

Software for Mobile Devices

Class task and home task

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Section: BCS 6B

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Task set the recycler view dependency in gradle

Main Java

```
package com.example.feb27_task1;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

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

public class MainActivity extends AppCompatActivity {

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

        RecyclerView recyclerView=findViewById(R.id.recycle1);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));

        List<Student> studentList=new ArrayList<>();

        for (int i=1;i<=20;i++)
        {
            studentList.add(new Student("Name"+i,"Roll number"+i));
        }

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

Student file

```
package com.example.feb27_task1;

public class Student {

    private String name;
    private String rollNo;

    public Student(String _name,String _rollNo){

        this.name =_name;
        this.rollNo=_rollNo;
    }

    public String getName() {
        return name;
    }

    public String getRollNo() {
        return rollNo;
    }

}
```

Student adapter file

```
package com.example.feb27_task1;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;

import androidx.annotation.NonNull;
import androidx.cardview.widget.CardView;
import androidx.recyclerview.widget.RecyclerView;

import java.util.List;

public class Student_adapter extends
RecyclerView.Adapter<Student_adapter.ViewHolder> {

    private List<Student> studentsList;

    Student_adapter(List<Student> _list)
    {
```

```

        this.studentsList=_list;
    }

    @NonNull
    @Override
    public Student_adapter.ViewHolder onCreateViewHolder(@NonNull ViewGroup
parent, int viewType) {

        View view=
LayoutInflater.from(parent.getContext()).inflate(R.layout.item_card,parent,fa
lse);
        return new ViewHolder(view);
    }

    @Override
    public void onBindViewHolder(@NonNull Student_adapter.ViewHolder holder,
int position) {
        Student student=studentsList.get(position);
        holder.nameText.setText(student.getName());
        holder.rollText.setText(student.getRollNo());

    }

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

    public class ViewHolder extends RecyclerView.ViewHolder {

        TextView nameText,rollText;
        CardView cardView;
        public ViewHolder(@NonNull View itemView) {
            super(itemView);

            nameText= itemView.findViewById(R.id.textView);
            rollText= itemView.findViewById(R.id.textView2);
            cardView= itemView.findViewById(R.id.card2);

        }
    }
}

```

activity main xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"

