:text="登录"
        android:textSize="20sp"
        android:background="#4757AE"
        android:textColor="#FFFFFF"
        android:layout_gravity="center"/>
<!--跳转到注册按钮-->
    <Button
        android:id="@+id/btn_register"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="还没有账号？现在注册"
        android:textColor="#888282"
        android:background="#00FFFFFF" />
</LinearLayout>
```

2.页面初始化：LoginActivity.java

step 1-5

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.CheckBox;
import android.widget.EditText;
//4-让当前activity实现OnClickListener接口，并实现onClick方法
public class LoginActivity extends AppCompatActivity implements
View.OnClickListener {
//      3-设置变量为全局变量
    private EditText et_uid;
    private EditText et_upwd;
    private CheckBox cb_save;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
//        2-调用初始化方法
        initView();
    }

//      1-页面控件初始化
    void initView() {
        // 学号输入框
        et_uid = findViewById(R.id.et_uid);
        // 密码输入框
        et_upwd = findViewById(R.id.et_upwd);
        // 是否保存密码复选框
        cb_save = findViewById(R.id.cb_save);
        findViewById(R.id.btn_login).setOnClickListener(this); // 设置监听：登录按钮
        findViewById(R.id.btn_register).setOnClickListener(this); //设置监听：跳转
注册
```

```java
    }

//      5-在onClick中写入按钮监听的事件
    @Override
    public void onClick(View v) {

    }
}
```

3. 页面跳转：LoginActivity.java

在onClick设置页面跳转：

```java
//      5-在onClick中写入按钮监听的事件
    @Override
    public void onClick(View v) {
//          登录按钮跳转到主页
        if (v.getId() == R.id.btn_login) {
            Intent i = new Intent(this, MainActivity.class);
            startActivity(i);
        } else { // 注册按钮跳转到注册页面
            Intent i = new Intent(this, RegisterActivity.class);
            startActivity(i);
        }
    }
```

步骤4：注册页面

1. 布局文件：activity_register.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    tools:context=".RegisterActivity">
<!--注册图标-->
    <TextView
        android:layout_width="220dp"
        android:layout_height="220dp"
        android:background="@drawable/register_logo"
        android:layout_gravity="center"
        android:layout_margin="20dp"/>
<!--用户注册-->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="用户注册"
        android:textColor="#0C6BC2"
```

```xml
            android:textSize="25sp"
            android:background="#220C6BC2"
            android:layout_margin="10dp"/>
    <!--用户信息输入框-->
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal"
            android:layout_marginHorizontal="20dp"
            android:layout_marginVertical="5dp">

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="0"
                android:text="学号：  "
                android:textColor="#0C6BC2"
                android:textSize="25sp" />

            <EditText
                android:id="@+id/et_rsid"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:ems="10"
                android:hint="请输入需要注册的学号"
                android:textSize="20sp" />
        </LinearLayout>

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal"
            android:layout_marginHorizontal="20dp"
            android:layout_marginVertical="5dp">

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="0"
                android:text="密码：  "
                android:textColor="#0C6BC2"
                android:textSize="25sp" />

            <EditText
                android:id="@+id/et_rpwd"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:ems="10"
                android:hint="请输入密码"
                android:textSize="20sp"
                android:inputType="textPassword" />
        </LinearLayout>
        <LinearLayout
```

```xml
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginHorizontal="20dp"
        android:layout_marginVertical="5dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="0"
            android:text="姓名:  "
            android:textColor="#0C6BC2"
            android:textSize="25sp" />

        <EditText
            android:id="@+id/et_rname"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:hint="请输入姓名"
            android:textSize="20sp"
            android:inputType="textPersonName" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginHorizontal="20dp"
        android:layout_marginVertical="5dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="0"
            android:text="学院:  "
            android:textColor="#0C6BC2"
            android:textSize="25sp" />

        <EditText
            android:id="@+id/et_rdep"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:hint="请输入学院"
            android:textSize="20sp" />
    </LinearLayout>
<!--注册按钮-->
    <Button
        android:id="@+id/btn_registeruser"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="20dp"
```

```xml
            android:text="注册"
            android:textSize="25sp"
            android:textColor="#FFFFFF"
            android:background="#1C8DE6" />
</LinearLayout>
```

2. 页面初始化：RegisterActivity.java

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
//4-让当前activity实现OnClickListener接口，并实现onClick方法
public class RegisterActivity extends AppCompatActivity implements
View.OnClickListener{
//      3-设置变量为全局变量
    private EditText et_rid;
    private EditText et_rname;
    private EditText et_rpwd;
    private EditText et_rdep;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_register);
//        2-调用初始化方法
        initView();
    }
//    1-页面控件初始化
    void initView() {
        et_rid = findViewById(R.id.et_rsid); //学号输入框
        et_rname = findViewById(R.id.et_rname); //学生姓名输入框
        et_rpwd = findViewById(R.id.et_rpwd); //学生密码输入框
        et_rdep = findViewById(R.id.et_rdep); //学生学院输入框
        findViewById(R.id.btn_registeruser).setOnClickListener(this); // 注册按钮
监听
    }
    //      5-在onClick中写入按钮监听的事件
    @Override
    public void onClick(View v) {

    }
}
```

3. 用户输入信息并保存到数据库

3-1 数据库表格设计：student

字段名	类型	含义
sid	text	学号，主键
sname	text	姓名
sdep	text	学院
sscore	integer	学生成绩
examcnt	integer	学生考试次数
examtime	text	学生考试时间
examans	text	学生考试答案

顺便创建后续要使用的examinfo表格：

examinfo

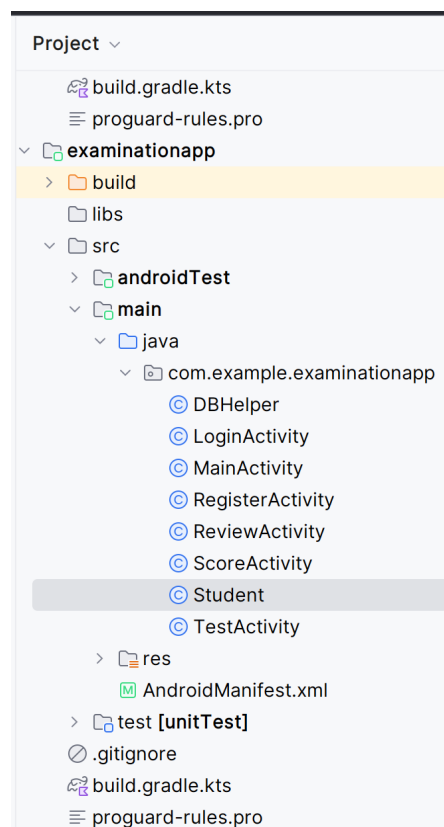| 字段名	类型	含义
tno	integer	主键，自动生成
question	text	题目
opt1	text	选项1
opt2	text	选项2
opt3	text	选项3
opt4	text	选项4
rightans	text	正确答案

3-2 数据库相关文件创建

java下应用包名的文件夹右键new - Java Class：
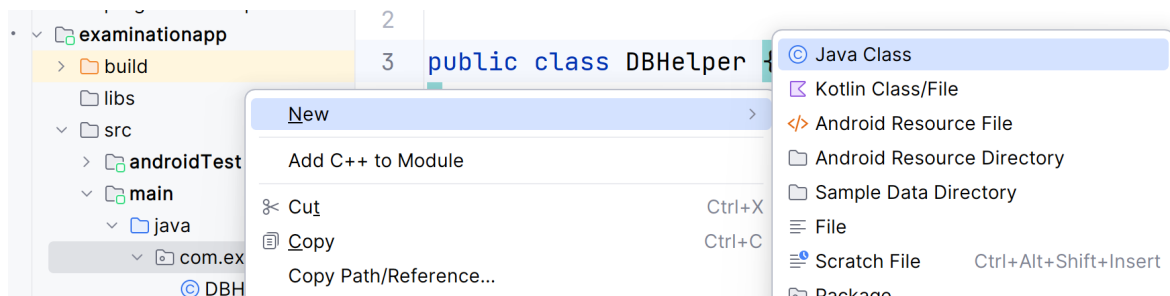
创建java文件：DBHelper和Student：
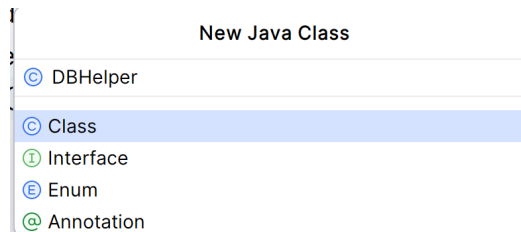
目录结构为：

