

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

Лабораторна робота № 4  
з дисципліни  
“Програмування мобільних систем”

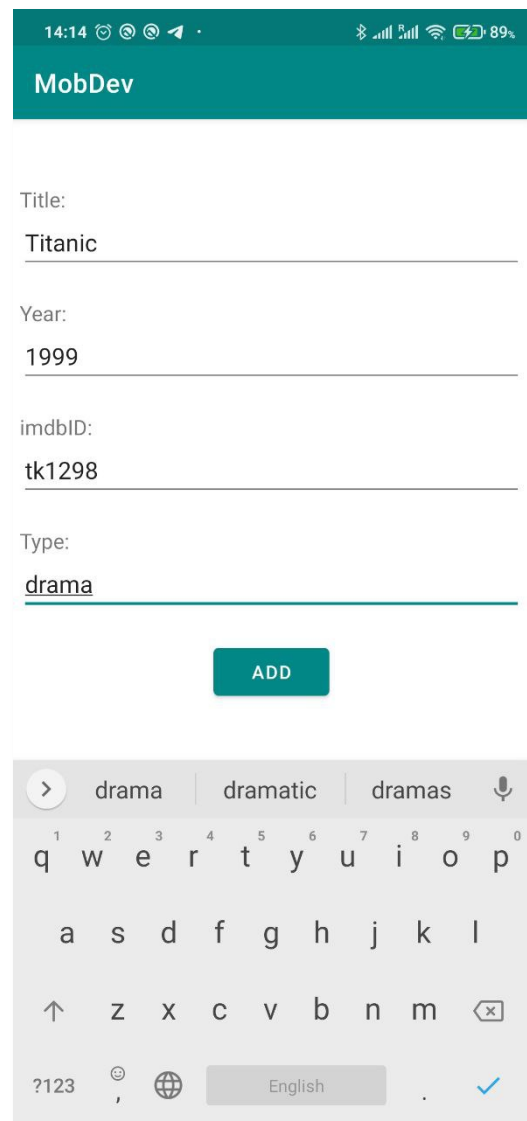
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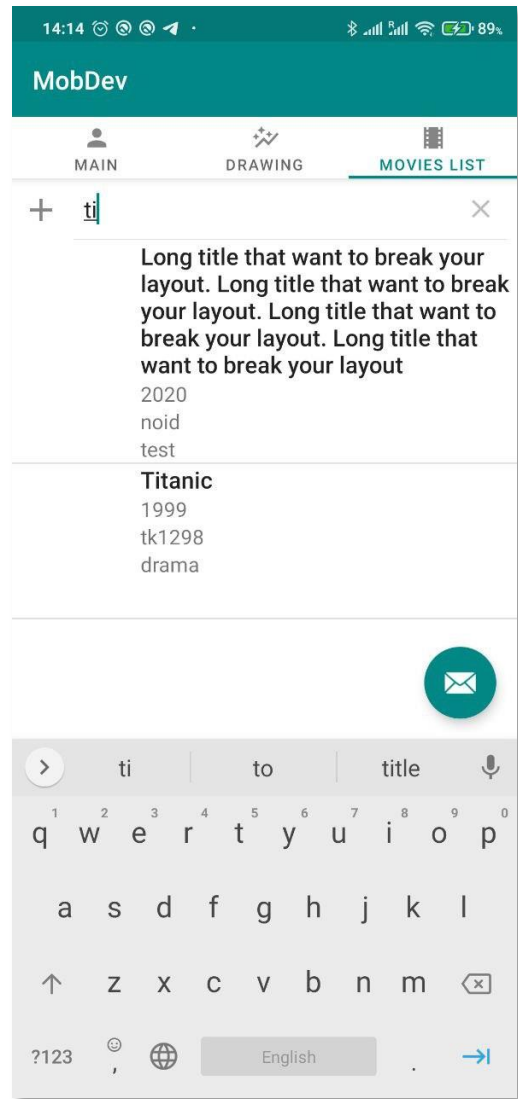
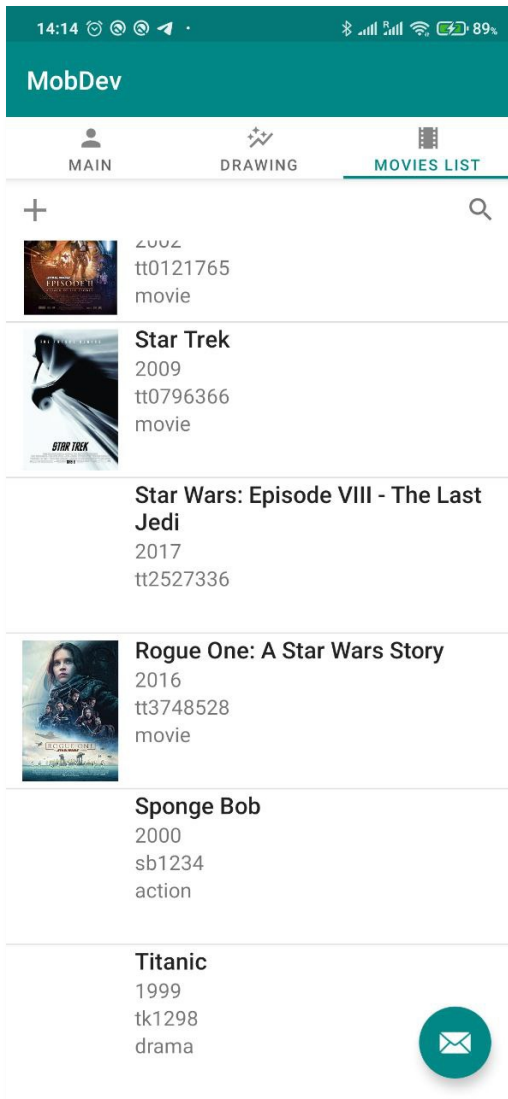
Київ 2021