```

```

tools:context=".MainActivity">

<androidx.recyclerview.widget.RecyclerView
    android:id="@+id/recycle1"
    android:layout_width="409dp"
    android:layout_height="729dp"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="1dp" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Item card java

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.cardview.widget.CardView
xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/card2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

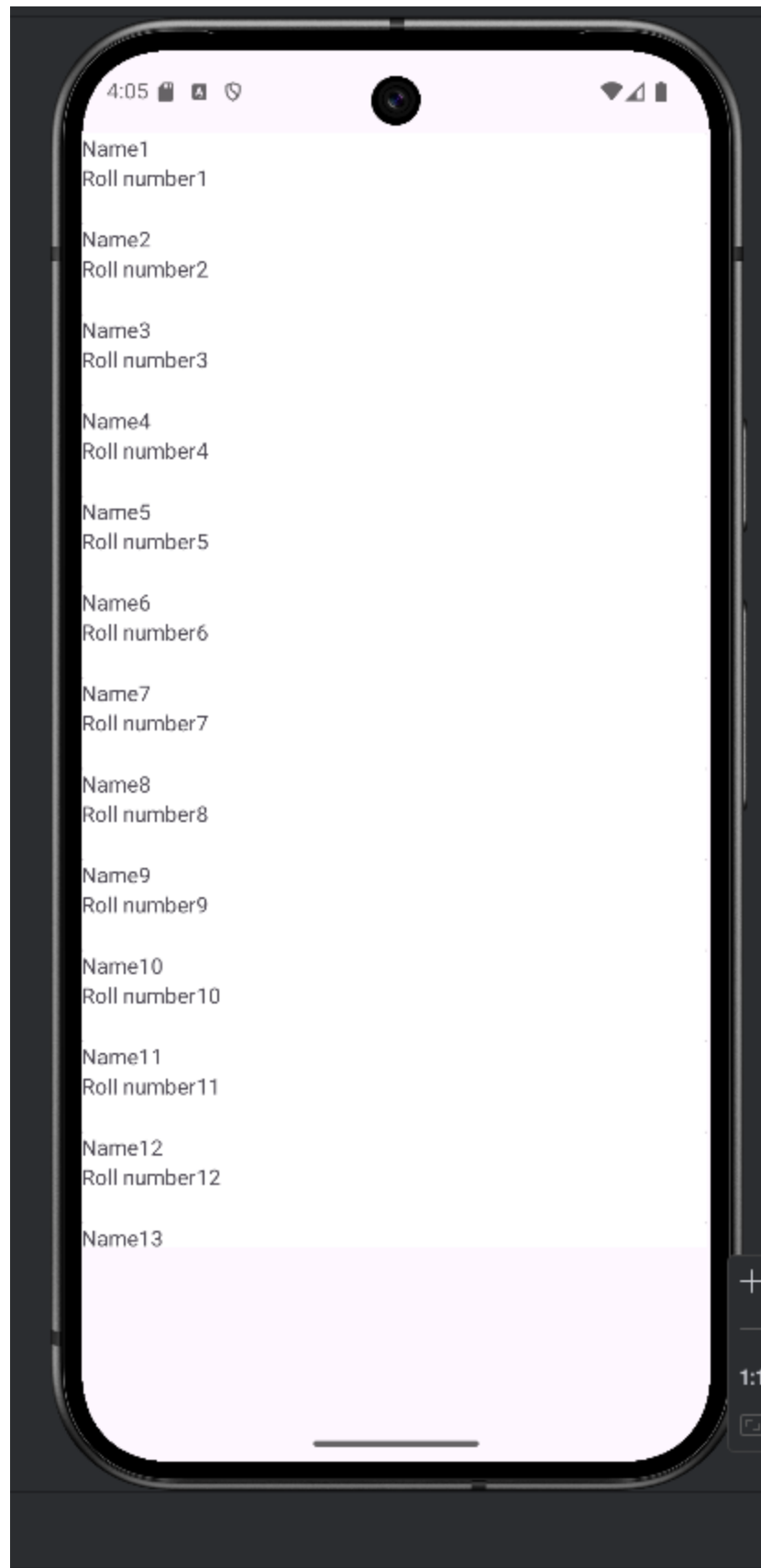
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">

        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="TextView" />

        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="40dp"
            android:text="TextView" />

    </LinearLayout>
</androidx.cardview.widget.CardView>

```



Task 2:

Main activity

```
package com.example.smd_feb27_task2;

import android.content.Context;
import android.media.MediaScannerConnection;
import android.os.Bundle;
import android.widget.TimePicker;
import android.widget.Toast;

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

import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.IOException;

public class MainActivity extends AppCompatActivity {

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

        String data="This is Simple file in internal Storage.";

        try {
            FileOutputStream fos=openFileOutput("myfile.text",
Context.MODE_PRIVATE);

            fos.write(data.getBytes());

            fos.close();

            Toast.makeText(this,"File write
complete",Toast.LENGTH_SHORT).show();

        }catch (FileNotFoundException e)
        {
            throw new RuntimeException(e);
        } catch (IOException e) {
            Toast.makeText(this,"Error writing
file",Toast.LENGTH_SHORT).show();
        }
    }
}
```

```
    }

    String filePath=getFilesDir().getPath()+"/myfile.txt";

    MediaScannerConnection.scanFile(this,new
String[]{filePath},null,((path, uri) -> Toast.makeText(this,"File
Scanned",Toast.LENGTH_SHORT).show()));
    }
}
```

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</> activity_main.xml

© MainActivity.java

☰ myfile.text x

1

This is Simple file in internal Storage.

Reader Mode

Device Explorer

Medium Phone API 35 Android 15.0 ("VanillalceCream")

FilesProcesses

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Name	Permissions	Date	Size
> 📁 com.android.virtualmachine.res	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.android.vpndialogs	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.android.wallpaper	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.android.wallpaper.livepicker	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.android.wallpaperbackup	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.android.wallpapercropper	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.example.feb27_task1	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.example.lec8	drwxrwx--x	2025-02-27 15:19	4 KB
✓ 📁 com.example.smd_feb27_task2	drwxrwx--x	2025-02-27 15:19	4 KB
✓ 📁 cache	drwxrws--x	2025-02-27 16:19	4 KB
> 📁 code_cache	drwxrws--x	2025-02-27 16:19	4 KB
✓ 📁 files	drwxrwx--x	2025-02-27 16:19	4 KB
☰ myfile.text	-rw-rw----	2025-02-27 16:19	40 B
☰ profileInstalled	-rw-----	2025-02-27 16:19	24 B
> 📁 com.example.task4	drwxrwx--x	2025-02-27 15:19	4 KB
> 📁 com.google.android.adservices.api	drwxrwx--x	2025-02-27 15:19	4 KB

task2 > files > ☰ myfile.text

1:1CRLFUTF-8🔍4 spaces🔒

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W

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4:22 PM

2/27/2025

Home task 1

Modified xml for image upload

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.cardview.widget.CardView xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/c1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

