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# MAD LAB 9

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BSCS\_VII\_A

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## Activity 1: Create an Expandable notification

### Layout Code

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

    <Button
        android:id="@+id/button"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="104dp"
        android:onClick="shownotification"
        android:text="Messenger"
        android:textColor="#100303"
        android:textSize="20sp"
        app:backgroundTint="#C1B9BB"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:layout_width="match_parent"
    android:layout_height="175dp"
    >
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    >

    <ImageView
        android:layout_width="30dp"
        android:layout_height="30dp"
        android:src="@drawable/im"
        android:layout_marginLeft="10dp"
        >

    </ImageView>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="    Messenger App"
    android:textSize="15sp"

    >

</TextView>
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginTop="20dp"
    >

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Friend Requests"
    android:layout_weight="2"
        android:textSize="30sp"
    android:textColor="@color/black"
    ></TextView>

<ImageView
    android:layout_width="50dp"
    android:layout_height="50dp"
    android:src="@drawable/on"
    android:layout_weight="1"
    >
```

```
></ImageView>
</LinearLayout>

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="1 out of 3 categories from this app"
    android:textSize="20sp"
    android:textColor="@color/black"
></TextView>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginTop="20dp"
    >
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="ALL CATEGORIES"
        android:textSize="20sp"
        android:layout_marginLeft="100dp"
        android:textColor="#3792cb"
        android:textStyle="bold"
        android:clickable="true"
    >

    </TextView>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="    DONE"
        android:textStyle="bold"
        android:textSize="20sp"
        android:clickable="true"
        android:textColor="#3792cb"

    >

    </TextView>
```

```
</LinearLayout>
</LinearLayout>
```

## Logic Code

```
package com.example.uinotification;

import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;
import androidx.core.app.NotificationManagerCompat;

import android.annotation.SuppressLint;
import android.app.Notification;
import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.app.StatusBarManager;
import android.content.Intent;
import android.os.Build;
import android.os.Bundle;
import android.service.notification.StatusBarNotification;
import android.util.Log;
import android.view.View;
import android.widget.RemoteViews;

public class MainActivity extends AppCompatActivity {

    private static final Object EXTRA_NOTIFICATION_ID =12 ;
    NotificationManagerCompat notificationManager;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        notificationManager= NotificationManagerCompat.from(this);
    }

    @RequiresApi(api = Build.VERSION_CODES.N)
    public void shownotification(View view) throws InterruptedException {

        Notification.Builder builder1=new Notification.Builder(this)
            .setSmallIcon(R.drawable.comment)
            .setContentTitle("Instant Message")
```

```

        .setContentText("Hey, what are you doing for lunch?")
        .setAutoCancel(true);

        NotificationManager manager=(NotificationManager)getSystemService(NOTIFIC
ATION_SERVICE);
        if(Build.VERSION.SDK_INT>=Build.VERSION_CODES.O)
        {
            @SuppressWarnings("WrongConstant") NotificationChannel channel=new Notifi
cationChannel("example","Android",NotificationManager.IMPORTANCE_DEFAULT);
            manager.createNotificationChannel(channel);
            builder1.setChannelId("example");

        }

        RemoteViews collapsed=new RemoteViews(getPackageName(),R.layout.notif
ication_custom);
        Notification.Builder builder=new Notification.Builder(this)
            .setSmallIcon(R.drawable.comment)
            .setContentTitle("Instant Message")
            .setCustomBigContentView(collapsed)

            .setAutoCancel(true);
        manager.notify(123,builder1.build());
        manager.notify(1234,builder.build());

    }
}

```

## Output



77% 11:26 PM

Messenger App

MESSENGER



11:26 PM



Messenger App

Instant Message

Hey, what are you doing for lunch?



Messenger App

## Friend Requests



1 out of 3 categories from this app

[ALL CATEGORIES](#) [DONE](#)



Google Play services • 18h

Account action required

daniyal.bcs18@iba-suk.edu.pk



Omacp • in 4y

Configuration message

Application: Browser, Access Point Name





## Activity 2: Create an SMS reader app

### Layout Code

```
<?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"
    tools:context=".MainActivity"
    android:orientation="horizontal"
    >

    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/list"
        >

    </ListView>

</LinearLayout>
```

### Logic Code

```
package com.example.message;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

import android.Manifest;
import android.content.pm.PackageManager;
import android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import android.provider.ContactsContract;
import android.telephony.SmsManager;
import android.widget.ListView;
import android.widget.SimpleAdapter;
import android.widget.Toast;

import java.util.ArrayList;
```

```

import java.util.HashMap;
import java.util.List;
import java.util.Map;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        List<Map<String,String>> data=new ArrayList<Map<String, String>>();
        SimpleAdapter adapter=new SimpleAdapter(this,data, android.R.layout.simple_expandable_list_item_2,
            new String[]{"title","subtitle"},new int[]{android.R.id.text1,android.R.id.text2}
        );

        ListView listView=findViewById(R.id.list);

        if(ActivityCompat.checkSelfPermission(this, Manifest.permission.READ_SMS)
        == PackageManager.PERMISSION_GRANTED){