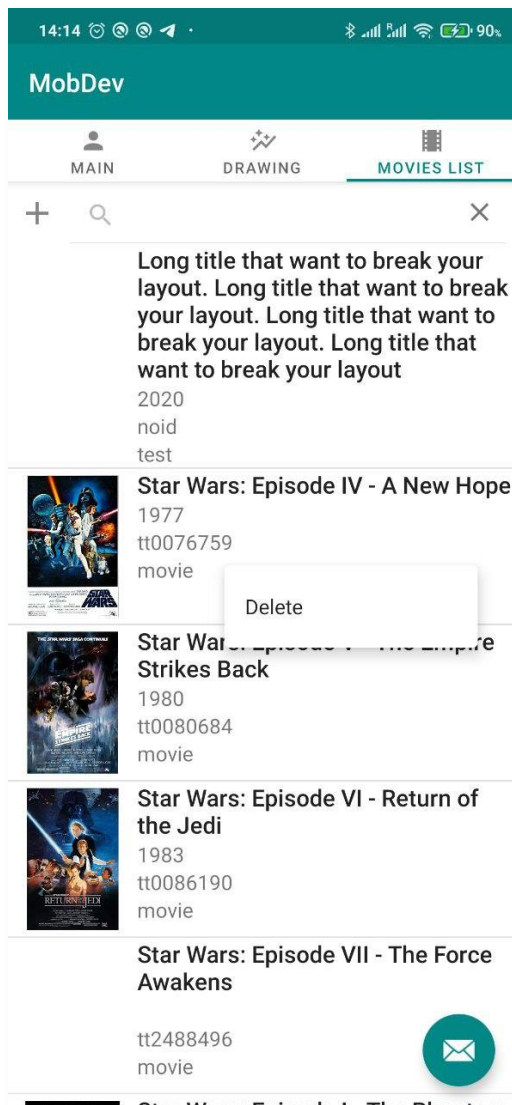
## Варіант 1

Предметна область – фільми  
[Архів для завантаження](#)

### Скріншоти роботи додатку







## Лістинг коду

### FragmentMoviesList.java

```
package ua.kpi.compsys.io8226;

import android.content.Intent;
import android.os.Bundle;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
```

```

import androidx.fragment.app.Fragment;
import androidx.appcompat.widget.SearchView;

import android.view.ContextMenu;
import android.view.Gravity;
import android.view.LayoutInflater;
import android.view.MenuItem;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.ImageButton;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import com.google.gson.Gson;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.util.ArrayList;

import ua.kpi.compsys.io8226.model.Movie;
import ua.kpi.compsys.io8226.model.MoviesList;

public class FragmentMoviesList extends Fragment {

    MoviesList moviesList;
    ListView moviesListView;
    AdapterMoviesList adapterMoviesList;
    SearchView searchView;
    ArrayList<Movie> movies = new ArrayList<>();
    TextView noResults;
    ImageButton addMovieButton;

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_movies_list, container, false);
    }

    @Override
    public void onViewCreated(View view, @Nullable Bundle savedInstanceState) {

        noResults = view.findViewById(R.id.textView_noResults);
        searchView = view.findViewById(R.id.search_view);
        moviesListView = (ListView) view.findViewById(R.id.moviesListView);
        adapterMoviesList = new AdapterMoviesList(this.getContext(), movies);
        addMovieButton = (ImageButton)
view.findViewById(R.id.button_addMovieButton);
        moviesListView.setAdapter(adapterMoviesList);

        // searchView.setImeOptions(searchView.getImeOptions() |
EditorInfo.IME_FLAG_NO_EXTRACT_UI);
        registerContextMenu(moviesListView);
    }