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

        <ImageView
            android:id="@+id/imageView2"

            android:layout_width="50dp"
            android:layout_height="50dp"
            android:layout_marginEnd="10dp"
            android:scaleType="centerCrop"
            app:srcCompat="@drawable/baseline_group_24" />

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="vertical">

            <TextView
                android:id="@+id/textView"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="Name"
                android:textStyle="bold" />

            <TextView
                android:id="@+id/textView2"
                android:layout_width="match_parent"
                android:layout_height="40dp"
                android:text="Roll Number" />

        </LinearLayout>

    </LinearLayout>

</CardView>
```

```
        </LinearLayout>
    </LinearLayout>
</androidx.cardview.widget.CardView>
```

Student adapter

```
package com.example.feb27_task1;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;

import androidx.annotation.NonNull;
import androidx.cardview.widget.CardView;
import androidx.recyclerview.widget.RecyclerView;

import java.util.List;

public class Student_adapter extends RecyclerView.Adapter<Student_adapter.ViewHolder> {

    private List<Student> stdList;

    // Constructor
    Student_adapter(List<Student> list) {
        this.stdList = list;
    }

    @NonNull
    @Override
    public Student_adapter.ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType)
    {
        View view = LayoutInflater.from(parent.getContext()).inflate(R.layout.item_card, parent, false);
        return new ViewHolder(view);
    }

    @Override
    public void onBindViewHolder(@NonNull Student_adapter.ViewHolder holder, int position) {
        Student student = stdList.get(position);
        holder.nameText.setText(student.getName());
    }
}
```

```

        holder.rollText.setText(student.getRollNo());
        holder.imageView.setImageResource(student.getImageResId()); // Set image
    }

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

    public class ViewHolder extends RecyclerView.ViewHolder {
        TextView nameText, rollText;
        ImageView imageView;
        CardView cardView;

        public ViewHolder(@NonNull View itemView) {
            super(itemView);
            nameText = itemView.findViewById(R.id.textView);
            rollText = itemView.findViewById(R.id.textView2);
            imageView = itemView.findViewById(R.id.imageView2); // Find ImageView
            cardView = itemView.findViewById(R.id.c1);
        }
    }
}

```

Student.java file

```

package com.example.feb27_task1;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;

import androidx.annotation.NonNull;
import androidx.cardview.widget.CardView;
import androidx.recyclerview.widget.RecyclerView;

import java.util.List;

public class Student_adapter extends RecyclerView.Adapter<Student_adapter.ViewHolder> {

    private List<Student> stdList;

```

```

// Constructor
Student_adapter(List<Student> list) {
    this.stdList = list;
}

@NonNull
@Override
public Student_adapter.ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType)
{
    View view = LayoutInflater.from(parent.getContext()).inflate(R.layout.item_card, parent, false);
    return new ViewHolder(view);
}

@Override
public void onBindViewHolder(@NonNull Student_adapter.ViewHolder holder, int position) {
    Student student = stdList.get(position);
    holder.nameText.setText(student.getName());
    holder.rollText.setText(student.getRollNo());
    holder.imageView.setImageResource(student.getImageResId()); // Set image
}

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

public class ViewHolder extends RecyclerView.ViewHolder {
    TextView nameText, rollText;
    ImageView imageView;
    CardView cardView;

    public ViewHolder(@NonNull View itemView) {
        super(itemView);
        nameText = itemView.findViewById(R.id.textView);
        rollText = itemView.findViewById(R.id.textView2);
        imageView = itemView.findViewById(R.id.imageView2); // Find ImageView
        cardView = itemView.findViewById(R.id.c1);
    }
}
}

```

Main activity file

```
package com.example.feb27_task1;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

