

**ITIS/ITCS 4180 Mobile Application Development
In Class 06**

Basic Instructions:

1. In every file submitted you **MUST** place the following comments:
 - a. Assignment #.
 - b. File Name.
 - c. Full name of all students in your group.
2. Each group should submit only one assignment. Only the group leader is supposed to submit the assignment on behalf of all the other group members.
3. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will lose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
4. Export your Android project and create a zip file which includes all the project folder and any required libraries.
5. Submission details:
 - a. Only a single group member is required to submit on canvas for each group.
 - b. The file name is very important and should follow the following format:
InClass06.zip
 - c. You should submit the assignment through Canvas: Submit the zip file.
6. **Failure to follow the above instructions will result in point deductions.**

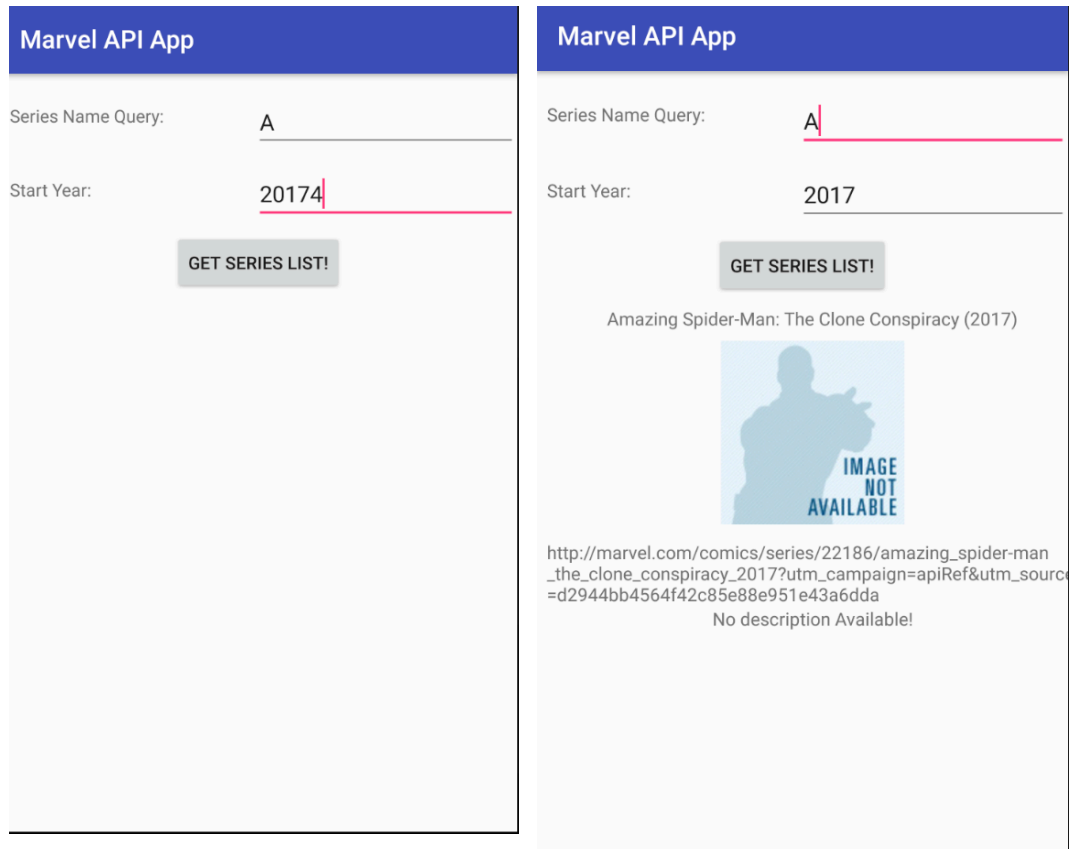
In Class 6 (100 Points)

In this assignment you will develop an application that consumes the Marvel API for series, comics, and animations of a big variety of well-known animation cartoons. The application will make you more familiar with ListViews. The app should enable the user to select the series collection that has title starts with a given phrase, in addition to a start year of it. The Marvels Series App will display the news for the result of the query filters s. The api used for this assignment is the Marvel API documented in this link:https://developer.marvel.com/documentation/getting_started .

API Setup:

As explained in the the getting started link up the following are the main steps to start using the API:

1. Sign up: Get an API key.
2. Check the interactive API tool given here: . We will be using the Series and Characters API endpoints.
3. As soon as you get you API Key/Private key, you will be able to interact with the website and get the response.
4. The following API call will be utilized in today's in-class assignment:
https://developer.marvel.com/docs#!/public/getSeriesCollection_get_25



(a) Main Activity Sets Filter Values .

(b) Main Activity ListView listing series list.

Figure 1, Main Activity Wireframe

Part 1: Main Activity (50 points)

The **Main** activity is responsible for the loading and displaying the different series available at MarvelAPI based on two filters. The requirements are as follows (Figure 1):

1. Upon loading the Main Activity, the app should get two inputs from the user:
 1. A string that you want to find series with name starting with it.
 2. A start year of the series.
2. By clicking on the (GET SERIES List!) button, the user should connect to the Marvel API. Using the following endpoint:

<https://gateway.marvel.com:443/v1/public/series?titleStartsWith=A&startYear=2017&apikey=YOURAPIKEY>

The API need special digest from the given API and private key. The hash generation is provided in the template accompanying the assignment.

3. Retrieve the JSON list of the series provided by the API.
 - a) Create a "Series" class containing variables: id, name, description, imageUrl, Url, and array of Character names which participate in the Series. should be populated from the retrieved JSON.
 - b) The app should use a child thread (or AsyncTask) to perform data retrieval and data parsing. The parsed JSON should return a list of Series objects. The list of Series should be then returned to the Main Thread to be displayed.

- c) Display a horizontal ProgressBar during the download and parsing of the JSON and hide it once these operations are completed.
 - d) The Series items should be displayed in a ListView or RecyclerView. See Figure 1(b).
4. Upon clicking a list item it should open the Characters Activity, you should also pass the Series object to the Characters Activity.

Part 2: Characters Activity (30 points)

Series ID: 22102
A Year of Marvels (2017)
Ant-Man (Scott Lang)
Hydra
Rocket Raccoon
Spider-Man
Tippy Toe
Vulture (Adrian Toomes)
Winter Soldier

Figure 2, Charcters Activity Wireframe

This activity displays the names of Characters participating in the clicks Series item in the main activity. The requirements are as follows Figure 2:

1. Update the activity title to display the name of the ID of the Series.

2. Update the TextView at the top to match the Series Name.
3. Upon loading the Characters Activity, the Character names should be filled in a ListView.

Optimizing The ListView (20 points)

The Main Activity should optimize the usage of the ListView.

- A. Use the convertView in effective way.
- B. Use the ViewHolder pattern.