3-3 数据库创建与表格创建

1. 初始化：**DBHelper.java**

   step1-3

```java
package com.example.examinationapp;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;
```

```java
//1-继承SQLiteOpenHelper抽象类
public class DBHelper extends SQLiteOpenHelper {
//     3-创建构造函数
    public DBHelper(@Nullable Context context, @Nullable String name, @Nullable
SQLiteDatabase.CursorFactory factory, int version) {
        super(context, name, factory, version);
    }

//2-实现onCreate以及onUpgrade方法
    @Override
    public void onCreate(SQLiteDatabase db) {

    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

    }
}
```

2. 创建数据库与student表格：**DBHelper.java**

step1-4

```java
package com.example.examinationapp;

import android.content.Context;
import android.database.SQLException;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {
    //     1-定义数据库名称,表格名称
    public static final String DB_NAME = "examination.db";
    public static final String TABLE_STU = "student";
    public static final String TABLE_EXAM = "examinfo";
    // 2-定义建表语句:创建student表格与examinfo表格
    private static final String CREATE_TABLE_STU = "create table if not exists "
+
            TABLE_STU + "(sid text primary key, " +
            "sname text not null, spwd text not null, " +
            "sdep text, sscore integer," +
            "examcnt integer, examtime text, examans text )";
    private static final String CREATE_TABLE_EXAM = "create table if not exists
"
        + TABLE_EXAM + "(tno integer primary key autoincrement, " +
        "question text not null, opt1 text not null," +
        "opt2 text not null, opt3 text not null," +
        "opt4 text not null, rightans text not null)";
//     3-修改构造函数
    public DBHelper(@Nullable Context context) {
        super(context, DB_NAME, null, 1);
    }
```

```java
//    4-创建表格
    @Override
    public void onCreate(SQLiteDatabase db) {
        try {
            db.execSQL(CREATE_TABLE_STU);
            db.execSQL(CREATE_TABLE_EXAM);
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

    }
}
```

3-4 定义student对象：Student.java

定义student对象的属性以及其中的set与get属性的方法。

```java
package com.example.examinationapp;

public class Student {
    public String sid;
    public String sname;
    public String spwd;
    public String sdep = "";
    public int sscore = 0;
    public int examcnt = 0;
    public String examans;
    public String examtime = "";

    public Student() {

    }

    public Student(String sid, String sname, String spwd, String sdep) {
        this.sid = sid;
        this.sname = sname;
        this.spwd = spwd;
        this.sdep = sdep;
    }
    public void setSid(String sid) {
        this.sid = sid;
    }
    public void setSname(String sname) {
        this.sname = sname;
    }
    public void setSpwd(String spwd) {
        this.spwd = spwd;
    }
    public void setSdep(String sdep) {
        this.sdep = sdep;
    }
```

```java
    public void setSscore(int sscore) {
        this.sscore = sscore;
    }
    public void setExamans(String examans) {
        this.examans = examans;
    }
    public void setExamcnt(int examcnt) {
        this.examcnt = examcnt;
    }
    public String getExamans() {
        return examans;
    }
    public int getSscore() {
        return sscore;
    }
    public int getExamcnt() {
        return examcnt;
    }
    public String getSname() {
        return sname;
    }
    public String getSid() {
        return sid;
    }
    public String getSdep() {
        return sdep;
    }
    public String getSpwd() {
        return spwd;
    }
}
```

3-5 定义student表格插入方法：DBHelper.java

在DBHelper类中加入registerStu方法：

```java
    public long registerStu(Student stu) {
        SQLiteDatabase db = getWritableDatabase();
        ContentValues vals = new ContentValues();
        vals.put("sid", stu.getSid());
        vals.put("sname", stu.getSname());
        vals.put("spwd", stu.getSpwd());
        vals.put("sdep", stu.getSdep());
        long res = db.insert(TABLE_STU, null, vals);
        return res;
    }
```
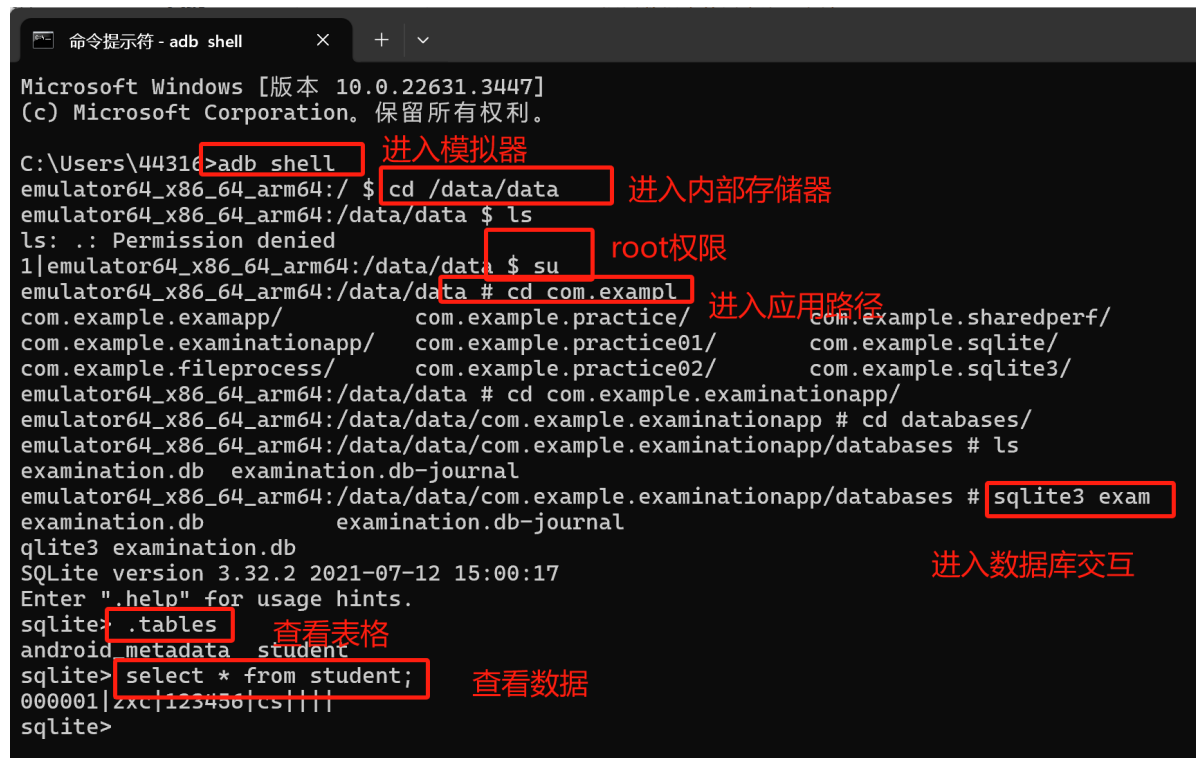
3-6在注册页面实现数据库相关操作: RegisterActivity.java

在注册按钮的监听中设置相关的动作。

- 数据库数据插入
- 根据是否成功插入数据判断该用户是否已经被注册
- 关闭当前activity

```java
public void onClick(View v) {
    // 1-获得页面用户输入值
    String rid = et_rid.getText().toString();
    String rname = et_rname.getText().toString();
    String rpwd = et_rpwd.getText().toString();
    String rdep = et_rdep.getText().toString();
    Student stu = new Student(rid, rname, rpwd, rdep);
    // 2-dbHelper初始化
    DBHelper dbHelper = new DBHelper(this);
    // 3-调用数据库的用户注册方法
    if (dbHelper.registerStu(stu) > 0) { // 成功插入数据,返回登录页面
        Toast.makeText(this, "注册成功", Toast.LENGTH_SHORT).show();
        finish(); // 4-将当前的activity结束,则返回登录页面
    } else { // 5-没有成功往数据库中插入数据,则表示改用户已经被注册
        Toast.makeText(this, "注册失败：该学号已经被注册",
Toast.LENGTH_LONG).show();
    }
}
```

3-7 验证数据库有没有成功创建以及用户注册数据是否成功插入表格。

步骤5：完善登录界面功能

1. 用户名密码校验方法：DBHelper.java

在DBHelper类中新增学生校验的方法：verifyStu，根据学号以及密码在student表格中进行查询，查询到结果则证明学号密码正确，返回学生姓名，否则返回空字符串。step1-3.

```java
    public String verifyStu(String sid, String spwd) {
        SQLiteDatabase db = getReadableDatabase();
        String whereClause = "sid=? and spwd=?";
//        1-根据学号以及密码进行查询
        Cursor cursor = db.query(TABLE_STU,
                null, whereClause,
                new String[] {sid, spwd}, null, null, null);
//        2-查询到数据:返回学生名字
        if(cursor.getCount() > 0) {
            cursor.moveToNext();
            return cursor.getString(cursor.getColumnIndex("sname"));
        }
//        3-否则,返回空字符串
        return "";
    }
```

