

Self Review

By AbdelRahman



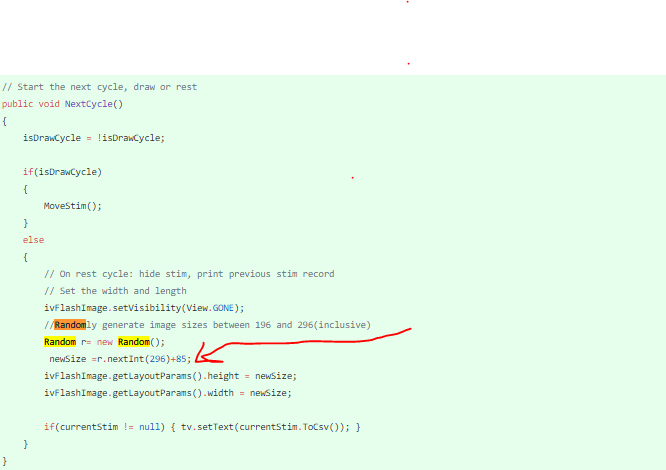
# Technical Proficiency

Project1 in the community group consisted of a lot of coding and being exposed to an array of different languages to which all posed a challenge and means to grow one vocabulary of languages. Moreover, the progressive nature of project1 was that it allowed us to gradually ease into the software development environment that involved much group work and intragroup communication. Coming from a somewhat simple

Programming background, this paper meant that there was so much more to learn. As part of the clients needs there was 4 assigned tasks that are the following: the Visual Scan tool, Aya App, Internet of things Database API and a VR rendition of the Visual Scan tool. These tasks will form the bases for answering the self-review questions.

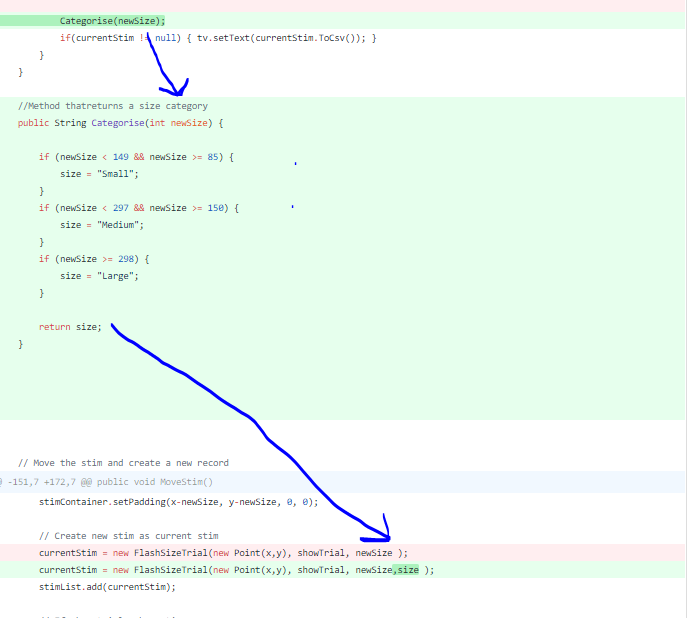
## Question 1: What is the overall quality of your code like?

### Task1: The visual Scan tool-FlashSizeImage.

As an initial transition to project1 paper, my task was to code the random generation of Image sizes that would appear on the screen in the visual scan flash tool. Integration of a new class flashSize fragment class with the required functionality needed another class /object called the FlashSizeTrial that defined its movement, and CSV file output. I injected a random generator and stored it in a variable called newSize. This value was used to set both the height and width of the image view drawn to the screen. This enabled the size of the image view to be controlled by changing the random upper and lower limit parameters.

<https://github.com/OtagoPolytechnic/CommSoftTasks/commit/e6353acb6070a6dd08533d57dbc559924d2950f1>

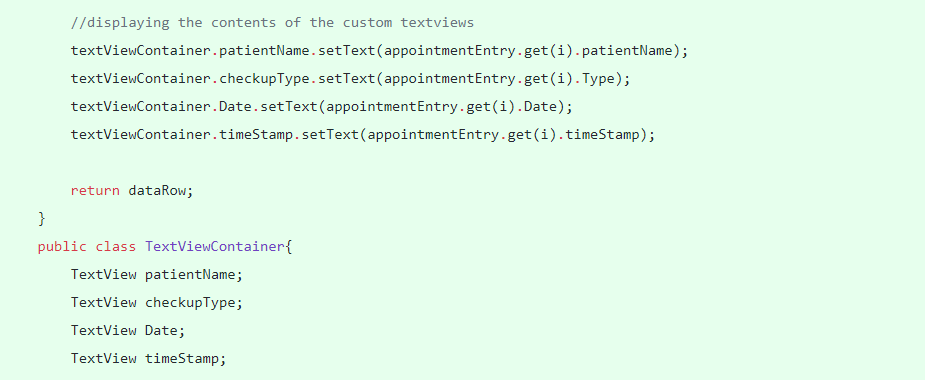
After the first initial meeting, the client needed information in the CSV to be more meaningful. This was remedied by adding functionality to display the size criteria of the imaged tapped. A simple method that checks the passed in random size integer and returns the corresponding size string data type. Following the preparation of the flashTrial constructor and its overriding toCSV toString to accept a size parameter, the categorize methods size property is seamlessly included in the class instances. The Simplicity of this code meant that it can be reusable and easily incorporated into additional classes with similar functionality.

