

CSC 413.03 – Summer 2016

Project 2: Text Views and Internet Requests  
Due Monday, June 27, 2016

Joseph Prasad

## Introduction:

This project involved multiple steps in order to communicate with the API and receive tokens in which you can parse the information to receive questions after. The application involves the creator to make multiple buttons, a through f, in which the user can press these buttons to answer the questions. Questions are received using Json requests and receiving the token, which was a string of characters. You receive the token using the `get_token` method and you will then need to copy this string and paste it in the `get_question` method to receive the question. A new request will generate a new question and the user has access to questions altogether.

## How to use the Program

The program was very complicated at first because it was the first application we built under the Android software. The initial step that I've done was to create a button, wire it into the java class and create a reaction with the button. The button is wired within the `onCreate` method, where you would initialize it as a button and create a reference for it. In order for you to click the button, you would have to create an `onClick` listener. The easiest way to do this is to create a singleton class and call the methods within the `MainActivity` file. I did not create a separate singleton class and ultimately made my code very hard to read. Underneath this code is where I created my 6 buttons, A-F, and the `buttonOnClick` is called when the button is pressed in the application. The hardest part about the application was creating the `JsonObjectRequest` and I have found so much information online about making requests using Json objects. I implemented the `GET` method within the request, and wanted the output using the `response.getString` method. I came across many errors, one in which said "org.json.JSONException : End of input at character 0" and I was stuck on this error for the whole week. I finally found a solution online saying that I got a null response which generated that exception. I solved this problem using a buffered reader and string buffer.

The second hardest part about the application was obtaining internet access. I did not know that we had to implement a permission statement to gain internet access and I received multiple errors until I put in "`<uses-permission.....  
\"android.permission.INTERNET\" />`". The placement of this line of code is also very important because if you put it underneath the application, the program will not have internet access. I also learned the uppercase and lowercase are extremely important, especially in the `AndroidManifest` section where its mainly all html coding.

I am still not finished with the assignment. For some reason, I was not able to parse the information and instead, I displayed the questions as a string. The token that I obtained which was a string of letters and numbers, was placed at the end of the `get_questions` url and I was able to obtain different questions. This was not good enough because I believe I would then have to return the information as segments, one for the question, one for the answers, and one for the correct answer instead of using "`return buffer.toString();`".

# Conclusion

In conclusion, it was a great learning experience to build this quiz app and I have grasped many different concepts including communications with Volley, communications with the internet, button methods including onCreate, onResponse, onClickListener, and learning what each method does. Also using Json requests which seemed to be very popular in youtube. These Json requests included JsonArrays, JsonObjectRequest and JsonRequest. If I am able to successfully parse the information, then I would be finished with the assignment. I created buttons that would tell the user if the input is correct or not. I would also have to regenerate the buttons if it is incorrect and give more feedback to the user for a more friendly experience. All in all, project 2 has taught me to become an experienced programmer and I don't think I have incorporated more information in any computer science class than I have with this assignment. Another bug that I have noticed is whenever I swipe up or down on the app screen, the application closes.

## References

<http://stackoverflow.com/questions/27716064/org-json-jsonexception-end-of-input-at-character-0-of> (errors)

<http://www.androidhive.info/2014/09/android-json-parsing-using-volley/> (Json parsing)

<https://www.youtube.com/watch?v=FzwBYPzCIHk> (more volley information)

<https://www.youtube.com/watch?v=Bs9HsaaEAD4> (using Volley)

<https://www.youtube.com/watch?v=RCyuqMVGl4g> (adding code to a button click)

[https://www.youtube.com/watch?v=\\_7r\\_vdwmW0o](https://www.youtube.com/watch?v=_7r_vdwmW0o) (Async Task)

^Async was very helpful in creating network calls so I can access the UI if I am on the background thread.

<https://www.youtube.com/watch?v=Gyaay7OTy-w> - creating a URL connection using HTTP

Also used <https://developer.android.com/index.html> for brief information about volley, Json, and the android studio as a whole. Also used the links provided in the project 2 guidelines.