            Cursor c=getContentResolver().query(Uri.parse("content://sms/inbox"),
            null,null,null,null);

            c.moveToFirst();
            while(c.moveToNext()){
                Map<String,String> d=new HashMap<String, String>(2);
                d.put("title",c.getString(c.getColumnIndex("address")));
                d.put("subtitle",c.getString(c.getColumnIndex("body")));
                data.add(d);
            }
            listView.setAdapter(adapter);

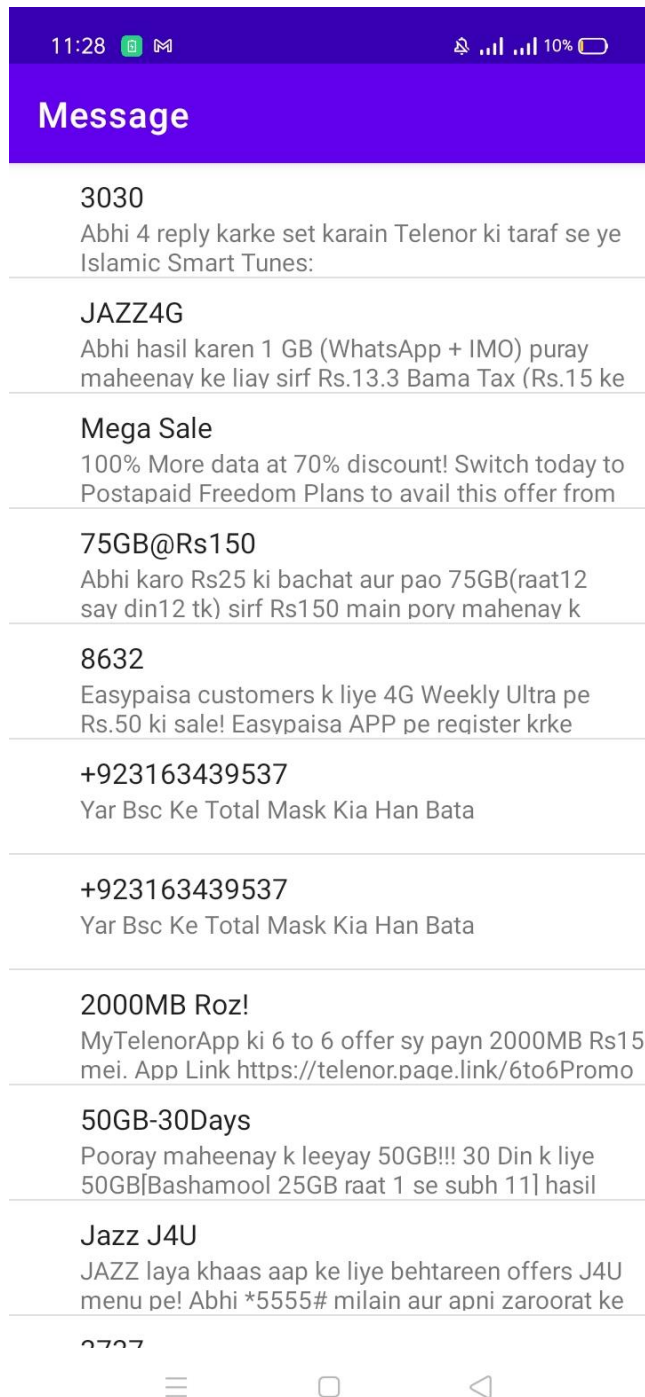
        }
        else{
            ActivityCompat.requestPermissions(this,new String[]{Manifest.permission.READ_SMS},123);

        }

    }
}

```

## Output



Activity 3: Create a user dictionary and make it available so that other applications can read and update the words in the dictionary.

### Layout Code

```
<?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"
    tools:context=".MainActivity">

    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/listview"
        />
</LinearLayout>
```

### Menu

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">
<item
    android:id="@+id/search"
    app:showAsAction="always"
    android:title="search"
    android:icon="@android:drawable/ic_menu_search"
    />
<item
    android:id="@+id/add"
    app:showAsAction="never"
    android:title="add"
    />

</menu>
```

### Logic Code

```
package com.example.dictionary;
```

```

import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.ContentValues;
import android.content.DialogInterface;
import android.database.Cursor;
import android.graphics.Color;
import android.net.Uri;
import android.os.Bundle;
import android.util.Log;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.Toast;

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

public class MainActivity extends AppCompatActivity {
    ListView view;
    ArrayAdapter<String> arrayAdapter;
    List<String> list;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // Retrieve student records
        String URL = "content://com.example.dictionary/login/" ;
        Uri dictionaryURI = Uri.parse ( URL );
        Cursor c = getContentResolver().query( dictionaryURI, null , null , null
, null );
        list=new ArrayList<String >();
        c.moveToFirst();

        do {
            list.add(0,c.getString (c.getColumnIndex ("name")));
        } while ( c.moveToNext ());
    }
}

