Android final lab Record:

MainActivity.java

```java
package com.example.thing3;

import android.content.Intent;
import android.os.Bundle;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private Button bodybuildingButton, cardioButton;

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

        // Initialize buttons
        bodybuildingButton = findViewById(R.id.bodybuildingButton);
        cardioButton = findViewById(R.id.cardioButton);

        // Set up onClick listeners to navigate to the corresponding activity
        bodybuildingButton.setOnClickListener(v -> {
            // Navigate to Exercise Activity
            Intent intent = new Intent(MainActivity.this, ExerciseActivity.class);
            startActivity(intent);
        });

        cardioButton.setOnClickListener(v -> {
            // Navigate to Exercise Activity
            Intent intent = new Intent(MainActivity.this, ExerciseActivity.class);
            startActivity(intent);
        });
    }
}
```

Create multiple Activity:

```
package com.example.thing3;

import android.os.Bundle;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class CardioActivity extends AppCompatActivity {

    private TextView durationText, caloriesText;
    private Button saveButton;
    private ExerciseDBHelper dbHelper;

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

        // Initialize views
        durationText = findViewById(R.id.durationTextView);
        caloriesText = findViewById(R.id.caloriesTextView);
        saveButton = findViewById(R.id.saveButton);

        // Initialize the database helper
        dbHelper = new ExerciseDBHelper(this);

        // Save the data when the button is clicked
        saveButton.setOnClickListener(v -> {
            int duration = Integer.parseInt(durationText.getText().toString());
            int calories = Integer.parseInt(caloriesText.getText().toString());

            // Store data in SQLite (You can modify or add more parameters as needed)
            boolean isInserted = dbHelper.insertData(duration, 0, duration, calories);

            // Display a success or failure message
            if (isInserted) {
                Toast.makeText(CardioActivity.this, "Data saved successfully",
Toast.LENGTH_SHORT).show();
            } else {
                Toast.makeText(CardioActivity.this, "Failed to save data",
Toast.LENGTH_SHORT).show();
```

```
            }
        });
    }
}
```

DataBaseHelper.java

```
package com.example.thing3;

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

public class DatabaseHelper extends SQLiteOpenHelper {
    private static final String DATABASE_NAME = "exercise_data.db";
    private static final int DATABASE_VERSION = 1;

    public DatabaseHelper(Context context) {
        super(context, DATABASE_NAME, null, DATABASE_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        String createTable = "CREATE TABLE exercise_data (" +
                "id INTEGER PRIMARY KEY AUTOINCREMENT, " +
                "exercise_type TEXT, " +
                "sets INTEGER, " +
                "reps INTEGER, " +
                "calories INTEGER)";
        db.execSQL(createTable);
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS exercise_data");
        onCreate(db);
    }
}
```

ExericiseActivity.java

```
//package com.example.thing3;
//
//import android.content.Intent;
//import android.os.Bundle;
//import android.view.View;
//import android.widget.Button;
//import androidx.appcompat.app.AppCompatActivity;
//
//public class ExerciseActivity extends AppCompatActivity {
//
//    @Override
//    protected void onCreate(Bundle savedInstanceState) {
//        super.onCreate(savedInstanceState);
//        setContentView(R.layout.activity_exercise);
//
//        Button bodyBuildingBtn = findViewById(R.id.body_building_btn);
//        Button cardioBtn = findViewById(R.id.cardio_btn);
//
//        bodyBuildingBtn.setOnClickListener(new View.OnClickListener() {
//            @Override
//            public void onClick(View v) {
//                Intent intent = new Intent(ExerciseActivity.this,
PushUpActivity.class);
//                startActivity(intent);
//            }
//        });
//
//        cardioBtn.setOnClickListener(new View.OnClickListener() {
//            @Override
//            public void onClick(View v) {
//                Intent intent = new Intent(ExerciseActivity.this,
CardioActivity.class);
//                startActivity(intent);
//            }
//        });
//    }
//}


package com.example.thing3;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.appcompat.app.AppCompatActivity;

public class ExerciseActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_exercise);

        Button bodybuildingButton = findViewById(R.id.bodybuildingButton);
        Button cardioButton = findViewById(R.id.cardioButton);

        bodybuildingButton.setOnClickListener(v -> {
            Intent intent = new Intent(ExerciseActivity.this, PushUpActivity.class);
            intent.putExtra("exercise_type", "Bodybuilding");
            startActivity(intent);
        });

        cardioButton.setOnClickListener(v -> {
            // Implement Cardio activity here
        });
    }
}
```