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

public class MainActivity extends AppCompatActivity {

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

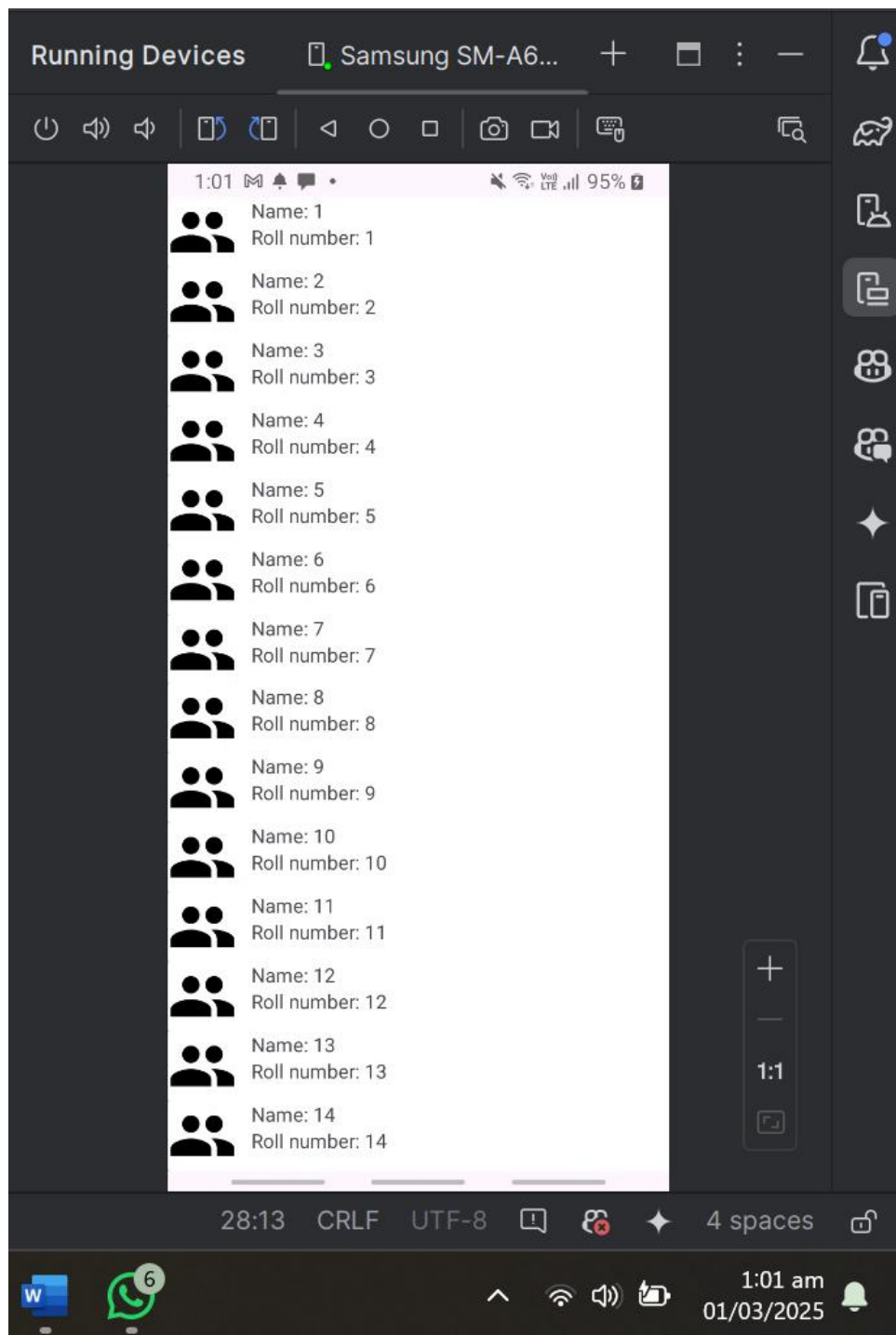
        RecyclerView recyclerView = findViewById(R.id.r1);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));

        List<Student> studentList = new ArrayList<>();

        // Adding students with images
        for (int i = 1; i <= 20; i++) {
            studentList.add(new Student("Name: " + i, "Roll number: " + i, R.drawable.baseline_group_24));
        }

        Student_adapter adapter = new Student_adapter(studentList);
        recyclerView.setAdapter(adapter);