```

```

if (adapterMoviesList.getCount() == 0) {
    parseFromJson("movies_list");
    movies.addAll(moviesList.getMovies());
}

addMovieButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Intent intent = new Intent(view.getContext(),
MovieAdditionActivity.class);
        startActivityForResult(intent, 1);
    }
});

moviesListView.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
    @Override
    public void onItemClick(AdapterView<?> adapterView, View view, int
position, long l) {

        Movie item = moviesList.getMovieByPosition(position);
        parseFromTxt(item.getImdbID(), item);

        Intent intent = new Intent(view.getContext(),
MovieDetailsActivity.class);
        intent.putExtra("poster", item.getPoster());
        intent.putExtra("title", item.getTitle());
        intent.putExtra("year", item.getYear());
        intent.putExtra("genre", item.getGenre());
        intent.putExtra("director", item.getDirector());
        intent.putExtra("writer", item.getWriter());
        intent.putExtra("actors", item.getActors());
        intent.putExtra("country", item.getCountry());
        intent.putExtra("language", item.getLanguage());
        intent.putExtra("production", item.getProduction());
        intent.putExtra("released", item.getReleased());
        intent.putExtra("runtime", item.getRuntime());
        intent.putExtra("awards", item.getAwards());
        intent.putExtra("rating", item.getImdbRating());
        intent.putExtra("votes", item.getImdbVotes());
        intent.putExtra("rated", item.getRated());
        intent.putExtra("plot", item.getPlot());

        startActivity(intent);
    }
});

searchView.setOnQueryTextListener(new SearchView.OnQueryTextListener() {
    @Override
    public boolean onQueryTextSubmit(String s) {
        return false;
    }

    @Override
    public boolean onQueryTextChange(String s) {
        ArrayList<Movie> results = new ArrayList<>();

```

```

        for (Movie movie: movies) {
            if (movie.getTitle().toLowerCase().contains(s.toLowerCase()))
                results.add(movie);
        }

        adapterMoviesList.update(results);

        if (results.size() == 0) {
            moviesListView.setVisibility(View.GONE);
            noResults.setVisibility(View.VISIBLE);
        } else {
            noResults.setVisibility(View.GONE);
            moviesListView.setVisibility(View.VISIBLE);
        }

        return true;
    }
});
}

@Override
public void onActivityResult(int requestCode, int resultCode, @Nullable Intent
data) {
    if (data != null) {
        String title = data.getStringExtra("title");
        String year = String.valueOf(data.getIntExtra("year", 666));
        String imdbId = data.getStringExtra("imdbId");
        String type = data.getStringExtra("type");

        Movie movie = new Movie(title, year, imdbId, type);
        movie.setPoster("");
        movies.add(movie);
        moviesList.getMovies().add(movie);
        adapterMoviesList.update(movies);
    }
}

@Override
public void onCreateContextMenu(@NonNull ContextMenu menu, @NonNull View view,
@Nullable ContextMenu.ContextMenuInfo
menuInfo) {

    super.onCreateContextMenu(menu, view, menuInfo);

    getActivity().getMenuInflater().inflate(R.menu.context_menu_movie, menu);
}

@Override
public boolean onContextItemSelected(@NonNull MenuItem item) {
    AdapterView.AdapterContextMenuInfo menuInfo =
        (AdapterView.AdapterContextMenuInfo) item getMenuInfo();
    int selectedItemIndex = (int)
adapterMoviesList.getItemId(menuInfo.position);

    switch (item.getItemId()) {
        case R.id.option_delete:
            String title =
moviesList.getMovies().get(selectedItemIndex).getTitle();