2. 在登录页面进行校验: LoginActivity.java

step1-5

```java
    public void onClick(View v) {

        if (v.getId() == R.id.btn_login) {
//            1-获得页面用户输入
            String uid = et_uid.getText().toString();
            String upwd = et_upwd.getText().toString();
            boolean isSave = cb_save.isChecked();
            try {
//                2-数据库初始化
                DBHelper dbHelper = new DBHelper(this);
//                3-调用数据库的方法校验用户
                String sname = dbHelper.verifyStu(uid, upwd);
//                4-判断返回的学生姓名是否为空
                if (!sname.equals("")) {
//                    5-登录按钮跳转到主页：在intent中增加数据,实现带数据的跳转
                    Intent i = new Intent(this, MainActivity.class);
                    i.putExtra("sname", sname);
                    i.putExtra("sid", uid);
                    startActivity(i);
                } else {
//                    6-学生姓名为空,告诉用户登录失败
                    Toast.makeText(this, "登录失败：用户名或密码错误",
Toast.LENGTH_LONG).show();
                }
            } catch (SQLException e) {
                e.printStackTrace();
            }
        } else { // 注册按钮跳转到注册页面
            Intent i = new Intent(this, RegisterActivity.class);
```

```
            startActivity(i);
        }
    }
```

3. 保存密码: LoginActivity.java

参考sharedPreferences中的方法实现。

步骤6：主页面

1. 布局文件：activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    tools:context=".MainActivity">


    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center"
        android:layout_marginTop="20sp">
<!--用户头像-->
        <ImageView
            android:layout_width="60dp"
            android:layout_height="60dp"
            app:srcCompat="@drawable/girl"
            android:layout_marginVertical="40dp"
            android:layout_marginHorizontal="10dp"/>
<!--欢迎用户词-->
        <TextView
            android:id="@+id/tv_welcome"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:layout_marginVertical="50dp"
            android:layout_marginHorizontal="10dp"
            android:textColor="#4F92CF"
            android:textSize="25sp" />
    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
<!--考试布局-->
```

```xml
        <LinearLayout
            android:id="@+id/layout_test"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="#FFFFFF"
            android:orientation="vertical"
            android:layout_margin="20dp"
            android:elevation="10dp"
            android:padding="20dp">

            <ImageView
                android:layout_width="90dp"
                android:layout_height="90dp"
                app:srcCompat="@drawable/test" />

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="考试"
                android:textColor="#252020"
                android:layout_gravity="center"
                android:textSize="20sp" />
        </LinearLayout>
<!--查看考试-->
        <LinearLayout
            android:id="@+id/layout_review"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="#FFFFFF"
            android:orientation="vertical"
            android:layout_margin="20dp"
            android:elevation="10dp"
            android:padding="20dp">

            <ImageView
                android:layout_width="90dp"
                android:layout_height="90dp"
                app:srcCompat="@drawable/look" />

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="查看考试"
                android:textColor="#252020"
                android:layout_gravity="center"
                android:textSize="20sp" />
        </LinearLayout>
    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:gravity="center">
<!--成绩统计-->
```

```xml
        <LinearLayout
            android:id="@+id/layout_score"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="#FFFFFF"
            android:orientation="vertical"
            android:layout_margin="20dp"
            android:elevation="10dp"
            android:padding="20dp">

            <ImageView
                android:layout_width="90dp"
                android:layout_height="90dp"
                app:srcCompat="@drawable/statics" />

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="成绩统计"
                android:textColor="#252020"
                android:layout_gravity="center"
                android:textSize="20sp" />
        </LinearLayout>
<!--退出登录-->
        <LinearLayout
            android:id="@+id/layout_exit"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="#FFFFFF"
            android:orientation="vertical"
            android:layout_margin="20dp"
            android:elevation="10dp"
            android:padding="20dp">

            <ImageView
                android:layout_width="90dp"
                android:layout_height="90dp"
                app:srcCompat="@drawable/exit" />

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="退出登录"
                android:textColor="#252020"
                android:layout_gravity="center"
                android:textSize="20sp" />
        </LinearLayout>
    </LinearLayout>
</LinearLayout>
```

2. 页面初始化：MainActivity.java

step1-7

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {
//      7-设置全局变量
    private String sname;
    private String sid;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
//        6-调用initView
        initView();
    }
    //      1-页面控件初始化
    void initView() {
        TextView tv_welcome = findViewById(R.id.tv_welcome);
        //      2-获得从login页面传过来的intent
        if (getIntent() != null) {
            Intent i = getIntent();
            //      3-从中取出学生姓名,学号信息
            sname = i.getStringExtra("sname");
            sid = i.getStringExtra("sid");
            //      4-在页面显示用户名
            tv_welcome.setText("欢迎用户：" + sname);
        }
//        5-对页面四个layout设置监听
        findViewById(R.id.layout_test).setOnClickListener(this);
        findViewById(R.id.layout_review).setOnClickListener(this);
        findViewById(R.id.layout_score).setOnClickListener(this);
        findViewById(R.id.layout_exit).setOnClickListener(this);
    }

    @Override
    public void onClick(View v) {

    }
}
```

3. 实现页面跳转功能：MainActivity.java

在监听里面设置页面跳转。

```java
    public void onClick(View v) {
        if (v.getId() == R.id.layout_test) {
//              跳转到考试页面
            Intent i = new Intent(this, TestActivity.class);
            i.putExtra("sname", sname);
            i.putExtra("sid", sid);
            startActivity(i);
        } else if (v.getId() == R.id.layout_review) {
//              跳转到查看考试页面
            Intent i = new Intent(this, ReviewActivity.class);
            i.putExtra("sid", sid);
            startActivity(i);
        } else if (v.getId() == R.id.layout_score) {
//              跳转到查看成绩页面
            Intent i = new Intent(this, ScoreActivity.class);
            i.putExtra("sid", sid);
            startActivity(i);
        } else {
//              返回登录页面
            Intent i = new Intent(this, LoginActivity.class);
            startActivity(i);
        }
    }
```

步骤7：考试页面

1. 布局文件：activity_test.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    android:padding="10dp"
    tools:context=".TestActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginTop="15dp">
<!--显示学生姓名-->
        <TextView
            android:id="@+id/tv_sname"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:textSize="20sp"
            android:textColor="#88888888"
```

```xml
                android:layout_gravity="left"/>
<!--          显示学生当前做题进度-->
        <TextView
            android:id="@+id/tv_cnt"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:textSize="20sp"
            android:textColor="#88888888"
            android:layout_gravity="right"/>
    </LinearLayout>
<!--题目-->
    <TextView
        android:id="@+id/tv_question"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="30sp"
        android:textColor="#555555"
        android:layout_marginVertical="10dp"/>
<!--四个选项-->
    <TextView
        android:id="@+id/tv_option1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="5dp"
        android:textSize="25sp"
        android:textColor="#57bbC5"
        android:background="#1157bbC5"/>

    <TextView
        android:id="@+id/tv_option2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="5dp"
        android:textSize="25sp"
        android:textColor="#57bbC5"
        android:background="#2257bbC5"/>
    <TextView
        android:id="@+id/tv_option3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="5dp"
        android:textSize="25sp"
        android:textColor="#57bbC5"
        android:background="#1157bbC5"/>
    <TextView
        android:id="@+id/tv_option4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="5dp"
        android:textSize="25sp"
        android:textColor="#57bbC5"
        android:background="#2257bbC5"/>
<!--显示学生选择的答案-->
    <TextView
```

```xml
            android:id="@+id/tv_choose"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginVertical="10dp"
            android:textSize="25sp"/>