ErerciseAdapter.java

```
package com.example.thing3;

import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;

public class ExerciseAdapter extends
RecyclerView.Adapter<ExerciseAdapter.ExerciseViewHolder> {

    private List<ExerciseData> exerciseList;

    public ExerciseAdapter(List<ExerciseData> exerciseList) {
        this.exerciseList = exerciseList;
    }
```

```
    @NonNull
    @Override
    public ExerciseViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType)
{
        View view = LayoutInflater.from(parent.getContext())
                .inflate(R.layout.simple_list_item_4, parent, false); // Reference your
custom layout here
        return new ExerciseViewHolder(view);
    }



//    @Override
//    public void onBindViewHolder(@NonNull ExerciseViewHolder holder, int position) {
//        ExerciseData exerciseData = exerciseList.get(position);
//        holder.setsTextView.setText("Sets: " + exerciseData.getSets());
//        holder.repsTextView.setText("Reps: " + exerciseData.getReps());
//        holder.caloriesTextView.setText("Calories: " + exerciseData.getCalories());
//        holder.typeTextView.setText("Type: " + exerciseData.getExerciseType());
//    }
@Override
public void onBindViewHolder(@NonNull ExerciseViewHolder holder, int position) {
    ExerciseData exerciseData = exerciseList.get(position);

    // Ensure each TextView is not null before setting text
    if (holder.setsTextView != null) {
        holder.setsTextView.setText("Sets: " + exerciseData.getSets());
    } else {
        Log.e("ExerciseAdapter", "setsTextView is null");
    }

    if (holder.repsTextView != null) {
        holder.repsTextView.setText("Reps: " + exerciseData.getReps());
    } else {
        Log.e("ExerciseAdapter", "repsTextView is null");
    }

    if (holder.caloriesTextView != null) {
        holder.caloriesTextView.setText("Calories: " + exerciseData.getCalories());
    } else {
        Log.e("ExerciseAdapter", "caloriesTextView is null");
    }

    if (holder.typeTextView != null) {
        holder.typeTextView.setText("Type: " + exerciseData.getExerciseType());
    } else {
        Log.e("ExerciseAdapter", "typeTextView is null");
    }
}
```

```
    @Override
    public int getItemCount() {
        return exerciseList.size();
    }

    public static class ExerciseViewHolder extends RecyclerView.ViewHolder {
        TextView setsTextView, repsTextView, caloriesTextView, typeTextView;
        TextView text1, text2, text3, text4;

        public ExerciseViewHolder(@NonNull View itemView) {
            super(itemView);
            text1 = itemView.findViewById(R.id.text1); // Make sure these IDs match your
layout
            text2 = itemView.findViewById(R.id.text2);
            text3 = itemView.findViewById(R.id.text3);
            setsTextView = itemView.findViewById(android.R.id.text1);
            repsTextView = itemView.findViewById(android.R.id.text2);
            caloriesTextView = itemView.findViewById(android.R.id.text2);
            typeTextView = itemView.findViewById(android.R.id.text2);
        }
    }
}
```

ExerciseData.java

```
package com.example.thing3;

public class ExerciseData {
    private String exerciseType;
    private int sets;
    private int reps;
    private int calories;

    public ExerciseData(String exerciseType, int sets, int reps, int calories) {
        this.exerciseType = exerciseType;
        this.sets = sets;
        this.reps = reps;
        this.calories = calories;
    }

    public String getExerciseType() {
        return exerciseType;
    }
```

```
    public int getSets() {
        return sets;
    }

    public int getReps() {
        return reps;
    }

    public int getCalories() {
        return calories;
    }
}
```

