НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ УКРАЇНИ
“КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ ІМЕНІ ІГОРЯ СІКОРСЬКОГО”
Факультет інформатики та обчислювальної техніки
Кафедра обчислювальної техніки

Лабораторна робота №7

з дисципліни

“Програмування мобільних систем”

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Київ 2021

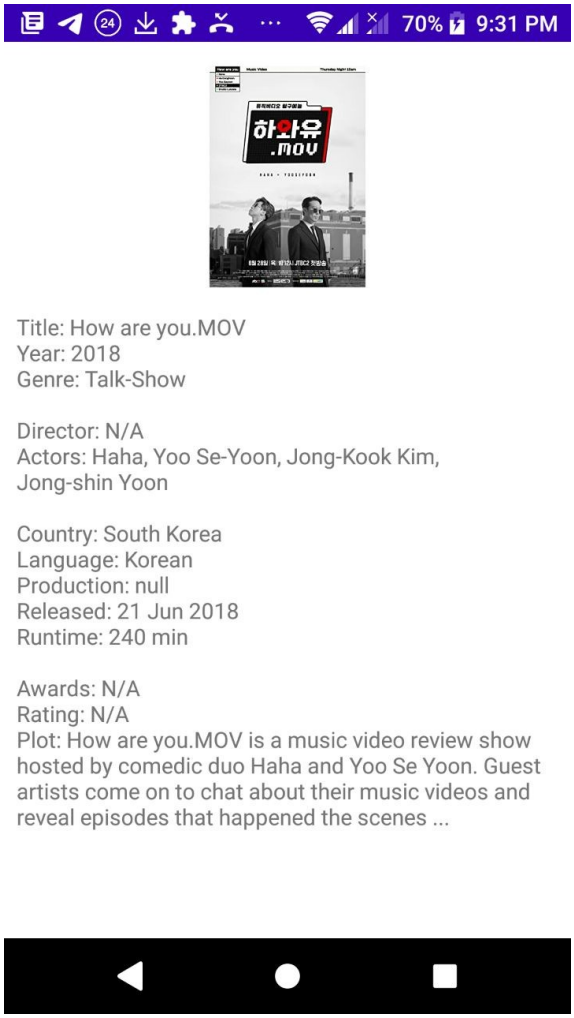
1. **Визначення варіанту:**

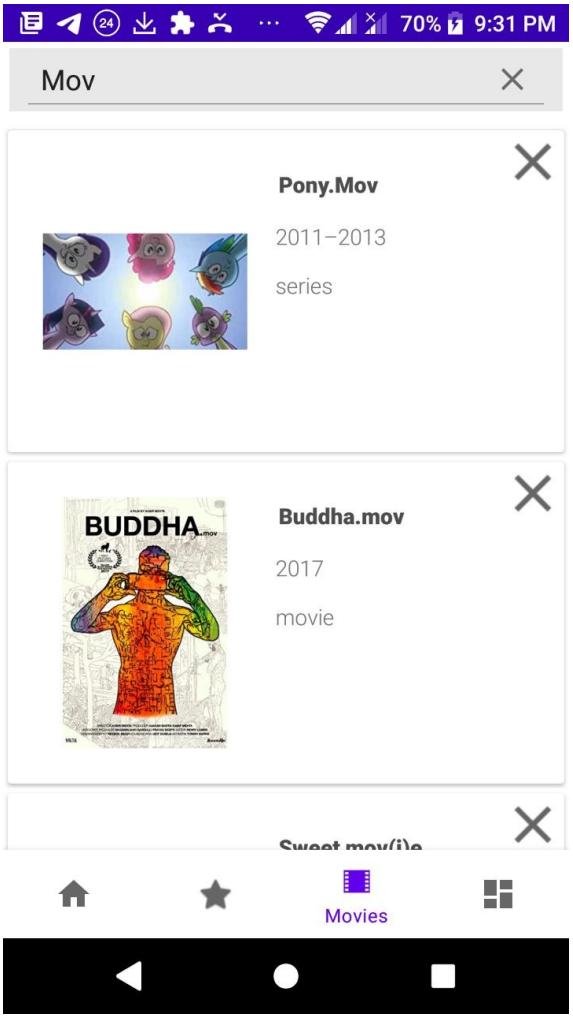
Я не мав доступу до Coredata

Посилання на репозиторій: https://github.com/KekemonBS/PMS/tree/main/LAB_8

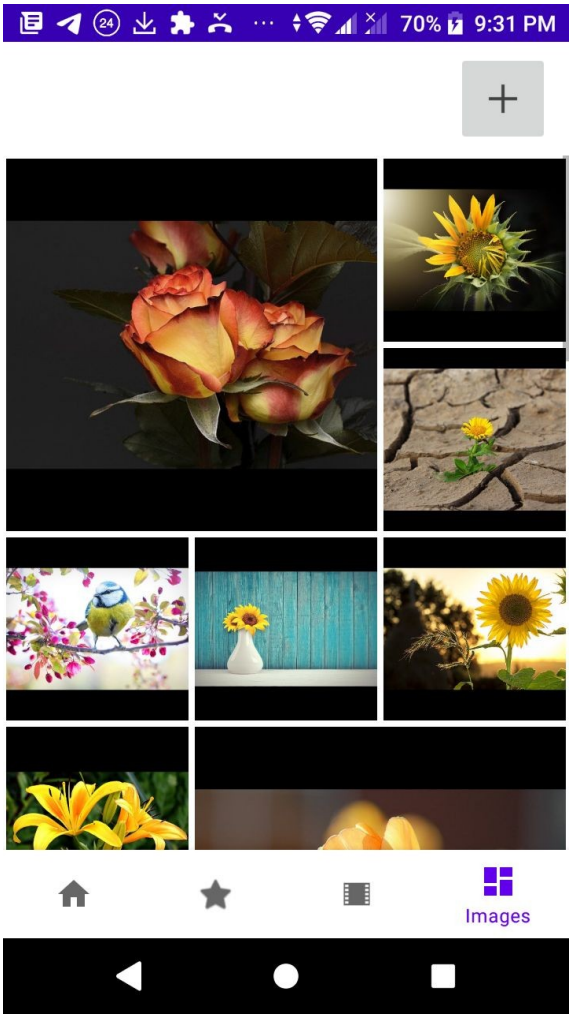
2. **Виконання:**

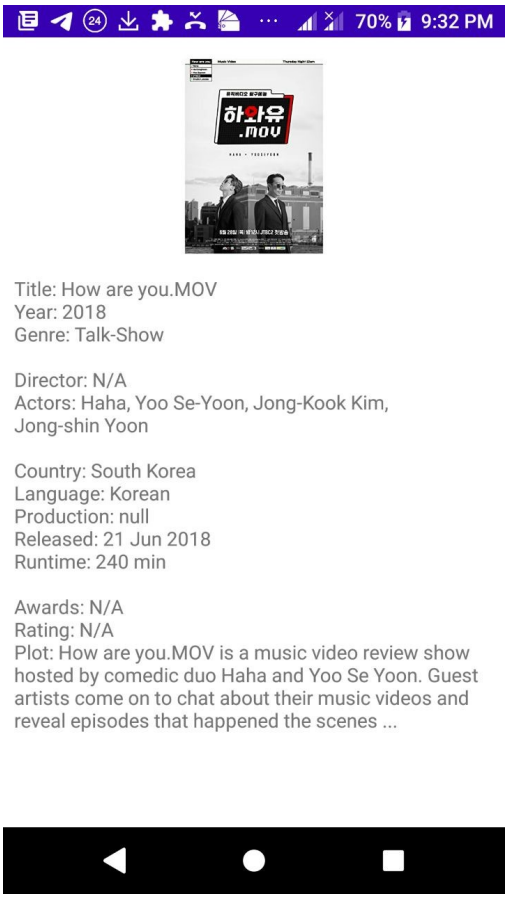
Скріншоти:

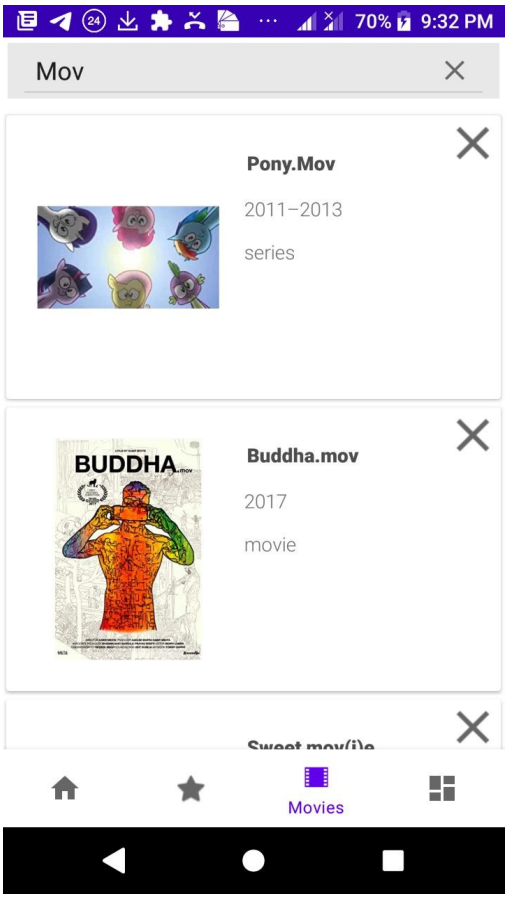


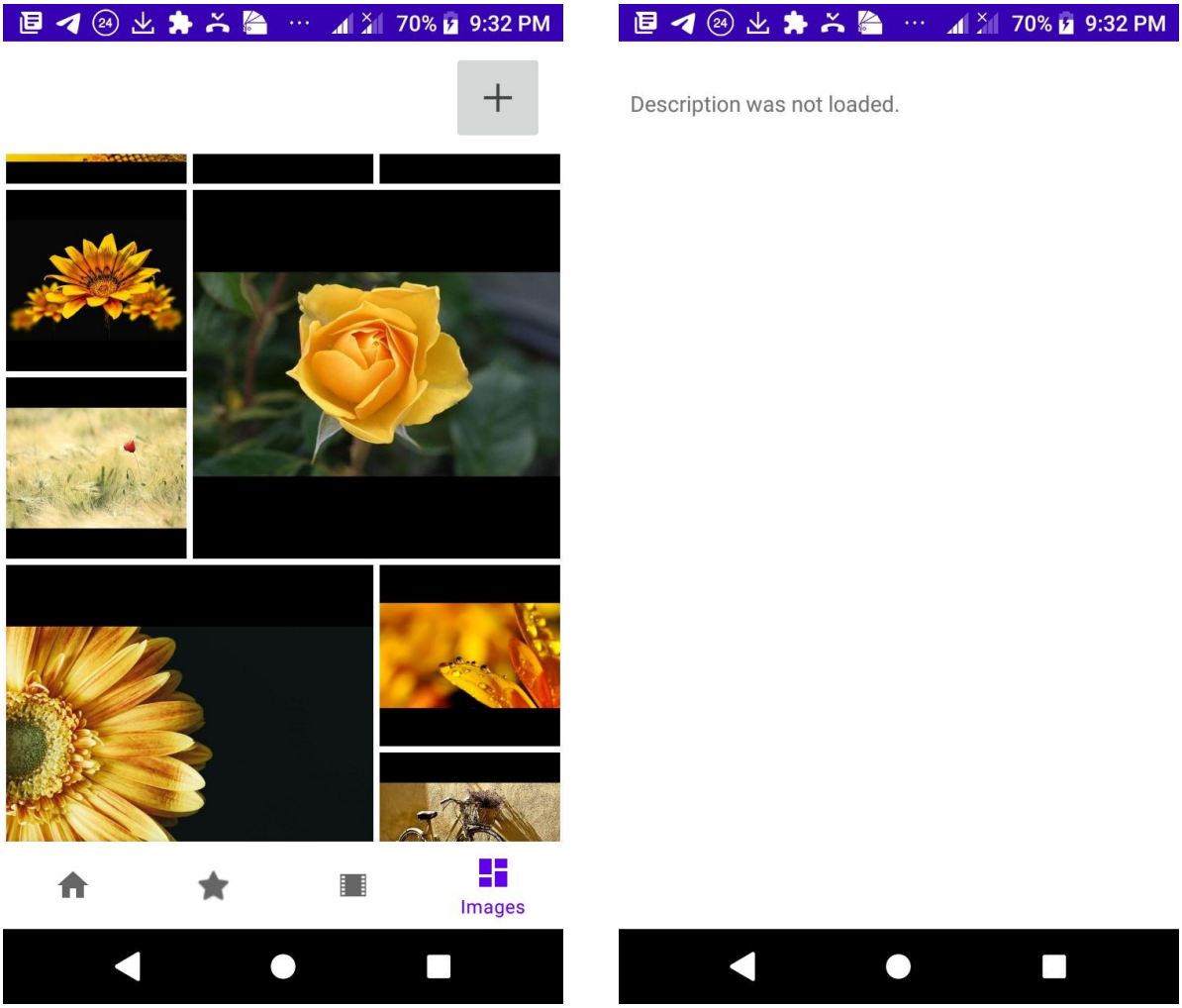



70% 9:32 PM
Star
No Internet
Movies


70% 9:31 PM
Images


70% 9:32 PM
Title: How are you.MOV
Year: 2018
Genre: Talk-Show
Director: N/A
Actors: Haha, Yoo Se-Yoon, Jong-Kook Kim, Jong-shin Yoon
Country: South Korea
Language: Korean
Production: null
Released: 21 Jun 2018
Runtime: 240 min
Awards: N/A
Rating: N/A
Plot: How are you.MOV is a music video review show hosted by comedic duo Haha and Yoo Se Yoon. Guest artists come on to chat about their music videos and reveal episodes that happened the scenes ...