    <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="20dp"
            android:orientation="horizontal">
<!--上一题-->
        <Button
            android:id="@+id/btn_pre"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="上一题"
            android:textColor="#FFFFFF"
            android:background="#4757AE"
            android:layout_margin="20dp"
            android:textSize="20sp"/>
<!--下一题-->
        <Button
            android:id="@+id/btn_next"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="下一题"
            android:textColor="#FFFFFF"
            android:background="#4757AE"
            android:layout_margin="20dp"
            android:textSize="20sp"/>
<!--交卷-->
        <Button
            android:id="@+id/btn_submit"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="交卷"
            android:textColor="#FFFFFF"
            android:background="#4757AE"
            android:layout_margin="20dp"
            android:textSize="20sp"/>
    </LinearLayout>
</LinearLayout>
```

2. 页面初始化：TestActivity.java

step1-7

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
//7-当前activity实现OnClickListener接口
public class TestActivity extends AppCompatActivity implements
View.OnClickListener {
//      6-设置全局变量
    private TextView tv_sname;
    private TextView tv_cnt;
    private TextView tv_question;
    private TextView tv_option1;
    private TextView tv_option2;
    private TextView tv_option3;
    private TextView tv_option4;
    private TextView tv_choose;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_test);
//        4-调用initView
        initView();
//        5-获得从Main页面传过来的intent
        if (getIntent() != null) {
            Intent i = getIntent();
            tv_sname.setText("用户: " + i.getStringExtra("sname"));
        }
    }

    void initView() {
//        1-页面控件初始化
        tv_sname = findViewById(R.id.tv_sname);
        tv_cnt = findViewById(R.id.tv_cnt);
        tv_question = findViewById(R.id.tv_question);
        tv_option1 = findViewById(R.id.tv_option1);
        tv_option2 = findViewById(R.id.tv_option2);
        tv_option3 = findViewById(R.id.tv_option3);
        tv_option4 = findViewById(R.id.tv_option4);
        tv_choose = findViewById(R.id.tv_choose);
//        2-对每个选项的TextView设置监听
        tv_option1.setOnClickListener(this);
        tv_option2.setOnClickListener(this);
        tv_option3.setOnClickListener(this);
        tv_option4.setOnClickListener(this);
//        3-对三个按钮设置监听
```

```
        findViewById(R.id.btn_pre).setOnClickListener(this);
        findViewById(R.id.btn_next).setOnClickListener(this);
        findViewById(R.id.btn_submit).setOnClickListener(this);
    }


    @Override
    public void onClick(View v) {


    }
}
```

3. 考题数据库加载: DBHelper.java

3-1 上传题目

上传exam_insert.txt至/data/data/<应用包名>/databases/目录下：

3-2 加载题目到数据库

cmd -> 通过adb shell进入模拟器，（参考步骤4，3，3-7），导入题库

3-3 查询所有题目：DBHelper.java

在DBHelper.java中增加新的方法：查询examinfo中所有记录并返回游标。

```
    package com.example.examinationapp;


//1-继承SQLiteOpenHelper抽象类
public class DBHelper extends SQLiteOpenHelper {

...

    public Cursor loadExam() {
```

```
        Cursor cursor = null;
        SQLiteDatabase db = getReadableDatabase();
        cursor = db.query(TABLE_EXAM,
                null, null, null,
                null, null, null);
        return cursor;
    }
}
```

3-4 在页面显示题目：TestActivity.java

step1-4

```java
package com.example.examinationapp;

...
//7-当前activity实现OnClickListener接口
public class TestActivity extends AppCompatActivity implements
View.OnClickListener {
    ...
//    2-与数据库初始化相关的全局变量
    private DBHelper dbHelper;
    private Cursor cursor;  // 查询得到的所有题目
    private int questionCnt;  //题目总数
    private String[] stuAns;  // 学生的答案，用数组保存
    private String[] rightAns;  // 正确答案
    private int idx = 0;  // 当前题目索引号

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_test);
//        调用initView
        initView();
//        获得从Main页面传过来的intent
        if (getIntent() != null) {
            Intent i = getIntent();
            tv_sname.setText("用户: " + i.getStringExtra("sname"));
        }
//        4-调用initView
        initDB();
    }

    void initView() {
    ...
    }

//    1-数据库初始化
    void initDB() {
        dbHelper = new DBHelper(this);
        cursor = dbHelper.loadExam();
        if (cursor != null && cursor.getCount() > 0) {
            questionCnt = cursor.getCount();
            stuAns = new String[questionCnt];  //创建空的数组用于存放学生答案
            rightAns = new String[questionCnt];  //创建空的数组用于存放题目的正确答案
```

```
                cursor.moveToNext();
                rightAns[idx] = cursor.getString(6); //设置正确答案数组的第一个值
                show(); // 在页面显示题目
            }
        }
        void show() {
//          3-页面显示题目,做题进度与用户选择的答案
            tv_cnt.setText("已完成：" + (idx+1) + "/" + questionCnt);
            tv_question.setText(cursor.getString(1));
            tv_option1.setText("A." + cursor.getString(2));
            tv_option2.setText("B." + cursor.getString(3));
            tv_option3.setText("C." + cursor.getString(4));
            tv_option4.setText("D." + cursor.getString(5));
            if (stuAns[idx] != null) {
                tv_choose.setText("你的选择：" + stuAns[idx]);
            } else {
                tv_choose.setText("");
            }
        }


        @Override
        public void onClick(View v) {
        }
    }
```

3-5 计算学生成绩并保存到数据库：TestActivity.java

```
    ...

//7-当前activity实现OnClickListener接口
public class TestActivity extends AppCompatActivity implements
View.OnClickListener {

    ...
    Student candidate = null; // 6-设置该对象为全局变量

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_test);
        ...
        if (getIntent() != null) {
            Intent i = getIntent();
            tv_sname.setText("用户：" + i.getStringExtra("sname"));
//              5-创建student对象表示当前考生：candidate,并设置该对象的学号
            candidate = new Student();
            candidate.setSid(i.getStringExtra("sid"));
        }
        ...
    }

...
    @Override
    public void onClick(View v) {
        if (cursor == null || cursor.getCount() < 0) {
```

```java
                    return;
                }
//          1-跳回上一题
            if (v.getId() == R.id.btn_pre) {
                if(cursor.moveToPrevious()){
                    idx--; // 题号-1
                    show(); // 显示题目
                } else {
                    Toast.makeText(this, "已经是第一题", Toast.LENGTH_SHORT).show();
                }
//        2-跳转到下一题
            } else if (v.getId() == R.id.btn_next) {
                if(cursor.moveToNext()) {
                    idx++; // 题号+1
                    if (rightAns[idx] == null) { // 记录该题的正确答案
                        rightAns[idx] = cursor.getString(6);
                    }
                    show(); // 显示题目
                } else {
                    Toast.makeText(this, "已经是最后一题", Toast.LENGTH_SHORT).show();
                }
//          3-用户点击选项选择
            } else if(v.getId() == R.id.tv_option1 || v.getId() == R.id.tv_option2
|| v.getId() == R.id.tv_option3 ||v.getId() == R.id.tv_option4) {
                TextView tv = (TextView) v; // 将当前v对象强转为TextView对象
                stuAns[idx] = tv.getText().toString().substring(2); // 记录学生的答案
                tv_choose.setText("你的选择：" + tv.getText().toString()); // 在页面上显
示学生的选择
            } else {
//          4-用户点击交卷
                calScore(); // 计算学生成绩
                dbHelper.updateGrade(candidate); // 更新数据库student表格中学生的成绩
                Toast.makeText(this, "提交成功", Toast.LENGTH_SHORT).show();
                finish(); // 结束当前activity,返回主页
            }
        }
//    7-计算学生成绩
    void calScore() {
        int score = 0;
        for (int i=0; i < questionCnt; i++) { // 遍历所有题目
            if (stuAns[i] == null) { //如果学生没有作答,直接跳到下一题
                stuAns[i] = "None";
                continue;
            }
            if (stuAns[i].equals(rightAns[i])) { // 判断学生答案与正确答案是否相等
                score = score + 10; // 每题10分
            }
        }
        candidate.setSscore(score); // 设置当前考生的成绩
        String ans = String.join(";", stuAns);
        candidate.setExamans(ans); // 设置当前考生的答案
        int examcnt = candidate.getExamcnt() + 1;
        candidate.setExamcnt(examcnt); // 设置当前考试的考试次数
    }
}
```

3-6 更新数据库中学生成绩：DBHelper.java

```java
package com.example.examinationapp;
...

//1-继承SQLiteOpenHelper抽象类
public class DBHelper extends SQLiteOpenHelper {
...
    public int updateGrade(Student stu) {
        SQLiteDatabase db = getWritableDatabase();
        String whereClause = "sid=?";
        String [] args = new String[]{stu.getSid()};
        ContentValues vals = new ContentValues();
        vals.put("sscore", stu.sscore);
        vals.put("examans", stu.examans);
        vals.put("examcnt", stu.examcnt);
        return db.update(TABLE_STU, vals, whereClause, args);
    }
}
```

步骤8：查看成绩统计页面

1.布局文件：activity_score.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    android:background="#FFFFFFFF"
    tools:context=".ScoreActivity">
<!--图标-->
    <TextView
        android:layout_width="180dp"
        android:layout_height="180dp"
        android:background="@drawable/stat"
        android:layout_gravity="center"
        android:layout_margin="30dp"/>

<!--成绩查询-->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="成绩查询"
        android:textColor="#0C6BC2"
        android:textSize="25sp"
        android:background="#220C6BC2"
        android:layout_margin="10dp"
```