ExerciseDBHelper.java

```
package com.example.thing3;

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

public class ExerciseDBHelper extends SQLiteOpenHelper {

    private static final String DATABASE_NAME = "exercise.db";
    private static final int DATABASE_VERSION = 1;

    private static final String TABLE_NAME = "exercise_data";
    private static final String COLUMN_ID = "id";
    private static final String COLUMN_SETS = "sets";
    private static final String COLUMN_REPS = "reps";
    private static final String COLUMN_DURATION = "duration";
    private static final String COLUMN_CALORIES = "calories";

    public ExerciseDBHelper(Context context) {
        super(context, DATABASE_NAME, null, DATABASE_VERSION);
    }
```

```
    @Override
    public void onCreate(SQLiteDatabase db) {
        String createTable = "CREATE TABLE " + TABLE_NAME + " (" +
                COLUMN_ID + " INTEGER PRIMARY KEY AUTOINCREMENT, " +
                COLUMN_SETS + " INTEGER, " +
                COLUMN_REPS + " INTEGER, " +
                COLUMN_DURATION + " INTEGER, " +
                COLUMN_CALORIES + " INTEGER)";
        db.execSQL(createTable);
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
        onCreate(db);
    }

    public boolean insertData(int sets, int reps, int duration, int calories) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put(COLUMN_SETS, sets);
        contentValues.put(COLUMN_REPS, reps);
        contentValues.put(COLUMN_DURATION, duration);
        contentValues.put(COLUMN_CALORIES, calories);

        long result = db.insert(TABLE_NAME, null, contentValues);
        return result != -1; // returns true if data is inserted, false otherwise
    }
}
```