70% 9:32 PM
Mov
Pony.Mov
2011–2013
series
Buddha.mov
2017
movie
Movies



3. **Лістинг коду (основні що були створені/ змінені):**

---GalleryAdapter.java---

```
package ua.kpi.comsys.iv8106.adapters;

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

import androidx.annotation.NonNull;
import androidx.fragment.app.Fragment;
import androidx.recyclerview.widget.RecyclerView;

import com.squareup.picasso.Callback;
import com.squareup.picasso.Picasso;

import java.util.ArrayList;

import ua.kpi.comsys.iv8106.R;
```

```
import ua.kpi.comsys.iv8106.model.ImageItem;

public class GalleryAdapter extends
RecyclerView.Adapter<GalleryAdapter.GalleryViewHolder> {

    private final Fragment             fragment;
    private final ArrayList<ImageItem> images;

    public GalleryAdapter(Fragment fragment, ArrayList<ImageItem>
images) {
        this.fragment = fragment;
        this.images = images;
    }

    public class GalleryViewHolder extends RecyclerView.ViewHolder
{

        private ImageView iw;
        private ProgressBar spinnerImg;

        public GalleryViewHolder(@NonNull View itemView) {
            super(itemView);
            this.iw = (ImageView)
itemView.findViewById(R.id.image);
            this.spinnerImg =
(ProgressBar)itemView.findViewById(R.id.progressBarImg);

        }
    }

    @NonNull
    @Override
    public GalleryAdapter.GalleryViewHolder
onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        LayoutInflater inflater =
LayoutInflater.from(parent.getContext());
        View view = inflater.inflate(R.layout.image, parent,
false);
        return new GalleryAdapter.GalleryViewHolder(view);
    }
//-----------------------------------------------------------------
-----------------------------------------
    @Override
    public void onBindViewHolder(@NonNull
GalleryAdapter.GalleryViewHolder holder, int position) {
        //holder.itemView.getLayoutParams().height = 650;
        //holder.iw.setImageURI(images.get(position));

        holder.spinnerImg.setVisibility(ProgressBar.VISIBLE);
```

```
        if (images.get(position).getBitmap() == null) {
            Picasso.get()

.load(images.get(position).getWebformatURL())/*.placeholder()*/
                    .into(holder.iw, new Callback() {
                        @Override
                        public void onSuccess() {

holder.spinnerImg.setVisibility(ProgressBar.INVISIBLE);
                        }

                        @Override
                        public void onError(Exception e) {

                        }
                    });
        } else {

holder.iw.setImageBitmap(images.get(position).getBitmap());

holder.spinnerImg.setVisibility(ProgressBar.INVISIBLE);
        }

    }
//-----------------------------------------------------------------
-----------------------------------------
    @Override
    public int getItemCount() {
        return images.size();
    }

}
```

---MoviesAdapter.java---

```
package ua.kpi.comsys.iv8106.adapters;

import android.content.Intent;
import android.view.LayoutInflater;
import android.view.MotionEvent;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.fragment.app.Fragment;
import androidx.recyclerview.widget.RecyclerView;
```

```
import com.squareup.picasso.Picasso;

import java.util.ArrayList;

import ua.kpi.comsys.iv8106.R;
import ua.kpi.comsys.iv8106.model.MovieItem;
import
ua.kpi.comsys.iv8106.secondary_activities.MovieDetailsActivity;

public class MoviesAdapter extends
RecyclerView.Adapter<MoviesAdapter.MovieViewHolder> {
    private final Fragment context;
    private final ArrayList<MovieItem> movies;
    private final ArrayList<String> maintitle;

    public MoviesAdapter(Fragment context, ArrayList<MovieItem>
movies, ArrayList<String> maintitle) {
        this.context=context;
        this.movies=movies;
        this.maintitle = maintitle;
    }

    public class MovieViewHolder extends RecyclerView.ViewHolder {

        private ImageView image;
        private TextView titleText;
        private TextView yearText;
        private TextView typeText;

        private ImageView deleteButton;

        public MovieViewHolder(View view) {
            super(view);
            // Define click listener for the ViewHolder's View

            this.image     = (ImageView)
view.findViewById(R.id.image);
            this.titleText = (TextView)
view.findViewById(R.id.title);
            this.yearText  = (TextView)
view.findViewById(R.id.year);
            this.typeText  = (TextView)
view.findViewById(R.id.type);

            this.deleteButton = (ImageView)
view.findViewById(R.id.deleteButton);

        }
```

```
    }

    // Create new views (invoked by the layout manager)
    @Override
    public MovieViewHolder onCreateViewHolder(ViewGroup parent,
int viewType) {
        // Create a new view, which defines the UI of the list
item
        LayoutInflater inflater =
LayoutInflater.from(parent.getContext());
        View view = inflater.inflate(R.layout.movie, parent,
false);

        return new MovieViewHolder(view);
    }


    @Override
    public void onBindViewHolder(@NonNull MovieViewHolder holder,
int position) {
//        int drawableResourceId =
context.getResources().getIdentifier(
//
movies.get(position).getPoster().toLowerCase().replace(".jpg",
""),
//                "drawable",
context.getContext().getPackageName());

Picasso.get().load(movies.get(position).getPoster()).into(holder.i
mage);

        if (!movies.get(position).isVisible()) {
            holder.itemView.setVisibility(View.INVISIBLE);
            holder.itemView.getLayoutParams().height = 0;
        } else {
            holder.itemView.setVisibility(View.VISIBLE);
            //holder.itemView.getLayoutParams().height = 650;
        }

        holder.titleText.setText(maintitle.get(position));
        holder.yearText.setText(movies.get(position).getYear());
        holder.typeText.setText(movies.get(position).getType());

//        if (drawableResourceId != 0) {
//            holder.image.setImageResource(drawableResourceId);
//        } else {
```

```
//
holder.image.setImageResource(R.drawable.ic_action_cancel);
//        }

        holder.deleteButton.setOnTouchListener(new
View.OnTouchListener() {
            @Override
            public boolean onTouch(View v, MotionEvent event) {
                removeItem(holder.getAdapterPosition());
                return true;
            }
        });

        holder.itemView.setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(context.getContext(),
MovieDetailsActivity.class);
                if ((!
movies.get(position).getImdbId().equals(null)) &&
                    (!
movies.get(position).getImdbId().equals("noid"))) {
                    intent.putExtra("id",
movies.get(position).getImdbId());
                    context.startActivity(intent);
                } else {

System.out.println(movies.get(position).getImdbId());
                    Toast toast =
Toast.makeText(context.getContext(), "No ID", Toast.LENGTH_SHORT);
                    toast.show();
                }
            }
        });
    }

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

    public void removeItem(int position) {
        if (position == -1)
            return;
        this.movies.remove(position);
        this.maintitle.remove(position);
        notifyDataSetChanged();
```

```
    }
}
```