```xml
            android:padding="5dp"/>
    <!--学生信息显示-->
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal"
            android:layout_marginHorizontal="20dp"
            android:layout_marginVertical="5dp">

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="match_parent"
                android:layout_weight="0"
                android:text="学          号： "
                android:textColor="#0C6BC2"
                android:textSize="25sp" />

            <TextView
                android:id="@+id/tv_sid"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:textSize="25sp" />
        </LinearLayout>

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal"
            android:layout_marginHorizontal="20dp"
            android:layout_marginVertical="5dp">

            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="0"
                android:text="学生姓名：  "
                android:textColor="#0C6BC2"
                android:textSize="25sp" />

            <TextView
                android:id="@+id/tv_sname"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:textSize="25sp" />
        </LinearLayout>

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal"
            android:layout_marginHorizontal="20dp"
            android:layout_marginVertical="5dp">
```

```xml
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="0"
            android:text="所在院系：  "
            android:textColor="#0C6BC2"
            android:textSize="25sp" />

        <TextView
            android:id="@+id/tv_sdep"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:textSize="25sp" />
    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginHorizontal="20dp"
        android:layout_marginVertical="5dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="0"
            android:text="考试次数：  "
            android:textColor="#0C6BC2"
            android:textSize="25sp" />

        <TextView
            android:id="@+id/tv_ecnt"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:textSize="25sp" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginHorizontal="20dp"
        android:layout_marginVertical="5dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="0"
            android:text="考试成绩：  "
            android:textColor="#0C6BC2"
            android:textSize="25sp" />

        <TextView
            android:id="@+id/tv_sscore"
```

```xml
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:textSize="25sp" />
        </LinearLayout>
<!--      显示通过还是不及格-->
        <ImageView
            android:id="@+id/iv_res"
            android:layout_width="300dp"
            android:layout_height="60dp"
            android:layout_gravity="center"/>
<!--返回按钮-->
        <Button
            android:id="@+id/btn_back"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:layout_margin="20dp"
            android:text="返回"
            android:textSize="25sp"
            android:textColor="#FFFFFF"
            android:background="#1C8DE6" />
</LinearLayout>
```

2. 实现页面功能ScoreActivity.java

- 从数据库查询学生数据并显示;
- 结束返回主页面
- step1-6

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.TextView;

public class ScoreActivity extends AppCompatActivity implements
View.OnClickListener {
//4-设置相关全局变量
    private TextView tv_sid;
    private TextView tv_sname;
    private TextView tv_sdep;
    private TextView tv_sscore;
    private TextView tv_ecnt;
    private String sid;
    private Student stu = null;
    private DBHelper dbHelper;
    private ImageView iv_res;

    @Override
```

```java
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_score);
//        5-分别调用三个方法
        initView();
        initDB();
        show();
    }
//    1-页面初始化
    void initView() {
        tv_sid = findViewById(R.id.tv_sid);
        tv_sname = findViewById(R.id.tv_sname);
        tv_sdep = findViewById(R.id.tv_sdep);
        tv_sscore = findViewById(R.id.tv_sscore);
        tv_ecnt = findViewById(R.id.tv_ecnt);
        iv_res = findViewById(R.id.iv_res);
        findViewById(R.id.btn_back).setOnClickListener(this);
        if (getIntent() != null) {
            Intent i = getIntent();
            sid = i.getStringExtra("sid");
        }
    }
//    2-数据库初始化并根据学号查询改学生数据
    void initDB() {
        dbHelper = new DBHelper(this);
        stu = dbHelper.queryStu(sid);
    }
//3-显示学生数据
    void show() {
        if (stu != null) {
            tv_sid.setText(stu.getSid());
            tv_sname.setText(stu.getSname());
            tv_sdep.setText(stu.getSdep());
            tv_sscore.setText(String.valueOf(stu.getSscore()));
            tv_ecnt.setText(String.valueOf(stu.getExamcnt()));
            if (stu.getSscore() >= 60) { // 及格则显示及格，否则为不及格图片
                iv_res.setImageResource(R.drawable.pass);
            } else {
                iv_res.setImageResource(R.drawable.failed);
            }
        }
    }
//    6-结束当前页面
    @Override
    public void onClick(View v) {
        finish();
    }
}
```

3. 数据库查询：DBHelper.java

通过学号查询学生的成绩信息等。

```java
package com.example.examinationapp;
...

public class DBHelper extends SQLiteOpenHelper {
...

    public Student queryStu(String sid) {
        SQLiteDatabase db = getReadableDatabase();
        String whereClause = "sid=?"; // 根据学号查询该学生数据，并将数据放入student对象

        String [] args = new String[]{sid};
        Student stu = null;
        Cursor cursor = db.query(TABLE_STU,
                null, whereClause, new String[] {sid},
                null, null, null);
        if(cursor.getCount() > 0) {
            stu = new Student();
            cursor.moveToNext();
            stu.setSid(sid);
            stu.setSname(cursor.getString(cursor.getColumnIndex("sname")));
            stu.setSdep(cursor.getString(cursor.getColumnIndex("sdep")));
            stu.setSscore(cursor.getInt(cursor.getColumnIndex("sscore")));
            stu.setExamcnt(cursor.getInt(cursor.getColumnIndex("examcnt")));
            stu.setExamans(cursor.getString(cursor.getColumnIndex("examans")));
        }
        return stu;
    }
}
```

步骤9：查看考试页面

1. 页面布局: activity_review.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    android:padding="10dp"
    tools:context=".ReviewActivity">
<!--显示题目进度-->
    <TextView
        android:id="@+id/tv_cnt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:textColor="#88888888"
```

```xml
            android:layout_gravity="right"
            android:layout_marginTop="15dp"/>
    <!--显示题目-->
        <TextView
            android:id="@+id/tv_question"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textSize="30sp"
            android:textColor="#555555"
            android:layout_marginVertical="15dp"/>


        <TextView
            android:id="@+id/tv_option1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="5dp"
            android:textSize="25sp"
            android:textColor="#57bbC5"
            android:background="#1157bbC5"/>


        <TextView
            android:id="@+id/tv_option2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="5dp"
            android:textSize="25sp"
            android:textColor="#57bbC5"
            android:background="#2257bbC5"/>
        <TextView
            android:id="@+id/tv_option3"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="5dp"
            android:textSize="25sp"
            android:textColor="#57bbC5"
            android:background="#1157bbC5"/>
        <TextView
            android:id="@+id/tv_option4"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="5dp"
            android:textSize="25sp"
            android:textColor="#57bbC5"
            android:background="#2257bbC5"/>
    <!--显示用户答案-->
        <TextView
            android:id="@+id/tv_choose"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginVertical="10dp"
            android:textSize="25sp"/>
    <!--显示正确答案-->
        <TextView
            android:id="@+id/tv_ans"
            android:layout_width="match_parent"
```

```xml
            android:layout_height="wrap_content"
            android:layout_marginVertical="10dp"
            android:background="#22AA22C5"
            android:textSize="25sp"/>