```

```

        arrayAdapter=new ArrayAdapter<String>(this, android.R.layout.simple_list_
item_1,list);
        view=findViewById(R.id.listview);
        view.setAdapter(arrayAdapter);
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        switch (item.getItemId()){
            case R.id.search:
                getData("Enter a word to search");
                break;
            case R.id.add:
                getData("Insert word to dictionary");
                break;

        }

        return super.onOptionsItemSelected(item);
    }

    public void getData(String title){

        AlertDialog.Builder alert=new AlertDialog.Builder(this);
        alert.setTitle(title);
        EditText input=new EditText(this);
        alert.setView(input);

        alert.setPositiveButton("Ok", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                if(title.equals("Enter a word to search")){
                    searchword(input.getText().toString());

                }
                else
                    addword(input.getText().toString());

            }

        });
        alert.show();
    }

```

```

    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater inflater=getMenuInflater();
        inflater.inflate(R.menu.menu,menu);

        return true;
    }

    public void addword(String word){
        ContentValues values = new ContentValues();

        values.put ("name", word);
        Uri uri = getContentResolver (). insert (dict.CONTENT_URI , values );
        list.add(0,word);
        arrayAdapter=new ArrayAdapter<String>(this, android.R.layout.simple_list_
item_1,list);
        view.setAdapter(arrayAdapter);

    }

    public void searchword(String word){

        String URL = "content://com.example.dictionary/login/" ;
        Uri dictionaryURI = Uri.parse ( URL );
        Cursor c = getContentResolver().query( dictionaryURI, null , "name=?", n
ew String[]{word} , null );
        if(c.getCount()==0)
            return;

        c.moveToFirst();
        List<String> list2=new ArrayList<String>();
        do {
            list2.add(c.getString (c.getColumnIndex ("name")));

        } while ( c.moveToNext ());
        arrayAdapter=new ArrayAdapter<String>(this, android.R.layout.simple_list_
item_1,list2);
        view.setAdapter(arrayAdapter);

    }
}

```

## Content Provider

```
package com.example.dictionary;

import android.content.ContentProvider;
import android.content.ContentUris;
import android.content.ContentValues;
import android.content.Context;
import android.content.UriMatcher;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.net.Uri;
import android.util.Log;

public class dict extends ContentProvider {
    static final String PROVIDER_NAME = "com.example.dictionary" ;
    static final String URL = "content://" + PROVIDER_NAME + "/login/" ;
    static final Uri CONTENT_URI = Uri.parse (URL);

    DBHelper helper;
    SQLiteDatabase db;

    @Override
    public int delete(Uri uri, String selection, String[] selectionArgs) {
        // Implement this to handle requests to delete one or more rows.
        throw new UnsupportedOperationException("Not yet implemented");
    }

    @Override
    public String getType(Uri uri) {
        // TODO: Implement this to handle requests for the MIME type of the data
        // at the given URI.
        throw new UnsupportedOperationException("Not yet implemented");
    }

    @Override
    public Uri insert(Uri uri, ContentValues values) {
        long rowID = db.insert("login", "", values);

        if (rowID > 0) {
            Uri _uri = ContentUris.withAppendedId(CONTENT_URI, rowID);
            getContext().getContentResolver().notifyChange(_uri, null);
            return _uri;
        }
    }
}
```



```

        return null;
    }

    @Override
    public boolean onCreate() {
        helper=new DBHelper(getContext());
        db=helper.getWritableDatabase();
        return (db==null) ?false: true;
    }

    @Override
    public Cursor query(Uri uri, String[] projection, String selection,
                        String[] selectionArgs, String sortOrder) {
        db=helper.getReadableDatabase();
        Cursor c=db.query("login",projection,selection,selectionArgs,null,null,null);
    11);
        return c;
    }

    @Override
    public int update(Uri uri, ContentValues values, String selection,
                     String[] selectionArgs) {
        // TODO: Implement this to handle requests to update one or more rows.
        throw new UnsupportedOperationException("Not yet implemented");
    }
}

```

## SQLite Open Helper

```

package com.example.dictionary;

import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.util.Log;

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {

    public DBHelper(@Nullable Context context) {
        super(context, "dictionary", null, 1);
    }
}

```

```
}

@Override
public void onCreate(SQLiteDatabase db) {
    db.execSQL("CREATE TABLE login(name TEXT NOT NULL);");
}

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

}
```

## Output



77%

11:26 PM

# Dictionary



Enter a word to search

any

OK

aby

Any

anyway

1 2 3 4 5 6 7 8 9 0  
q w e r t y u i o p

a s d f g h j k l



z

x

c

v

b

n

m



?1☺

,



English (US)

.





77% 11:27 PM

# Dictionary



## Insert word to dictionary

Dani

OK

and

l

ggalib

1 2 3 4 5 6 7 8 9 0  
q w e r t y u i o p

a s d f g h j k l

↑ z x c v b n m ✕

? 1 ☺

,



English (US)

.





77% 11:27 PM

# Dictionary



Dani

---

Anson

---

now

---

devdco

---

woman

---

man

---

Android

---

any

---

hello world

---

hello world

---

hello world

---