---GalleryFragment.java---

```
package ua.kpi.comsys.iv8106.ui.gallery;

import android.app.Activity;
import android.content.ContentValues;
import android.content.Intent;
import android.graphics.Bitmap;
import android.net.Uri;
import android.os.Bundle;
import android.provider.MediaStore;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageButton;
import android.widget.ProgressBar;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import androidx.recyclerview.widget.RecyclerView;

import com.arasthel.spannedgridlayoutmanager.SpanSize;
import
com.arasthel.spannedgridlayoutmanager.SpannedGridLayoutManager;
import com.google.gson.Gson;
import com.google.gson.JsonObject;
import com.google.gson.reflect.TypeToken;

import java.io.IOException;
import java.lang.reflect.Type;
import java.util.ArrayList;
import java.util.LinkedList;
import java.util.Queue;

import kotlin.jvm.functions.Function1;
import ua.kpi.comsys.iv8106.R;
import ua.kpi.comsys.iv8106.adapters.GalleryAdapter;
import ua.kpi.comsys.iv8106.model.ImageItem;
import ua.kpi.comsys.iv8106.tools.Requester;
import ua.kpi.comsys.iv8106.tools.database.Databaser;

public class GalleryFragment extends Fragment {

    private int RESULT_LOAD_IMG = 1;
    private static String response;
```

```
    //public ArrayList<Bitmap> images = new ArrayList<>();
    Type listOfImagesItemsType = new
TypeToken<ArrayList<ImageItem>>() {}.getType();
    ArrayList<ImageItem> images   = new ArrayList<>();


    public GalleryAdapter adapter_gallery = new
GalleryAdapter(this, images);
    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater,
                             @Nullable ViewGroup container,
                             @Nullable Bundle savedInstanceState)
{

        this.setRetainInstance(true);

        View view = inflater.inflate(R.layout.fragment_gallery,
container, false);
        RecyclerView recycle =
view.findViewById(R.id.galleryRecyclerView);
        recycle.setNestedScrollingEnabled(false);

        SpannedGridLayoutManager spannedGridLayoutManager = new
SpannedGridLayoutManager(
              SpannedGridLayoutManager.Orientation.VERTICAL, 3);
        spannedGridLayoutManager.setItemOrderIsStable(false);

        spannedGridLayoutManager.setSpanSizeLookup(new
SpannedGridLayoutManager.SpanSizeLookup(new Function1<Integer,
SpanSize>(){
            @Override public SpanSize invoke(Integer position) {
                if (position % 9 == 0) {
                    return new SpanSize(2, 2);
                } else if ((position - 7)  % 9 == 0) {
                    return new SpanSize(2, 2);
                } else {
                    return new SpanSize(1, 1);
                }
            }
        }));

        ImageButton addButton =
view.findViewById(R.id.moreImageButton);
        ProgressBar spinner =
(ProgressBar)view.findViewById(R.id.progressBar);
        spinner.setVisibility(ProgressBar.VISIBLE);
```

```
        recycle.setLayoutManager(spannedGridLayoutManager);
        recycle.setAdapter(adapter_gallery);


        //-------------------------------------------------------
-------------------------
        //Perform request in separate thread
        new Thread(new Runnable() {
            @Override
            public void run() {
                Databaser db = new Databaser(getContext(),
"lists", null, 1);
                String request = "yellow+flowers";
                if (db.queryTable("imageList", request,  "query")
== null) {
                    String formattedUrlString =
"https://pixabay.com/api/?key=%s&q=%s&image_type=photo&per_page=
%s";
                    String apiKey = "19193969-
87191e5db266905fe8936d565";
                    String count = "27";
                    Queue<String> queue = new LinkedList<>();
                    Requester req = new Requester(queue,
formattedUrlString, apiKey, request, count);
                    Thread th1 = new Thread(req, "images");
                    th1.start();
                    try {
                        th1.join();
                        setJSONResponse(queue.remove());
                    } catch (InterruptedException e) {
                        e.printStackTrace();
                    }
                    System.out.println(response);

                    if (response != null) {
                        //-------------------------
                        ContentValues row = new ContentValues();
                        row.put("query", request);
                        row.put("json", response);
                        db.apppendToTable("imageList", request,
"query", row);
                        //-------------------------
                    }
                } else {
                    response = db.queryTable("imageList", request,
"query");
                }
                updateImagesList(response);
```

```
                spinner.setVisibility(ProgressBar.INVISIBLE);
            }
        }).start();
        //-------------------------------------------------------
-------------------------

        addButton.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
                Intent photoPickerIntent = new
Intent(Intent.ACTION_PICK);
                photoPickerIntent.setType("image/*");
                startActivityForResult(photoPickerIntent,
RESULT_LOAD_IMG);
            }
        });

        System.out.println("HERE1");

        return view;
    }

    private void updateImagesList(String response) {
        Gson gson = new Gson();
        if (response != null &&
                gson.fromJson(response,
JsonObject.class).has("hits")) {
            JsonObject gsontmp = gson.fromJson(response,
JsonObject.class);
            images.clear();
            images.addAll(gson.fromJson(gsontmp.get("hits"),
listOfImagesItemsType));
        } else {
            images.clear();
        }
        //Notify that data changed
        getActivity().runOnUiThread(new Runnable() {
            @Override
            public void run() {
                adapter_gallery.notifyDataSetChanged();
            }
        });
    }

    public static void setJSONResponse(String JSON) {
        response = JSON;
    }
```

```
    @Override
    public void onActivityResult(int requestCode, int resultCode,
Intent picker) {
        super.onActivityResult(requestCode, resultCode, picker);
        if (requestCode == 1) {
            if (resultCode == Activity.RESULT_OK) {
                Uri uri = picker.getData();
                Bitmap selectedImage = null;
                try {
                    selectedImage =
MediaStore.Images.Media.getBitmap(
                            getContext().getContentResolver(),
uri);
                } catch (IOException e) {
                    e.printStackTrace();
                }
                Bitmap scaled =
selectedImage.createScaledBitmap(selectedImage,

(int)Math.ceil(selectedImage.getWidth()/2),
(int)Math.ceil(selectedImage.getHeight()/2), false);
                ImageItem selectedimageItem = new ImageItem();
                selectedimageItem.setBitmap(scaled);
                images.add(selectedimageItem);
                //Add to cache
----------------------------------------------------------------
--
                adapter_gallery.notifyDataSetChanged();
            }
        }
    }
}
```