    <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:padding="20dp"
            android:orientation="horizontal">
<!--上一题-->
        <Button
            android:id="@+id/btn_pre"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="上一题"
            android:textColor="#FFFFFF"
            android:background="#4757AE"
            android:layout_margin="20dp"
            android:textSize="20sp"/>
<!--下一题-->
        <Button
            android:id="@+id/btn_next"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="下一题"
            android:textColor="#FFFFFF"
            android:background="#4757AE"
            android:layout_margin="20dp"
            android:textSize="20sp"/>
        <!--    返回-->
        <Button
            android:id="@+id/btn_back"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="返回"
            android:textColor="#FFFFFF"
            android:background="#4757AE"
            android:layout_margin="20dp"
            android:layout_gravity="center"
            android:textSize="25sp"
            android:visibility="gone"/>
    </LinearLayout>
</LinearLayout>
```

2. 实现页面功能ReviewActivity.java

step 1-4

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.Cursor;
import android.graphics.Color;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class ReviewActivity extends AppCompatActivity implements
View.OnClickListener {
    private TextView tv_question;
    private TextView tv_option1, tv_option2, tv_option3, tv_option4;
    private TextView tv_choose, tv_ans,tv_cnt;
    private Cursor cursor;
    private Student stu = null;
    private DBHelper dbHelper;
    private String sid;
    private int idx = 0;
    private String[] stuAns;
    private Button btn_back;
    private int cnt;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_review);
        initView();
        initDB();
    }
//    1-初始化页面控件
    void initView() {
        tv_question = findViewById(R.id.tv_question);
        tv_option1 = findViewById(R.id.tv_option1);
        tv_option2 = findViewById(R.id.tv_option2);
        tv_option3 = findViewById(R.id.tv_option3);
        tv_option4 = findViewById(R.id.tv_option4);
        tv_choose = findViewById(R.id.tv_choose);
        tv_cnt = findViewById(R.id.tv_cnt);
        tv_ans = findViewById(R.id.tv_ans);
        btn_back = findViewById(R.id.btn_back);
        findViewById(R.id.btn_pre).setOnClickListener(this);
        findViewById(R.id.btn_next).setOnClickListener(this);
        btn_back.setOnClickListener(this);
        if (getIntent() != null) {
            Intent i = getIntent();
```

```java
                sid = i.getStringExtra("sid");
            }
        }
//2-数据库初始化
    void initDB() {
        dbHelper = new DBHelper(this);
        stu = dbHelper.queryStu(sid);
        stuAns = stu.getExamans().split(";");
        cursor = dbHelper.loadExam();
        if (cursor != null && cursor.getCount() > 0) {
            cnt = cursor.getCount();
            cursor.moveToNext();
            show();
        }
    }

//3-页面显示题目以及学生作答结果
    void show() {
        tv_cnt.setText("已完成："+(idx+1) + "/" + cnt);
        tv_question.setText(cursor.getString(1));
        tv_option1.setText("A." + cursor.getString(2));
        tv_option2.setText("B." + cursor.getString(3));
        tv_option3.setText("C." + cursor.getString(4));
        tv_option4.setText("D." + cursor.getString(5));
        tv_choose.setText("你的选择：" + stuAns[idx]);
        tv_ans.setText("正确答案：" + cursor.getString(6));
//          如果学生回答正确，设置学生作答为绿色，否则为红色
        if (stuAns[idx].equals(cursor.getString(6))) {
            tv_choose.setTextColor(Color.GREEN);
        } else {
            tv_choose.setTextColor(Color.RED);
        }
//          当到最后一题时，设置返回按钮显示，否则隐藏
        if (idx < (cnt - 1)) {
            btn_back.setVisibility(View.GONE);
        } else {
            btn_back.setVisibility(View.VISIBLE);
        }
    }

//     4-设置3个按钮的监听事件
    @Override
    public void onClick(View v) {
//          上一题按钮
        if (v.getId() == R.id.btn_pre) {
            if(cursor.moveToPrevious()) {
                idx--;
                show();
            } else {
                Toast.makeText(this, "已经是第一题", Toast.LENGTH_SHORT).show();
            }
//              下一题按钮
        } else if (v.getId() == R.id.btn_next) {
            if(cursor.moveToNext()) {
                idx++;
```

```
                show();
            } else {
                Toast.makeText(this, "已经是最后一题", Toast.LENGTH_SHORT).show();
            }
//          返回按钮
        } else {
            finish();
        }
    }
}
```

源码文件查看

1. LoginActivity.java

```
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.database.SQLException;
import android.os.Bundle;
import android.view.View;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.Toast;

//4-让当前activity实现OnClickListener接口，并实现onClick方法
public class LoginActivity extends AppCompatActivity implements
View.OnClickListener {
//      3-设置变量为全局变量
    private EditText et_uid;
    private EditText et_upwd;
    private CheckBox cb_save;
    private SharedPreferences pref;
    private SharedPreferences.Editor editor;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_login);
//          2-调用初始化方法
        initView();
        pref = getSharedPreferences("login", Context.MODE_PRIVATE);
        editor = pref.edit();
        loadInfo();
    }

//      1-页面控件初始化
    void initView() {
```

```java
        // 学号输入框
        et_uid = findViewById(R.id.et_uid);
        // 密码输入框
        et_upwd = findViewById(R.id.et_upwd);
        // 是否保存密码复选框
        cb_save = findViewById(R.id.cb_save);
        findViewById(R.id.btn_login).setOnClickListener(this); // 设置监听：登录按钮
        findViewById(R.id.btn_register).setOnClickListener(this); //设置监听：跳转
注册
    }
    void loadInfo(){
        String name = pref.getString("uid", "");
        String pwd = pref.getString("upwd", "");
        boolean isSave = pref.getBoolean("isSave", false);
        if (isSave) {
            et_uid.setText(name);
            et_upwd.setText(pwd);
            cb_save.setChecked(true);
        }
    }
//    5-在onClick中写入按钮监听的事件
    @Override
    public void onClick(View v) {

        if (v.getId() == R.id.btn_login) {
//            1-获得页面用户输入
            String uid = et_uid.getText().toString();
            String upwd = et_upwd.getText().toString();
            boolean isSave = cb_save.isChecked();
            if (isSave) {
                editor.putString("uid", uid);
                editor.putString("upwd", upwd);
                editor.putBoolean("isSave", isSave);
                editor.commit();
            }
            try {
//                2-数据库初始化
                DBHelper dbHelper = new DBHelper(this);
//                3-调用数据库的方法校验用户
                String sname = dbHelper.verifyStu(uid, upwd);
//                4-判断返回的学生姓名是否为空
                if (!sname.equals("")) {
                    //        5-登录按钮跳转到主页：在intent中增加数据,实现带数据的跳转
                    Intent i = new Intent(this, MainActivity.class);
                    i.putExtra("sname", sname);
                    i.putExtra("sid", uid);
                    startActivity(i);
                } else {
//                    6-学生姓名为空,告诉用户登录失败
                    Toast.makeText(this, "登录失败：用户名或密码错误",
Toast.LENGTH_LONG).show();
                }
            } catch (SQLException e) {
                e.printStackTrace();
            }
```

```java
        } else { // 注册按钮跳转到注册页面
            Intent i = new Intent(this, RegisterActivity.class);
            startActivity(i);
        }
    }
}
```

2. RegisterActivity.java

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

//4-让当前activity实现OnClickListener接口，并实现onClick方法
public class RegisterActivity extends AppCompatActivity implements
View.OnClickListener{
//      3-设置变量为全局变量
    private EditText et_rid;
    private EditText et_rname;
    private EditText et_rpwd;
    private EditText et_rdep;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_register);
//        2-调用初始化方法
        initView();
    }
//    1-页面控件初始化
    void initView() {
        et_rid = findViewById(R.id.et_rsid); //学号输入框
        et_rname = findViewById(R.id.et_rname); //学生姓名输入框
        et_rpwd = findViewById(R.id.et_rpwd); //学生密码输入框
        et_rdep = findViewById(R.id.et_rdep); //学生学院输入框
        findViewById(R.id.btn_registeruser).setOnClickListener(this); // 注册按钮
监听
    }
    //      5-在onClick中写入按钮监听的事件
    @Override
    public void onClick(View v) {
        // 获得页面用户输入值
        String rid = et_rid.getText().toString();
        String rname = et_rname.getText().toString();
        String rpwd = et_rpwd.getText().toString();
        String rdep = et_rdep.getText().toString();
        Student stu = new Student(rid, rname, rpwd, rdep);
        // dbHelper初始化
```

```java
        DBHelper dbHelper = new DBHelper(this);
        // 调用数据库的用户注册方法
        if (dbHelper.registerStu(stu) > 0) { // 成功插入数据,返回登录页面
            Toast.makeText(this, "注册成功", Toast.LENGTH_SHORT).show();
            finish(); // 将当前的activity结束,则返回登录页面
        } else { // 没有成功往数据库中插入数据,则表示改用户已经被注册
            Toast.makeText(this, "注册失败：该学号已经被注册",
Toast.LENGTH_LONG).show();
        }
    }
}
```

3. MainActivity.java

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {
//    设置全局变量
    private String sname;
    private String sid;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
//      6-调用initView
        initView();
    }
    //    1-页面控件初始化
    void initView() {
        TextView tv_welcome = findViewById(R.id.tv_welcome);
        //    2-获得从login页面传过来的intent
        if (getIntent() != null) {
            Intent i = getIntent();
            //    3-从中取出学生姓名,学号信息
            sname = i.getStringExtra("sname");
            sid = i.getStringExtra("sid");
            //    4-在页面显示用户名
            tv_welcome.setText("欢迎用户：" + sname);
        }
//      5-对页面四个layout设置监听
        findViewById(R.id.layout_test).setOnClickListener(this);
        findViewById(R.id.layout_review).setOnClickListener(this);
        findViewById(R.id.layout_score).setOnClickListener(this);
        findViewById(R.id.layout_exit).setOnClickListener(this);
    }

    @Override
```

```java
    public void onClick(View v) {
        if (v.getId() == R.id.layout_test) {
//              跳转到考试页面
            Intent i = new Intent(this, TestActivity.class);
            i.putExtra("sname", sname);
            i.putExtra("sid", sid);
            startActivity(i);
        } else if (v.getId() == R.id.layout_review) {
//              跳转到查看考试页面
            Intent i = new Intent(this, ReviewActivity.class);
            i.putExtra("sid", sid);
            startActivity(i);
        } else if (v.getId() == R.id.layout_score) {
//              跳转到查看成绩页面
            Intent i = new Intent(this, ScoreActivity.class);
            i.putExtra("sid", sid);
            startActivity(i);
        } else {
//              返回登录页面
            Intent i = new Intent(this, LoginActivity.class);
            startActivity(i);
        }
    }
}
```

