

ITIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 7

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. Please download the support files provided with this assignment and use them when implementing your project.
5. Export your Android project and create a zip file which includes all the project folder and any required libraries.
6. Submission details:
 - a. Only a single group member is required to submit on Moodle for each group.
 - b. The file name is very important and should follow the following format:
Group#_InClass07.zip
 - c. You should submit the assignment through Moodle: Submit the zip file.
7. **Failure to follow the above instructions will result in point deductions.**

In Class Assignment 7 (100 Points)

In this assignment you will make HTTP requests and parse JSON data. Using the NY Times Top Stories API you will retrieve the Top News in JSON format and display them on your own app. The app is composed of three activities, namely **MainActivity**, **TopStoriesActivity** and **DetailsActivity**.

Initial Setup

1. Go to <https://myaccount.nytimes.com/register/> and create a new account.
2. After creating an account, goto <http://developer.nytimes.com/apps/register>
 - a. Name your application "**InClass07 App**".
 - b. Mark the checkbox which reads "**Issue a new key for Top Stories API**" (the last checkbox you will find).
 - c. Check "**I agree to the terms of service**" and click on Register Application.
3. Figure 1 below shows the application information, copy the "**Key**", which is required by the NyTimes Top Stories API.

Times Developer Network Application Registration
Thank you for registering.

Your API Keys:

Top Stories API

Key: 9ea46636842ebab25795fcf4b431cea8:7:74502626

Application:	InClass07 App
Key:	9ea46636842ebab25795fcf4b431cea8:7:74502626
Status:	active
Registered:	2 seconds ago

Key Rate Limits	
20	Calls per second
10,000	Calls per day

Figure 1. NyTimes Application

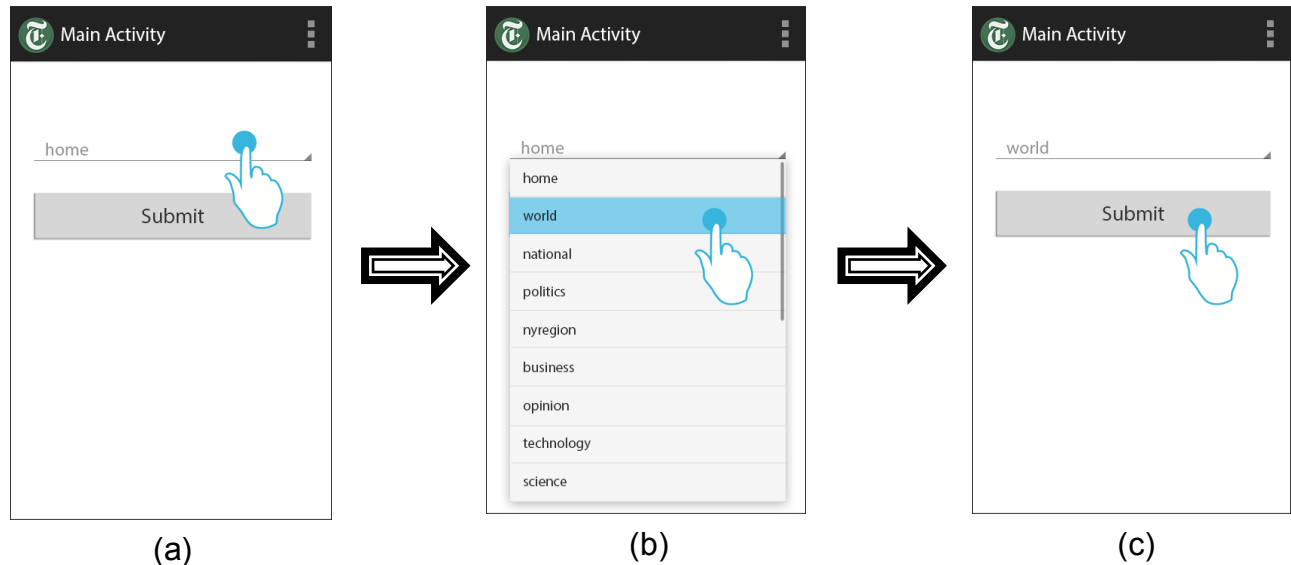


Figure 2. The Main Activity Wireframe

Part 1 (10 Points): MainActivity

The Main activity displays a Spinner that enables the user to select a section. The list of sections is provided at http://developer.nytimes.com/docs/top_stories_api. Figure 2 shows the Main activity. The requirements include:

1. Spinner should have a Dropdown with a list of sections. The sections are:
home, world, national, politics, nyregion, business, opinion, technology, science, health, sports, arts, fashion, dining, travel, magazine, realestate

```

results: [
  {
    section: "Sports",
    subsection: "Soccer",
    title: "Gianni Infantino Wins FIFA Presidency in Second-Ballot Surge",
    abstract: "Mr. Infantino defeated three other candidates in an election that many soccer officials hope will be a new beginning for the embattled soccer body.",
    url: "http://www.nytimes.com/2016/02/27/sports/soccer/gianni-infantino-is-elected-fifa-president.html",
    byline: "By SAM BORDEN",
    item_type: "Article",
    updated_date: "2016-02-26T15:58:35-5:00",
    created_date: "2016-02-26T12:04:13-5:00",
    published_date: "2016-02-27T00:00:00-5:00",
    material_type_facet: "News",
    kicker: "",
    des_facet: [],
    org_facet: [],
    per_facet: [],
    geo_facet: [],
    multimedia: [
      {
        url: "http://static01.nyt.com/images/2016/02/27/sports/27FIFAheart/27FIFAheart-thumbStandard.jpg",
        format: "Standard Thumbnail",
        height: 75,
        width: 75,
        type: "image",
        subtype: "photo",
        caption: "Gianni Infantino celebrated his election as president of FIFA on Friday.",
        copyright: "Richard Heathcote/Getty Images"
      },
      {
        url: "http://static01.nyt.com/images/2016/02/27/sports/27FIFAheart/27FIFAheart-thumbLarge.jpg",
        format: "thumbLarge",
        height: 150,
        width: 150,
        type: "image",
        subtype: "photo",
        caption: "Gianni Infantino celebrated his election as president of FIFA on Friday.",
        copyright: "Richard Heathcote/Getty Images"
      },
      {
        url: "http://static01.nyt.com/images/2016/02/27/sports/27FIFAheart/27FIFAheart-articleInline.jpg",
        format: "Normal",
        height: 107,
        width: 190,
        type: "image",
        subtype: "photo",
        caption: "Gianni Infantino celebrated his election as president of FIFA on Friday.",
        copyright: "Richard Heathcote/Getty Images"
      }
    ],
    + {..},
    + {..}
  ]
},

```

Figure 3a. NyTimes Top Stories Feed in json

2. Upon clicking the submit button start the TopStories Activity. The intent should include the section name using extras. You will not be given any points if you use a static variable to share data between activities.

Part 2 (60 Points): TopStories Activity

The TopStories activity is responsible for retrieving the Top Stories results based on the section term sent from the Main Activity. Figure 3a, shows a sample json feed for the sports category. All the story items are under Results array. Each array item includes the story title, story abstract, story byline and many other fields. In addition, each story item includes a thumbnail under multimedia and format: <“Standard Thumbnail”> and a normal image under <format: “Normal”>.

The TopStories Activity wireframe is shown in Figure 3b. The requirements include:

1. The NyTimes Top Stories API should be used to retrieve the results matching the section, referring to the documentation provided at the following location: http://developer.nytimes.com/docs/top_stories_api/
 - Use the api endpoint <http://api.nytimes.com/svc/topstories/v1/>
 - You should set the “**api-key**” based on your key generated for your app.
 - You should set the “**section**” parameter to the section term sent from MainActivity.
 - You should set the “**response-format**” parameter to “json” (without quotes).
 -