---MoviesFragment.java---

```
package ua.kpi.comsys.iv8106.ui.movies;

import android.app.Activity;
import android.content.ContentValues;
import android.content.Intent;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ProgressBar;
import android.widget.SearchView;
import android.widget.TextView;
import android.widget.Toast;
```

```
import androidx.annotation.NonNull;
import androidx.fragment.app.Fragment;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

import com.google.gson.Gson;
import com.google.gson.JsonObject;
import com.google.gson.reflect.TypeToken;

import java.lang.reflect.Type;
import java.util.ArrayList;
import java.util.LinkedList;
import java.util.Queue;

import ua.kpi.comsys.iv8106.R;
import ua.kpi.comsys.iv8106.adapters.MoviesAdapter;
import ua.kpi.comsys.iv8106.model.MovieItem;
import ua.kpi.comsys.iv8106.tools.Requester;
import ua.kpi.comsys.iv8106.tools.database.Databaser;

public class MoviesFragment extends Fragment {

    private static String response;
    //    private static final int REQUEST_READ_EXTERNAL_STORAGE =
1;
    View root;

    Type listOfMoviesItemsType = new
TypeToken<ArrayList<MovieItem>>() {}.getType();
    ArrayList<MovieItem> movie_list = new ArrayList<>();
    ArrayList<String> main_title = new ArrayList<>();


    public View onCreateView(@NonNull LayoutInflater inflater,
                             ViewGroup container, Bundle
savedInstanceState) {
        this.setRetainInstance(true);

        root = inflater.inflate(R.layout.fragment_movies,
container, false);

//        int rCheck =
ContextCompat.checkSelfPermission(getActivity(),
Manifest.permission.READ_EXTERNAL_STORAGE);
//        if (rCheck != PackageManager.PERMISSION_GRANTED) {
//            ActivityCompat.requestPermissions(getActivity(),
//                    new String[]
{Manifest.permission.READ_EXTERNAL_STORAGE},
REQUEST_READ_EXTERNAL_STORAGE);
```

```
//
//        }

        TextView nothingFound =
root.findViewById(R.id.nothingFound);
        nothingFound.setVisibility(View.VISIBLE);

        nothingFound.setVisibility(View.INVISIBLE);

        RecyclerView list =
root.findViewById(R.id.noMoviesMessage);
        MoviesAdapter adapter_movie = new MoviesAdapter(this,
this.movie_list, this.main_title);
        list.setAdapter(adapter_movie);
        list.setLayoutManager(new
LinearLayoutManager(getActivity()));

        ProgressBar spinner =
(ProgressBar)root.findViewById(R.id.progressBarMov);
        spinner.setVisibility(ProgressBar.INVISIBLE);

        SearchView searchBar = (SearchView)
root.findViewById(R.id.searchBar);
        searchBar.setOnQueryTextListener(new
SearchView.OnQueryTextListener() {

            @Override
            public boolean onQueryTextSubmit(String query) {

                spinner.setVisibility(ProgressBar.VISIBLE);
                new Thread(new Runnable() {
                @Override
                public void run() {
                    Databaser db = new Databaser(getContext(),
"lists", null, 1);
                    if ((query.length() >= 3) &&
                            (db.queryTable("movieList", query,
"query")  == null)) {
                        String formattedUrlString =
"http://www.omdbapi.com/?apikey=%s&s=%s&page=1";
                        String apiKey = "7e9fe69e";
                        Queue<String> queue = new LinkedList<>();
                        Requester req = new Requester(queue,
formattedUrlString, apiKey, query);
                        Thread th1 = new Thread(req, "movies");
                        th1.start();
                        try {
                            th1.join();
                            setJSONResponse(queue.remove());
```

```
                        } catch (InterruptedException e) {
                            e.printStackTrace();
                        }
                        if (response != null) {
                            //-------------------------
                            ContentValues row = new
ContentValues();
                            row.put("query", query);
                            row.put("json", response);
                            db.apppendToTable("movieList", query,
"query", row);
                            //-------------------------
                        } else {
                            getActivity().runOnUiThread(new
Runnable() {
                                @Override
                                public void run() {
                                    Toast toast =
Toast.makeText(getActivity(), "No Internet", Toast.LENGTH_SHORT);
                                    toast.show();
                                }
                            });
                        }
                        System.out.println(response);
                    } else if (db.queryTable("movieList", query,
"query") != null) {
                        response = db.queryTable("movieList",
query,  "query");
                    } else {
                        movie_list.clear();
                        main_title.clear();
                        response = null;
                    }
                    spinner.setVisibility(ProgressBar.INVISIBLE);
                    updateMovieList(response);

                    getActivity().runOnUiThread(new Runnable() {
                        @Override
                        public void run() {
                            if (query.length() < 3)

nothingFound.setVisibility(View.VISIBLE);
                            if (response != null && !
response.contains("Error")) {

nothingFound.setVisibility(View.INVISIBLE);
                            } else {
```

```
nothingFound.setVisibility(View.VISIBLE);
                            }
                            adapter_movie.notifyDataSetChanged();
                        }
                    });
                }
            }).start();

//                System.out.println(main_title);
                return false;
            }

            @Override
            public boolean onQueryTextChange(String newText) {
                return true;
            }

            private void updateMovieList(String response) {
                Gson gson = new Gson();
                if (response != null &&
                    !gson.fromJson(response,
JsonObject.class).has("Error")) {
                    JsonObject gsontmp = gson.fromJson(response,
JsonObject.class);
                    movie_list.clear();

movie_list.addAll(gson.fromJson(gsontmp.get("Search"),
listOfMoviesItemsType));
                    System.out.println(movie_list.hashCode());

                    main_title.clear();
                    for (MovieItem movie : movie_list) {
                        main_title.add(movie.getTitle());
                    }
                } else {
                    movie_list.clear();
                    main_title.clear();
                }
            }
        });

//--------This Activity is still present if needed--------
//        Button addMovieButton = (Button)
root.findViewById(R.id.addItem);
//        addMovieButton.setOnClickListener(new
View.OnClickListener() {
//            @Override
//            public void onClick(View v) {
```

```
//                Intent intent = new Intent(getActivity(),
AddMovieActivity.class);
//                startActivityForResult(intent, 1);
//                adapter_movie.notifyDataSetChanged();
//            }
//        });

        return root;
    }

    public static void setJSONResponse(String JSON) {
        response = JSON;
    }

    private void updateJSON(String newData) {
        Gson gson = new Gson();
        Type listOfMoviesItemsType = new
TypeToken<ArrayList<MovieItem>>() {}.getType();
        ArrayList<MovieItem> new_movie = gson.fromJson(newData,
listOfMoviesItemsType);
        movie_list.addAll(gson.fromJson(newData,
listOfMoviesItemsType));
        main_title.add(new_movie.get(0).getTitle());
    }

    @Override
    public void onActivityResult(int requestCode, int resultCode,
Intent data) {
        super.onActivityResult(requestCode, resultCode, data);
        if (requestCode == 1) {
            if (resultCode == Activity.RESULT_OK) {
                String returnValue = data.getStringExtra("movie");
                updateJSON(returnValue);
            }
        }
    }
}
```