PushUpActivity.java

```
//package com.example.thing3;
//
//import android.os.Bundle;
//import android.os.SystemClock;
//import android.view.View;
//import android.widget.Button;
//import android.widget.Chronometer;
//import android.widget.EditText;
//import android.widget.Toast;
//import androidx.appcompat.app.AppCompatActivity;
//
```

```
//
//public class PushUpActivity extends AppCompatActivity {
//
//    private Chronometer chronometer;
//    private int sets = 3;
//    private int reps = 10;
//    private int timeInSeconds = 60; // example time (can be based on user input)
//
//    @Override
//    protected void onCreate(Bundle savedInstanceState) {
//        super.onCreate(savedInstanceState);
//        setContentView(R.layout.activity_pushup);
//
//        chronometer = findViewById(R.id.timer);
//        Button startTimerBtn = findViewById(R.id.start_timer_btn);
//
//        startTimerBtn.setOnClickListener(new View.OnClickListener() {
//            @Override
//            public void onClick(View v) {
//                startTimer();
//            }
//        });
//    }
//
//    private void startTimer() {
//        String setsStr = ((EditText) findViewById(R.id.sets)).getText().toString();
//        String repsStr = ((EditText) findViewById(R.id.reps)).getText().toString();
//
//        if (setsStr.isEmpty() || repsStr.isEmpty()) {
//            Toast.makeText(this, "Please enter both sets and reps.",
Toast.LENGTH_SHORT).show();
//            return; // Exit the method early
//        }
//
//        sets = Integer.parseInt(setsStr);
//        reps = Integer.parseInt(repsStr);
//
//        chronometer.setBase(SystemClock.elapsedRealtime());
//        chronometer.start();
//
//        chronometer.setOnChronometerTickListener(new
Chronometer.OnChronometerTickListener() {
//            @Override
//            public void onChronometerTick(Chronometer chronometer) {
//                long elapsedMillis = SystemClock.elapsedRealtime() -
chronometer.getBase();
//                if (elapsedMillis >= timeInSeconds * 1000) { // stop after set time
//                    chronometer.stop();
//                    calculateCalories();
//                }
```

```
//            }
//        });
//    }
//
//
//    private void calculateCalories() {
//        int caloriesBurned = (sets * reps * timeInSeconds) / 100; // sample calculation
//        Toast.makeText(PushUpActivity.this, "Calories burned: " + caloriesBurned,
Toast.LENGTH_SHORT).show();
//        storeDataInSQLite(sets, reps, timeInSeconds, caloriesBurned);
////        storeDataInFirebase(sets, reps, timeInSeconds, caloriesBurned);
//    }
//
//    // SQLite storage method
//    private void storeDataInSQLite(int sets, int reps, int time, int calories) {
//        // Create an instance of the SQLite helper
//        ExerciseDBHelper dbHelper = new ExerciseDBHelper(this);
//        boolean isInserted = dbHelper.insertData(sets, reps, time, calories);  //
Insert data into SQLite
//
//        if (isInserted) {
//            Toast.makeText(this, "Data inserted into SQLite",
Toast.LENGTH_SHORT).show();
//        } else {
//            Toast.makeText(this, "Failed to insert data into SQLite",
Toast.LENGTH_SHORT).show();
//        }
//    }
//
//
//    // Firebase storage method
////    private void storeDataInFirebase(int sets, int reps, int time, int calories) {
////        FirebaseDatabase database = FirebaseDatabase.getInstance();
////        DatabaseReference myRef = database.getReference("exercises");
////
////        Map<String, Object> exerciseData = new HashMap<>();
////        exerciseData.put("sets", sets);
////        exerciseData.put("reps", reps);
////        exerciseData.put("time", time);
////        exerciseData.put("calories", calories);
////
////        myRef.push().setValue(exerciseData);
////    }
//}

package com.example.thing3;
import android.util.Log;

import android.database.sqlite.SQLiteDatabase;
```

```
import android.database.sqlite.SQLiteOpenHelper;
import android.os.Bundle;
import android.os.CountDownTimer;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

import java.util.ArrayList;
import java.util.List;

public class PushUpActivity extends AppCompatActivity {
    private EditText setsEditText, repsEditText;
    private TextView timerTextView, caloriesTextView;
    private Button startTimerButton;
    private CountDownTimer countDownTimer;
    private int sets, reps;

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

        setsEditText = findViewById(R.id.sets);
        repsEditText = findViewById(R.id.reps);
        timerTextView = findViewById(R.id.timer);
        caloriesTextView = findViewById(R.id.calories_burned);
        startTimerButton = findViewById(R.id.start_timer_btn);

        startTimerButton.setOnClickListener(v -> startTimer());
    }

    private void startTimer() {
        String setsStr = setsEditText.getText().toString();
        String repsStr = repsEditText.getText().toString();

        if (setsStr.isEmpty() || repsStr.isEmpty()) {
            Toast.makeText(this, "Please enter both sets and reps.",
Toast.LENGTH_SHORT).show();
            return;
        }
```

```
        sets = Integer.parseInt(setsStr);
        reps = Integer.parseInt(repsStr);
        int totalTime = sets * 30 * 1000; // 30 seconds per set

        countDownTimer = new CountDownTimer(totalTime, 1000) {
            @Override
            public void onTick(long millisUntilFinished) {
                timerTextView.setText("Seconds remaining: " + millisUntilFinished /
1000);
            }

            @Override
            public void onFinish() {
                timerTextView.setText("Timer finished!");
                calculateCalories();
            }
        }.start();
    }

    private void calculateCalories() {
        // Assume 1 calorie burned per push-up
        int totalCalories = sets * reps; // Remove the 0.5 multiplier to keep it as int
        caloriesTextView.setText("Calories Burned: " + totalCalories);
        Log.d("Work Done", "calorie counting done");
        storeData(sets, reps, totalCalories);
        Log.d("Database Insert", "Inserted: ");
        displayData();

    }

    private void storeData(int sets, int reps, int calories) {
        SQLiteOpenHelper dbHelper = new DatabaseHelper(this);
        SQLiteDatabase db = dbHelper.getWritableDatabase();
        // Insert data into your SQLite database
        String sql = "INSERT INTO exercise_data (exercise_type, sets, reps, calories)
VALUES ('Push-Ups', " + sets + ", " + reps + ", " + calories + ")";
        db.execSQL(sql);
        Log.d("Database Insert", "Inserted: " + sets + " sets, " + reps + " reps, " +
calories + " calories");
        db.close();
    }
    private void displayData() {
        SQLiteOpenHelper dbHelper = new DatabaseHelper(this);
        SQLiteDatabase db = dbHelper.getReadableDatabase();
        Cursor cursor = db.rawQuery("SELECT * FROM exercise_data", null);
        Log.d("Message", "done1");
```

```
        List<ExerciseData> exerciseList = new ArrayList<>();



        if (cursor.moveToFirst()) {
            do {
                // Get column indices safely
                int exerciseTypeIndex = cursor.getColumnIndex("exercise_type");
                int setsIndex = cursor.getColumnIndex("sets");
                int repsIndex = cursor.getColumnIndex("reps");
                int caloriesIndex = cursor.getColumnIndex("calories");

                // Check if column indices are valid
                if (exerciseTypeIndex == -1 || setsIndex == -1 || repsIndex == -1 ||
caloriesIndex == -1) {
                    Log.e("PushUpActivity", "One or more column indices are invalid");
                    continue; // Skip this row
                }

                String exerciseType = cursor.getString(exerciseTypeIndex);
                int sets = cursor.getInt(setsIndex);
                int reps = cursor.getInt(repsIndex);
                int calories = cursor.getInt(caloriesIndex);
                Log.d("Database Data", "Exercise: " + exerciseType + ", Sets: " + sets +
", Reps: " + reps + ", Calories: " + calories);

                exerciseList.add(new ExerciseData(exerciseType, sets, reps, calories));
            } while (cursor.moveToNext());
        }
        cursor.close();
        db.close();

//        // Set up RecyclerView
//        RecyclerView recyclerView = findViewById(R.id.recyclerView);
//        ExerciseAdapter adapter = new ExerciseAdapter(exerciseList);
//        recyclerView.setLayoutManager(new LinearLayoutManager(this));
//        recyclerView.setAdapter(adapter);
    }




}
```