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



Home task 2

Reading data from inputFile.txt

Creation of assets folder and creating inputText file

Input file name

```
package com.example.smd_feb27_task2;
```

```
import android.content.Context;
```

```
import java.io.InputStream;
```

```
import java.io.IOException;
```

```
public class FileReader {
```

```
    public static String readFileFromAssets(Context context, String fileName)
```

```
    {
```

```
        StringBuilder content = new StringBuilder();
```

```
        try {
```

```
            InputStream inputStream = context.getAssets().open("inputFile.txt");
```

```
            int size = inputStream.available();
```

```
            byte[] buffer = new byte[size];
```

```
            inputStream.read(buffer);
```

```
            inputStream.close();
```

```
            content.append(new String(buffer));
```

```
        } catch (IOException e) {
```

```
            e.printStackTrace();
```

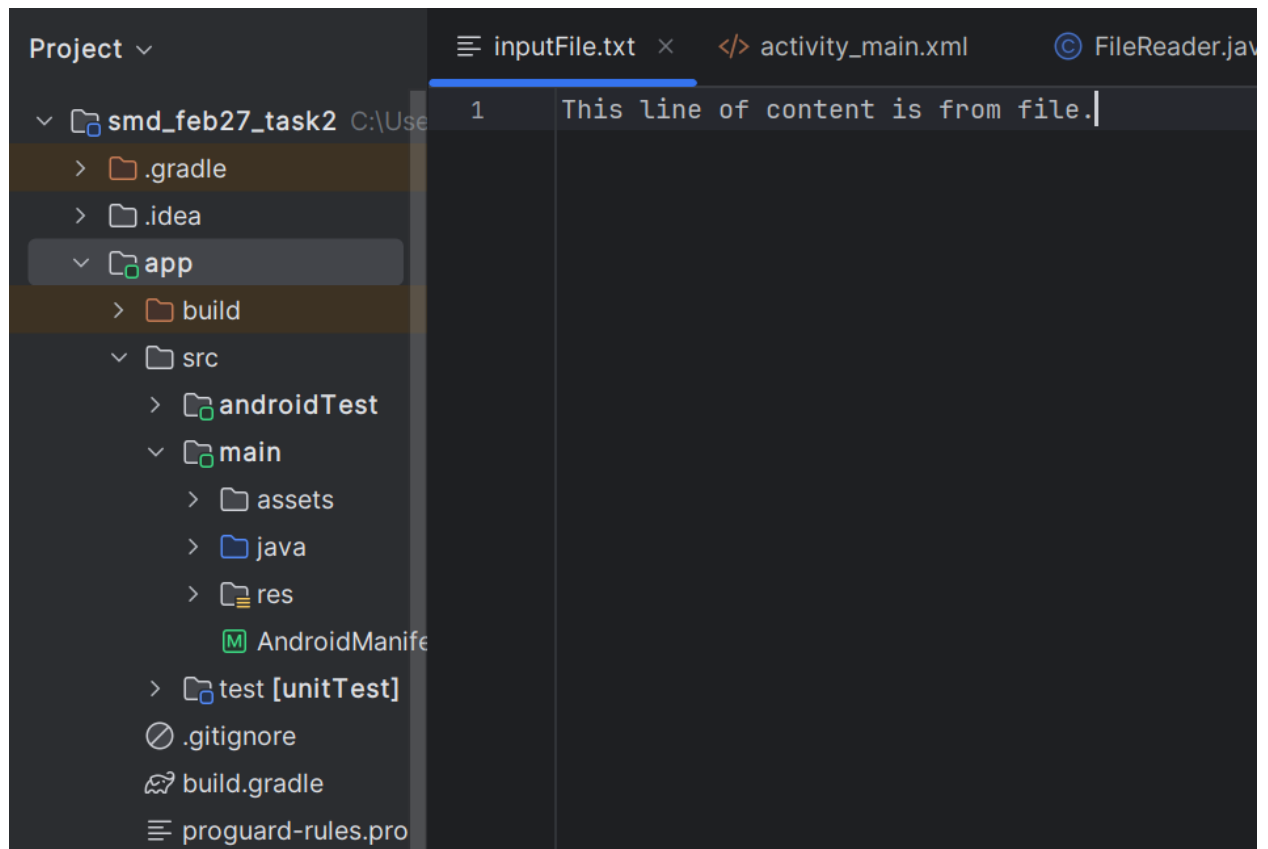
```
        }
```

```
        return content.toString();
```

```
    }
```

```
}
```

File path and content



With click of button content from file is written on screen

Device actual screenshot
content from file can be seen on screen

