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**Multimedia Technology and Design**

**Mobile Application Development (EL575)**

**Android App Project Report**

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**Introduction:**

My name is Michail Skalistiris Pikis, I was born in 1997 in Athens, Greece. I was brought up in the Greek island Zakynthos where I leaved until my 18th year of age. Then I moved to the United Kingdom to widen my horizons and pursue my passion for knowledge.

I always have been interested in technological advancements and especially gadgets. Today, many computer functionalities are getting replaced through the use of mobiles. Therefore, application development has become an integral part of the conventional digital world. Regarding mobile phones, my passion lies on the features and their implementation. Although, I do not use my mobile phone extensively. I am truly interested in how to produce efficient solutions to satisfy everyday needs and simplify tasks.

**Overall Design:**

To start and plan my design, I had to conduct relevant research. Firstly, I examined last year’s projects to gain a better understanding on the requirements. Secondly, I examined various similar applications on the internet to acquire a range of techniques. Lastly, I gave a brief reading to the Material Design guidelines.

With the above in mind, I started the designing progress. Constrains of 16dp each, were mostly used for the layout of my content. I kept the default colours and font. My MainActivity, includes a Recycler view layout that with the use of an adapter displays multiple items and maintains a limited number of views. Its adapter, is using a cell image card layout. At Details and About activity, I introduced a back button (to the Main Activity) on the top left corner of the viewport by making MainActivity as their parent in the manifest file. My share button was integrated in the Details Activity bottom right corner with the use of a red background colour. The options menu, is a default drop down list, that currently only features a About activity page.

**Enhancements/Modifications:**

* *Successful:*
  + About Activity: An activity page including information about the application.
  + Spinning Progress Bar: I have introduced a circle progress bar that spins while the content is loading and stops right before the image appears.
  + Back to MainActivity Button:Top right corner button that navigates to MainActivity from internal ones.
  + Dropdown Menu Button (MainActivity):Default dropdown navigation list that transfers you to internal pages (currently About page).
  + Share Button (Details Activity):A button in the bottom right corner of the Details activity that gives you the ability to share the displayed content with a link, through email and social media.
  + Error message:Display error message when content is not loading.
  + Error Image:When image is not available, display not found image.
* *Unsuccessful:*
  + Page refresh: Refresh content by swiping downwards. Introducing refresh spinning icon.
  + Animation Transitions:Animated transitions from MainActivity to DetailsActivity (Image expanding from thumbnail).

**Implementation:**

The implementation of the above features was quite challenging. I used [stackoverflow](http://www.stackoverflow.com/), [quora](http://www.quora.com/) and [developer.android](https://developer.android.com/reference/classes.html) to get hints on what commands to use and how to integrate them into my code.

* *Successful:*
  + About Activity: To create my About activity, I had to create a new class. Then extend it with the AppCompatActivity class to include the top Action Bar. Connected it with the layout that I had previously created and made it as a child of class MainActivity.
  + Spinning Progress Bar: I introduced a spinning progress bar for the loading content. I turned to lecture 5 and [developer.android](https://developer.android.com/reference/classes.html) for help. I followed a similar procedure of implementation in both the adapter and DetailsActivity.
  + Back to MainActivity Button: This was accomplished by editing the manifest to set MainActivity as parent of DetailsActivity and AboutActivity.
  + Dropdown Menu Button (MainActivity): The three-dotted menu button icon is displayed by default, when the value “never” is assigned to the “showAsAction” field of items in the menu xml file. The only navigation link implemented was the About link due to lack of development time, but the addition of a new one can be accomplished simply by creating a new item.
  + Share Button (Details Activity): The share button was implemented in the details page using a “FloatingActionButton”. I found the required steps on [this](https://stackoverflow.com/questions/17167701/how-to-activate-share-button-in-android-app) page and edited them to fit my framework. Steps:
    - Create intent that enables sharing
    - Set content type
    - Text displayed before link + content link
    - Text displayed as subject
    - On click start the procedure
  + Error message (Main Activity): I declared and initialized a toast message, to be displayed when an error occurs in the procedure of loading JSON files.
  + Error image (Details Activity): For the case in which a JSON file in the DetailsActivity does not contain a valid image source. An image displaying “IMAGE NOT FOUND” gets appears in the existing ImageView.
* *Unsuccessful:*
  + Page refresh: I tried implementing a refresh function that gets activated when the user swipes downwards in the recycler view. In my activity\_main layout I wrapped around the RecyclerView a widget called SwipeRefreshLayout. But was unable to complete the task because I could not find the required command that would add new JSON files in the existing list. I tried to implement a variety of different commands and methods, already used in my algorithm and from external sources, in both the adapter and the MainActivity with no success.
  + Animated Transitions: I assigned a common name for the attribute “transitionName” to both activity\_details and cell\_image\_card ImageView. Then, I enabled content transition in the two responding classes. Further on, I tried implementing step 3 (Lecture 8, page 34) in the MainActivity class. I changed the intent’s and option’s first parameter to adapter.class but I was given an error that I could not get through.

**Conclusion:**

In conclusion, my application runs smoothly but could have been developed much further. Some design features have been altered and all the basic requirements have been met. Additionally, a number of extended features are present.