4. TestActivity.java

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;

//7-当前activity实现OnClickListener接口
public class TestActivity extends AppCompatActivity implements
View.OnClickListener {

    private TextView tv_sname;
    private TextView tv_cnt;
    private TextView tv_question;
    private TextView tv_option1;
    private TextView tv_option2;
    private TextView tv_option3;
    private TextView tv_option4;
    private TextView tv_choose;
//    2-与数据库初始化相关的全局变量
    private DBHelper dbHelper;
    private Cursor cursor; // 查询得到的所有题目
    private int questionCnt; //题目总数
```

```java
    private String[] stuAns; // 学生的答案,用数组保存
    private String[] rightAns; // 正确答案
    private int idx = 0; // 当前题目索引号
    Student candidate = null; // 6-设置该对象为全局变量

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_test);
//        调用initView
        initView();
//        获得从Main页面传过来的intent
        if (getIntent() != null) {
            Intent i = getIntent();
            tv_sname.setText("用户: " + i.getStringExtra("sname"));
//            5-创建student对象表示当前考生: candidate,并设置该对象的学号
            candidate = new Student();
            candidate.setSid(i.getStringExtra("sid"));
        }
        initDB();
    }


    void initView() {
//        页面控件初始化
        tv_sname = findViewById(R.id.tv_sname);
        tv_cnt = findViewById(R.id.tv_cnt);
        tv_question = findViewById(R.id.tv_question);
        tv_option1 = findViewById(R.id.tv_option1);
        tv_option2 = findViewById(R.id.tv_option2);
        tv_option3 = findViewById(R.id.tv_option3);
        tv_option4 = findViewById(R.id.tv_option4);
        tv_choose = findViewById(R.id.tv_choose);
//        对每个选项的TextView设置监听
        tv_option1.setOnClickListener(this);
        tv_option2.setOnClickListener(this);
        tv_option3.setOnClickListener(this);
        tv_option4.setOnClickListener(this);
//        对三个按钮设置监听
        findViewById(R.id.btn_pre).setOnClickListener(this);
        findViewById(R.id.btn_next).setOnClickListener(this);
        findViewById(R.id.btn_submit).setOnClickListener(this);
    }
//    1-数据库初始化
    void initDB() {
        dbHelper = new DBHelper(this);
        cursor = dbHelper.loadExam();
        if (cursor != null && cursor.getCount() > 0) {
            questionCnt = cursor.getCount();
            stuAns = new String[questionCnt]; //创建空的数组用于存放学生答案
            rightAns = new String[questionCnt]; //创建空的数组用于存放题目的正确答案
            cursor.moveToNext();
            rightAns[idx] = cursor.getString(6); //设置正确答案数组的第一个值
            show(); // 在页面显示题目
        }
    }
```

```java
    void show() {
//        2-页面显示题目,做题进度与用户选择的答案
        tv_cnt.setText("已完成:"+(idx+1) + "/" + questionCnt);
        tv_question.setText(cursor.getString(1));
        tv_option1.setText("A." + cursor.getString(2));
        tv_option2.setText("B." + cursor.getString(3));
        tv_option3.setText("C." + cursor.getString(4));
        tv_option4.setText("D." + cursor.getString(5));
        if (stuAns[idx] != null) {
            tv_choose.setText("你的选择: " + stuAns[idx]);
        } else {
            tv_choose.setText("");
        }
    }


    @Override
    public void onClick(View v) {
        if (cursor == null || cursor.getCount() < 0) {
            return;
        }
//        1-跳回上一题
        if (v.getId() == R.id.btn_pre) {
            if(cursor.moveToPrevious()){
                idx--; // 题号-1
                show(); // 显示题目
            } else {
                Toast.makeText(this, "已经是第一题", Toast.LENGTH_SHORT).show();
            }
        } else if (v.getId() == R.id.btn_next) { // 2-跳转到下一题
            if(cursor.moveToNext()) {
                idx++; // 题号+1
                if (rightAns[idx] == null) { // 记录该题的正确答案
                    rightAns[idx] = cursor.getString(6);
                }
                show(); // 显示题目
            } else {
                Toast.makeText(this, "已经是最后一题", Toast.LENGTH_SHORT).show();
            }
//            3-用户点击选项选择
        } else if(v.getId() == R.id.tv_option1 || v.getId() == R.id.tv_option2
|| v.getId() == R.id.tv_option3 ||v.getId() == R.id.tv_option4) {
            TextView tv = (TextView) v; // 将当前v对象强转为TextView对象
            stuAns[idx] = tv.getText().toString().substring(2); // 记录学生的答案
            tv_choose.setText("你的选择: " + tv.getText().toString()); // 在页面上显
示学生的选择
        } else { // 4-用户点击交卷
            calScore(); // 计算学生成绩
            dbHelper.updateGrade(candidate); // 更新数据库student表格中学生的成绩
            Toast.makeText(this, "提交成功", Toast.LENGTH_SHORT).show();
            finish(); // 结束当前activity,返回主页
        }
    }
//    7-计算学生成绩
    void calScore() {
        int score = 0;
```

```java
        for (int i=0; i < questionCnt; i++) { // 遍历所有题目
            if (stuAns[i] == null) { //如果学生没有作答,直接跳到下一题
                stuAns[i] = "None";
                continue;
            }
            if (stuAns[i].equals(rightAns[i])) { // 判断学生答案与正确答案是否相等
                score = score + 10; // 每题10分
            }
        }
        candidate.setSscore(score); // 设置当前考生的成绩
        String ans = String.join(";", stuAns);
        candidate.setExamans(ans); // 设置当前考生的答案
        int examcnt = candidate.getExamcnt() + 1;
        candidate.setExamcnt(examcnt); // 设置当前考试的考试次数
    }
}
```

5. ScoreActivity.java

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.TextView;

public class ScoreActivity extends AppCompatActivity implements
View.OnClickListener {
//4-设置相关全局变量
    private TextView tv_sid;
    private TextView tv_sname;
    private TextView tv_sdep;
    private TextView tv_sscore;
    private TextView tv_ecnt;
    private String sid;
    private Student stu = null;
    private DBHelper dbHelper;
    private ImageView iv_res;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_score);
//        5-分别调用三个方法
        initView();
        initDB();
        show();
    }
//    1-页面初始化
    void initView() {
        tv_sid = findViewById(R.id.tv_sid);
        tv_sname = findViewById(R.id.tv_sname);
```

```java
            tv_sdep = findViewById(R.id.tv_sdep);
            tv_sscore = findViewById(R.id.tv_sscore);
            tv_ecnt = findViewById(R.id.tv_ecnt);
            iv_res = findViewById(R.id.iv_res);
            findViewById(R.id.btn_back).setOnClickListener(this);
            if (getIntent() != null) {
                Intent i = getIntent();
                sid = i.getStringExtra("sid");
            }
        }
//      2-数据库初始化并根据学号查询改学生数据
        void initDB() {
            dbHelper = new DBHelper(this);
            stu = dbHelper.queryStu(sid);
        }
//3-显示学生数据
        void show() {
            if (stu != null) {
                tv_sid.setText(stu.getSid());
                tv_sname.setText(stu.getSname());
                tv_sdep.setText(stu.getSdep());
                tv_sscore.setText(String.valueOf(stu.getSscore()));
                tv_ecnt.setText(String.valueOf(stu.getExamcnt()));
                if (stu.getSscore() >= 60) { // 及格则显示及格，否则为不及格图片
                    iv_res.setImageResource(R.drawable.pass);
                } else {
                    iv_res.setImageResource(R.drawable.failed);
                }
            }
        }
//      6-结束当前页面
        @Override
        public void onClick(View v) {
            finish();
        }
    }
}
```