Touchscreen.java

```java
package com.example.thing3;

import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.Path;
import android.util.AttributeSet;
import android.view.MotionEvent;
import android.view.View;

public class TouchScreen extends View {
    Paint paint = new Paint();  // Create a Paint object
    Path path = new Path();     // Create a Path object to draw

    public TouchScreen(Context context, AttributeSet attrs) {
        super(context, attrs);
        paint.setAntiAlias(true);  // Smooth edges of shapes
        paint.setColor(Color.RED);  // Set paint color
        paint.setStrokeJoin(Paint.Join.ROUND);  // Rounded edges at path joints
        paint.setStyle(Paint.Style.STROKE);  // Draw stroke, not filled shapes
        paint.setStrokeWidth(5f);  // Set stroke width to 5 pixels
    }

    @Override
    protected void onDraw(Canvas canvas) {
        super.onDraw(canvas);
        canvas.drawPath(path, paint);  // Draw the path with the paint
    }

    @Override
    public boolean onTouchEvent(MotionEvent event) {
        float x = event.getX();
        float y = event.getY();

        switch (event.getAction()) {
            case MotionEvent.ACTION_DOWN:
                path.moveTo(x, y);  // Move to the touch point
                return true;
```

```
            case MotionEvent.ACTION_MOVE:
                path.lineTo(x, y);  // Draw line to the next touch point
                break;

            case MotionEvent.ACTION_UP:
                break;

            default:
                return false;
        }

        invalidate();  // Redraw the view
        return true;
    }
}
```

Output screen