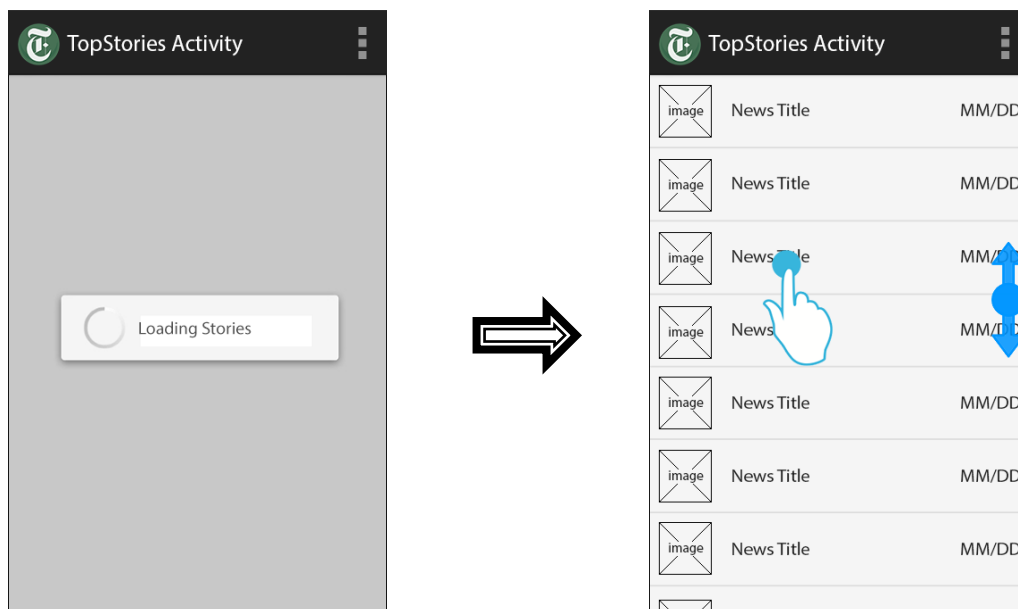


Figure 3b. The TopStories Activity

2. Send a GET request and retrieve the results for the selected section. All the parsing and HTTP connections should be performed by a worker thread or an AsyncTask and should not be performed by the main thread. While the JSON is being downloaded and parsed, display a ProgressDialog as indicated in Figure 3b.

3. Create a Story class which stores the following:
Story title, Story byline, Story abstract, Story created_date, Story thumb_image_url and Story normal_image_url.
4. The JSON parser should return a list of story objects.
5. The ProgressDialog should be dismissed after the parsing is completed, and the story items should be displayed in a list. **This list should be created using a customized ListView.** Each item in the ListView should contain a TextView showing the *Story title*, ImageView showing the *Story thumbnail* and *Story created_date* in “MM/DD” format as shown in Figure 3.
6. You may use Picasso Library to retrieve and display the thumbnails. Check <http://square.github.io/picasso/> for more information on how to use this library.
7. Clicking a list item should start the Details Activity. The intent should include the required story information to be sent to the Details activity using extras. You will not be given any points if you use a static variable to share data between activities.

Part 3 (30 Points): DetailsActivity

This activity should display the story details, which includes the Story Title, Story byline, Story abstract and story normal image. Make sure that the image on this activity is different from the earlier (thumbnail) image. The DetailsActivity should receive the story information from the TopStories Activity. Figure 4 shows the DetailsActivity. The implementation requirements include:

1. Do not use the main threads to download the selected photo. You must use Picasso Library or an AsyncTask/Thread to download the image. If there is no photo image, use the provided “photo_not_found.png”
2. Once the selected photo is retrieved, display it as indicated in Figure 4
3. Pressing back should end this activity and go back to the TopStories activity.

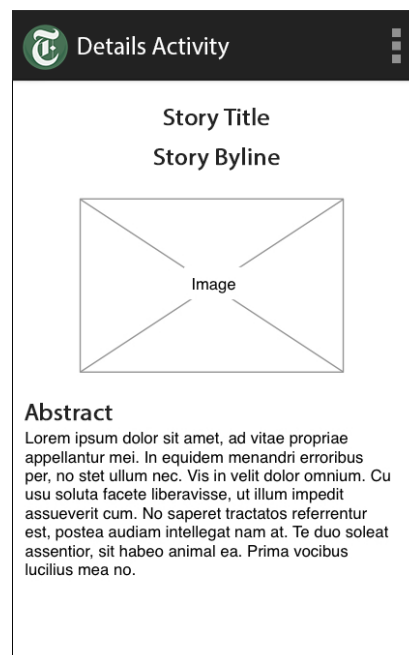


Figure 4. The Detail Activity Wireframe