```

```

        movies.remove(selectedItemIndex);
        moviesList.getMovies().remove(selectedItemIndex);
        adapterMoviesList.update(movies);

        Toast toast = Toast.makeText(getContext(), title + "\nhas been
deleted",
        Toast.LENGTH_SHORT);
        TextView toastMessage = (TextView)
toast.getView().findViewById(android.R.id.message);
        if (toastMessage != null) {
            toastMessage.setGravity(Gravity.CENTER);
        }
        toast.show();

        return true;
    default:
        return super.onContextItemSelected(item);
    }
}

//Parses JSON file with primary film characteristics.
private void parseFromJson(String fileName) {
    Gson gson = new Gson();
    BufferedReader br = null;

    try {
        br = new BufferedReader(new
InputStreamReader(getFileLocation(fileName)));
        moviesList = gson.fromJson(br, MoviesList.class);

    } catch (Exception e) {
        e.printStackTrace();
    } finally {
        if (br != null) {
            try {
                br.close();
            } catch (IOException e) {
                e.printStackTrace();
            }
        }
    }
}

// Parses TXT file with additional film characteristics.
private void parseFromTxt(String fileName, Movie movie) {
    Gson gson = new Gson();
    BufferedReader br = null;

    try {
        br = new BufferedReader(new
InputStreamReader(getFileLocation(fileName)));
        Movie parsedMovie = gson.fromJson(br, Movie.class);

        movie.setTitle(parsedMovie.getTitle());
        movie.setYear(parsedMovie.getYear());
        movie.setGenre(parsedMovie.getGenre());
        movie.setDirector(parsedMovie.getDirector());
        movie.setWriter(parsedMovie.getWriter());
        movie.setActors(parsedMovie.getActors());
    }
}

```



```

        movie.setCountry(parsedMovie.getCountry());
        movie.setLanguage(parsedMovie.getLanguage());
        movie.setProduction(parsedMovie.getProduction());
        movie.setReleased(parsedMovie.getReleased());
        movie.setRuntime(parsedMovie.getRuntime());
        movie.setAwards(parsedMovie.getAwards());
        movie.setImdbRating(parsedMovie.getImdbRating());
        movie.setImdbVotes(parsedMovie.getImdbVotes());
        movie.setRated(parsedMovie.getRated());
        movie.setPlot(parsedMovie.getPlot());

    } catch (Exception e) {
        e.printStackTrace();
    } finally {
        if (br != null) {
            try {
                br.close();
            } catch (IOException e) {
                e.printStackTrace();
            }
        }
    }
}

private InputStream getFileLocation(String fileName) {
    return
    getResources().openRawResource(getResources().getIdentifier(fileName,
        "raw", this.getContext().getPackageName()));
}
}

```

### **AdapterMoviesList.java**

```

package ua.kpi.compsys.io8226;

import android.content.Context;
import android.content.res.Resources;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ImageView;
import android.widget.TextView;

import java.util.ArrayList;

import ua.kpi.compsys.io8226.model.Movie;

public class AdapterMoviesList extends ArrayAdapter<String> {

    ArrayList<Movie> movies;
    Context mContext;

    public AdapterMoviesList(Context context, ArrayList<Movie> movies) {

```

```

        super(context, R.layout.Listview_item);
        this.movies = movies;
        this.mContext = context;
    }

    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
        try {
            ViewHolder mViewHolder = new ViewHolder();
            if (convertView == null) {
                LayoutInflater mInflater = (LayoutInflater) mContext.
                    getSystemService(Context.LAYOUT_INFLATER_SERVICE);
                convertView = mInflater.inflate(R.layout.Listview_item, parent,
false);

                mViewHolder.mTitle = (TextView)
convertView.findViewById(R.id.title);
                mViewHolder.mYear = (TextView)
convertView.findViewById(R.id.year);
                mViewHolder.mImdbID = (TextView)
convertView.findViewById(R.id.imdbID);
                mViewHolder.mType = (TextView)
convertView.findViewById(R.id.type);
                mViewHolder.mPoster = (ImageView)
convertView.findViewById(R.id.poster);

                convertView.setTag(mViewHolder);
            } else {
                mViewHolder = (ViewHolder) convertView.getTag();
            }

            mViewHolder.mTitle.setText(movies.get(position).getTitle());
            mViewHolder.mYear.setText(movies.get(position).getYear());
            mViewHolder.mImdbID.setText(movies.get(position).getImdbID());
            mViewHolder.mType.setText(movies.get(position).getType());

            mViewHolder.mPoster.setImageResource(mContext.getResources().getIdentifier(
                movies.get(position).getPoster(), "drawable",
mContext.getPackageName()));

        } catch (Resources.NotFoundException | IndexOutOfBoundsException |
                NumberFormatException e) {

            e.printStackTrace();
        }

        return convertView;
    }

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

    public void update(ArrayList<Movie> results) {
        movies = new ArrayList<>();
    }