---Requester.java---

```
package ua.kpi.comsys.iv8106.tools;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.net.HttpURLConnection;
import java.net.MalformedURLException;
import java.net.URL;
```

```
import java.util.Queue;

public class Requester implements Runnable {
    private final String formattedUrlString;
    private final String[] parameters;
    private Queue<String> queue;

    public Requester(Queue<String> queue, String
formattedUrlString, String... parameters) {
        this.queue = queue;
        this.formattedUrlString = formattedUrlString;
        this.parameters = parameters;
    }

    @Override
    public void run() {
        String res = sendRequest(formattedUrlString, parameters);
        queue.add(res);
    }

    private String sendRequest(String formattedUrlString, String[]
parameters) {
        try {
            URL url = new
URL(String.format(formattedUrlString,parameters));

System.out.println(String.format(formattedUrlString,parameters));
            HttpURLConnection connection = (HttpURLConnection)
url.openConnection();
            connection.setRequestProperty("accept",
"application/json");
            InputStream responseStream =
connection.getInputStream();

            InputStreamReader isReader = new
InputStreamReader(responseStream);
            BufferedReader reader = new BufferedReader(isReader);
            StringBuilder textBuilder = new StringBuilder();
            String line;
            while((line = reader.readLine())!= null){
                textBuilder.append(line);
            }
            connection.disconnect();
            return textBuilder.toString();

        } catch (MalformedURLException e) {
            e.printStackTrace();

        } catch (IOException e) {
```

```
            e.printStackTrace();
        }
        return null;
    }
}
```