6. ReviewActivity.java

```java
package com.example.examinationapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.database.Cursor;
import android.graphics.Color;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class ReviewActivity extends AppCompatActivity implements
View.OnClickListener {
```

```java
    private TextView tv_question;
    private TextView tv_option1, tv_option2, tv_option3, tv_option4;
    private TextView tv_choose, tv_ans,tv_cnt;
    private Cursor cursor;
    private Student stu = null;
    private DBHelper dbHelper;
    private String sid;
    private int idx = 0;
    private String[] stuAns;
    private Button btn_back;
    private int cnt;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_review);
        initView();
        initDB();
    }
//     1-初始化页面控件
    void initView() {
        tv_question = findViewById(R.id.tv_question);
        tv_option1 = findViewById(R.id.tv_option1);
        tv_option2 = findViewById(R.id.tv_option2);
        tv_option3 = findViewById(R.id.tv_option3);
        tv_option4 = findViewById(R.id.tv_option4);
        tv_choose = findViewById(R.id.tv_choose);
        tv_cnt = findViewById(R.id.tv_cnt);
        tv_ans = findViewById(R.id.tv_ans);
        btn_back = findViewById(R.id.btn_back);
        findViewById(R.id.btn_pre).setOnClickListener(this);
        findViewById(R.id.btn_next).setOnClickListener(this);
        btn_back.setOnClickListener(this);
        if (getIntent() != null) {
            Intent i = getIntent();
            sid = i.getStringExtra("sid");
        }
    }
//2-数据库初始化
    void initDB() {
        dbHelper = new DBHelper(this);
        stu = dbHelper.queryStu(sid);
        stuAns = stu.getExamans().split(";");
        cursor = dbHelper.loadExam();
        if (cursor != null && cursor.getCount() > 0) {
            cnt = cursor.getCount();
            cursor.moveToNext();
            show();
        }
    }

//3-页面显示题目以及学生作答结果
    void show() {
        tv_cnt.setText("已完成："+(idx+1) + "/" + cnt);
        tv_question.setText(cursor.getString(1));
```

```java
            tv_option1.setText("A." + cursor.getString(2));
            tv_option2.setText("B." + cursor.getString(3));
            tv_option3.setText("C." + cursor.getString(4));
            tv_option4.setText("D." + cursor.getString(5));
            tv_choose.setText("你的选择：" + stuAns[idx]);
            tv_ans.setText("正确答案：" + cursor.getString(6));
//          如果学生回答正确，设置学生作答为绿色，否则为红色
            if (stuAns[idx].equals(cursor.getString(6))) {
                tv_choose.setTextColor(Color.GREEN);
            } else {
                tv_choose.setTextColor(Color.RED);
            }
//          当到最后一题时，设置返回按钮显示，否则隐藏
            if (idx < (cnt - 1)) {
                btn_back.setVisibility(View.GONE);
            } else {
                btn_back.setVisibility(View.VISIBLE);
            }
        }


//      4-设置3个按钮的监听事件
        @Override
        public void onClick(View v) {
//          上一题按钮
            if (v.getId() == R.id.btn_pre) {
                if(cursor.moveToPrevious()) {
                    idx--;
                    show();
                } else {
                    Toast.makeText(this, "已经是第一题", Toast.LENGTH_SHORT).show();
                }
//          下一题按钮
            } else if (v.getId() == R.id.btn_next) {
                if(cursor.moveToNext()) {
                    idx++;
                    show();
                } else {
                    Toast.makeText(this, "已经是最后一题", Toast.LENGTH_SHORT).show();
                }
//          返回按钮
            } else {
                finish();
            }
        }
    }
}
```

7. DBHelper.java

```java
package com.example.examinationapp;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.SQLException;
import android.database.sqlite.SQLiteDatabase;
```

```java
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

import java.io.FileInputStream;

//1-继承SQLiteOpenHelper抽象类
public class DBHelper extends SQLiteOpenHelper {
    //      1-定义数据库名称,表格名称
    public static final String DB_NAME = "examination.db";
    public static final String TABLE_STU = "student";
    public static final String TABLE_EXAM = "examinfo";
    // 2-定义建表语句:创建student表格
    private static final String CREATE_TABLE_STU = "create table if not exists "
+
            TABLE_STU + "(sid text primary key, " +
            "sname text not null, spwd text not null, " +
            "sdep text, sscore integer," +
            "examcnt integer, examtime text, examans text )";
    private static final String CREATE_TABLE_EXAM = "create table if not exists
"
            + TABLE_EXAM + "(tno integer primary key autoincrement, " +
            "question text not null, opt1 text not null," +
            "opt2 text not null, opt3 text not null," +
            "opt4 text not null, rightans text not null)";

//    3-修改构造函数
    public DBHelper(@Nullable Context context) {
        super(context, DB_NAME, null, 1);
    }
//    4-创建表格
    @Override
    public void onCreate(SQLiteDatabase db) {
        try {
            db.execSQL(CREATE_TABLE_STU);
            db.execSQL(CREATE_TABLE_EXAM);
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

    }

    public long registerStu(Student stu) {
        SQLiteDatabase db = getWritableDatabase();
        ContentValues vals = new ContentValues();
        vals.put("sid", stu.sid);
        vals.put("sname", stu.sname);
        vals.put("spwd", stu.spwd);
        vals.put("sdep", stu.sdep);
        long res = db.insert(TABLE_STU, null, vals);
        return res;
```

```java
    }

    public String verifyStu(String sid, String spwd) {
        SQLiteDatabase db = getReadableDatabase();
        String whereClause = "sid=? and spwd=?";
//          1-根据学号以及密码进行查询
        Cursor cursor = db.query(TABLE_STU,
                null, whereClause,
                new String[] {sid, spwd}, null, null, null);
//        2-查询到数据:返回学生名字
        if(cursor.getCount() > 0) {
            cursor.moveToNext();
            return cursor.getString(cursor.getColumnIndex("sname"));
        }
//        3-否则,返回空字符串
        return "";
    }
    public Cursor loadExam() {
        Cursor cursor = null;
        SQLiteDatabase db = getReadableDatabase();
        cursor = db.query(TABLE_EXAM,
                null, null, null,
                null, null, null);
        return cursor;
    }
    public int updateGrade(Student stu) {
        SQLiteDatabase db = getWritableDatabase();
        String whereClause = "sid=?";
        String [] args = new String[]{stu.getSid()};
        ContentValues vals = new ContentValues();
        vals.put("sscore", stu.sscore);
        vals.put("examans", stu.examans);
        vals.put("examcnt", stu.examcnt);
        return db.update(TABLE_STU, vals, whereClause, args);
    }

    public Student queryStu(String sid) {
        SQLiteDatabase db = getReadableDatabase();
        String whereClause = "sid=?"; // 根据学号查询该学生数据，并将数据放入student对
象
        String [] args = new String[]{sid};
        Student stu = null;
        Cursor cursor = db.query(TABLE_STU,
                null, whereClause, new String[] {sid},
                null, null, null);
        if(cursor.getCount() > 0) {
            stu = new Student();
            cursor.moveToNext();
            stu.setSid(sid);
            stu.setSname(cursor.getString(cursor.getColumnIndex("sname")));
            stu.setSdep(cursor.getString(cursor.getColumnIndex("sdep")));
            stu.setSscore(cursor.getInt(cursor.getColumnIndex("sscore")));
            stu.setExamcnt(cursor.getInt(cursor.getColumnIndex("examcnt")));
            stu.setExamans(cursor.getString(cursor.getColumnIndex("examans")));
        }
```

```
        return stu;
    }
}
```

8. Student.java

```java
package com.example.examinationapp;

public class Student {
    public String sid;
    public String sname;
    public String spwd;
    public String sdep = "";
    public int sscore = 0;
    public int examcnt = 0;
    public String examans;
    public String examtime = "";

    public Student() {


    }

    public Student(String sid, String sname, String spwd, String sdep) {
        this.sid = sid;
        this.sname = sname;
        this.spwd = spwd;
        this.sdep = sdep;
    }
    public void setSid(String sid) {
        this.sid = sid;
    }
    public void setSname(String sname) {
        this.sname = sname;
    }
    public void setSpwd(String spwd) {
        this.spwd = spwd;
    }
    public void setSdep(String sdep) {
        this.sdep = sdep;
    }
    public void setSscore(int sscore) {
        this.sscore = sscore;
    }
    public void setExamans(String examans) {
        this.examans = examans;
    }
    public void setExamcnt(int examcnt) {
        this.examcnt = examcnt;
    }
    public String getExamans() {
        return examans;
    }
    public int getSscore() {
        return sscore;
    }
```

```java
    public int getExamcnt() {
        return examcnt;
    }
    public String getSname() {
        return sname;
    }
    public String getSid() {
        return sid;
    }
    public String getSdep() {
        return sdep;
    }
    public String getSpwd() {
        return spwd;
    }
}
```

9. AndrodManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Chapter7">
        <activity
            android:name=".ScoreActivity"
            android:exported="false" />
        <activity
            android:name=".ReviewActivity"
            android:exported="false" />
        <activity
            android:name=".TestActivity"
            android:exported="false" />
        <activity
            android:name=".RegisterActivity"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="false" />
        <activity
            android:name=".LoginActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
```

```xml
</manifest>
```