```

```

        movies.addAll(results);
        notifyDataSetChanged();
    }

    private static class ViewHolder {
        TextView mTitle;
        TextView mYear;
        TextView mImdbID;
        TextView mType;
        ImageView mPoster;
    }
}

```

## **MovieDetailsActivity.java**

```

package ua.kpi.compsys.io8226;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.ImageView;
import android.widget.TextView;

public class MovieDetailsActivity extends AppCompatActivity {

    ImageView poster;
    TextView title;
    TextView year;
    TextView genre;
    TextView director;
    TextView writer;
    TextView actors;
    TextView country;
    TextView language;
    TextView production;
    TextView released;
    TextView runtime;
    TextView awards;
    TextView rating;
    TextView votes;
    TextView rated;
    TextView plot;

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

        poster = (ImageView) findViewById(R.id.imageView_poster);
        title = (TextView) findViewById(R.id.textView_title);
        year = (TextView) findViewById(R.id.textView_year);
        genre = (TextView) findViewById(R.id.textView_genre);
    }
}

```

```

        director = (TextView) findViewById(R.id.textView_director);
        writer = (TextView) findViewById(R.id.textView_writer);
        actors = (TextView) findViewById(R.id.textView_actors);
        country = (TextView) findViewById(R.id.textView_country);
        language = (TextView) findViewById(R.id.textView_language);
        production = (TextView) findViewById(R.id.textView_production);
        released = (TextView) findViewById(R.id.textView_released);
        runtime = (TextView) findViewById(R.id.textView_runtime);
        awards = (TextView) findViewById(R.id.textView_awards);
        rating = (TextView) findViewById(R.id.textView_rating);
        votes = (TextView) findViewById(R.id.textView_votes);
        rated = (TextView) findViewById(R.id.textView_rated);
        plot = (TextView) findViewById(R.id.textView_plot);

        Bundle bundle = getIntent().getExtras();
        if (bundle != null) {
            if (!bundle.getString("poster").equals("")) {
                poster.setImageResource(this.getResources().getIdentifier(
                    bundle.getString("poster"), "drawable",
this.getPackageName()));
            }
            title.setText(bundle.getString("title"));
            year.setText(bundle.getString("year"));
            genre.setText(bundle.getString("genre"));
            director.setText(bundle.getString("director"));
            writer.setText(bundle.getString("writer"));
            actors.setText(bundle.getString("actors"));
            country.setText(bundle.getString("country"));
            language.setText(bundle.getString("language"));
            production.setText(bundle.getString("production"));
            released.setText(bundle.getString("released"));
            runtime.setText(bundle.getString("runtime"));
            awards.setText(bundle.getString("awards"));
            rating.setText(bundle.getString("rating"));
            votes.setText(bundle.getString("votes"));
            rated.setText(bundle.getString("rated"));
            plot.setText(bundle.getString("plot"));
        }
    }
}

```

## **MovieAdditionActivity.java**

```

package ua.kpi.compsys.io8226;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

```

```

public class MovieAdditionActivity extends AppCompatActivity {

    EditText editText_title;
    EditText editText_year;
    EditText editText_imdbId;
    EditText editText_type;
    Button buttonAdd;

    String title;
    int year;
    String imdbId;
    String type;

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

        editText_title = (EditText) findViewById(R.id.editText_title);
        editText_year = (EditText) findViewById(R.id.editText_year);
        editText_imdbId = (EditText) findViewById(R.id.editText_imdbId);
        editText_type = (EditText) findViewById(R.id.editText_type);
        buttonAdd = (Button) findViewById(R.id.button_add);

        buttonAdd.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                try {
                    title = editText_title.getText().toString().trim();
                    year =
Integer.parseInt(editText_year.getText().toString().trim());
                    imdbId = editText_imdbId.getText().toString().trim();
                    type = editText_type.getText().toString().trim();

                    Intent intent = new Intent();
                    intent.putExtra("title", title);
                    intent.putExtra("year", year);
                    intent.putExtra("imdbId", imdbId);
                    intent.putExtra("type", type);
                    setResult(RESULT_OK, intent);
                    finish();
                } catch (IllegalArgumentException e) {
                    Toast.makeText(getApplicationContext(),
                        "Invalid format for 'year' parameter. Type integer
value.",
                        Toast.LENGTH_SHORT)
                        .show();
                }
            }
        });
    }
}

```

## **Висновок**

В результаті виконання лабораторної я додав екран із детальною інформацією про сутність, функціонал додавання нової сутності в колекцію, видалення сутності з колекції, пошуку по назвах сутностей.