---Databaser.java---

```
package ua.kpi.comsys.iv8106.tools.database;

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

import androidx.annotation.Nullable;

public class Databaser {

    DBHelper dbh;
    SQLiteDatabase db;

    public Databaser (@Nullable Context context, @Nullable String
name, @Nullable SQLiteDatabase.CursorFactory factory, int version)
{
        this.dbh = new DBHelper(context, name, factory, version);
        this.db = this.dbh.getWritableDatabase();
    }

    public String queryTable (String tableName, String query,
String queryColumn){
        Cursor curr  = this.db.query(tableName,
                        null,
                        String.format("%s = '%s'", queryColumn,
query),
                        null,
                        null,
                        null,
                        null);

        if (curr.getCount() > 0) {
            curr.moveToFirst();
            return curr.getString(curr.getColumnIndex("json"));
        }
        return null;
    }

    public Boolean apppendToTable (String tableName, String
newQuery, String queryColumn, ContentValues values){
```

```
        Cursor curr  = this.db.query(tableName,
                null,
                String.format("%s = '%s'", queryColumn,
newQuery),
                null,
                null,
                null,
                null);

        if (curr.getCount() <= 0) {
            this.db.insert(tableName, null, values);
            return true;
        }
        return false;
    }
}
```

---DBHelper.java---

```
package ua.kpi.comsys.iv8106.tools.database;

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)
{
        super(context, name, factory, version);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        //Pic list, movie list
        String createMain  = "CREATE TABLE  %s (" +
                "no INTEGER PRIMARY KEY AUTOINCREMENT," +
                "query TEXT," +
                "json TEXT" +
                ");";
        //Movie desc
        String createSecondary = "CREATE TABLE %s (" +
                "no INTEGER PRIMARY KEY AUTOINCREMENT," +
                "id TEXT," +
```

```
                "json TEXT" +
                ");";

        db.execSQL(String.format(createMain, "imageList"));
        db.execSQL(String.format(createMain, "movieList"));
        db.execSQL(String.format(createSecondary,
"movieDescList"));
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int
newVersion) {
        System.out.println("Upgrade, IDK do something.");
    }
}
```

4. **Висновок:**

Було створено програму за завданням, навчився зберігати інформацію в базі даних а також діставати по потребі.