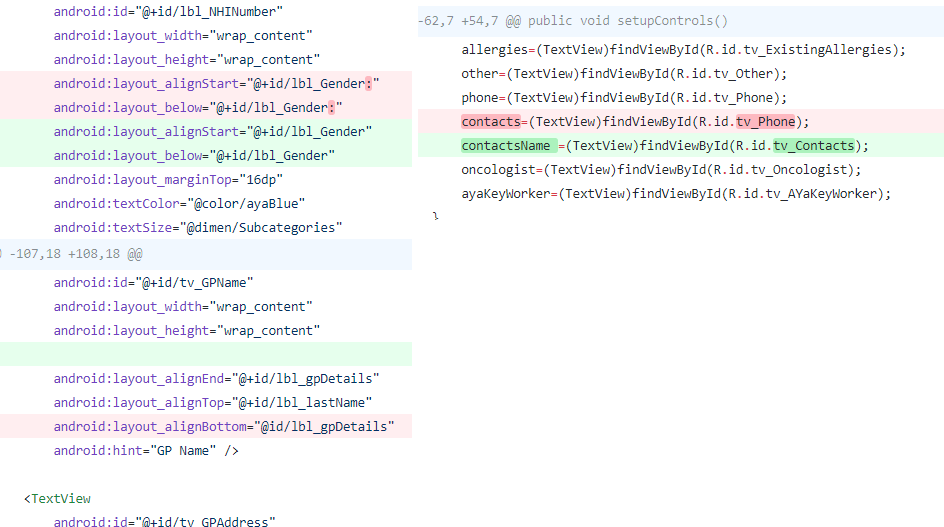


### <https://github.com/OtagoPolytechnic/CommSoftTasks/commit/d00b2da6c6c746cd9c4a14fef259b4945cbc5225>

### Task2: The Aya App.

Progressing from the Visual Scan tool, it was time for the group to onboard a medical passport app that was presented by the District Health Board. Fortunately, design students drafted page layouts for the application.

In the instance of coding the Appointments functionality that enabled users to add/edit and delete appointments with timestamps, we needed to inherit the gitView public method from the public interface adapter to populate a custom listview containing the patient's information. This custom adapter required a list of textViews that could have been declared as a global variable restricting its use within the parent activity. This is resolved by creating a simple Textview container class (courtesy of Samantha and adapted for this class) instantiated inside the method and its elements set by the retrieved XML appointment entries. This increases code modularity and tidiness as the classes sole purpose is to hold elements. As the AYA Apps activities increase, so is the need for a more efficient way to switch between intents. Having a separate button handler for each intent could prove cumbersome when adding more activities. This code conveniently creates an instance of the Intent when switching on the XML elements. As a result, the class method startActivity is executed according to the intent variable.

Also, the app consisted of the Edit Health Information registration form that had many text field and text view elements. Because of this, there was much need for a trivial- uniform labelling of their element ids. Having the id name and element they constituted separated by an underscore meant for easy search and fixes.

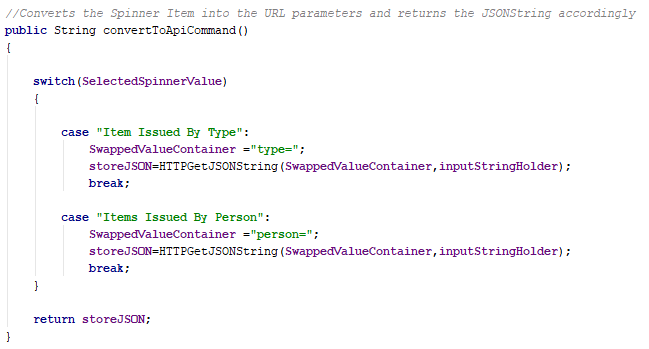
### Task3: Internet of Things database API.

Later in the semester, a client needed a means to monitor their hardware inventory and location. Because ASP.net API is framework makes it an ideal platform for building HTTP services including RESTful applications. This allows for an easy transition to building a Mobile version for the IOT platform that simply calls makes a series of HTTP URL requests hitting the Database for JSON meta data..

An API get request was needed to view all the items returned. However, database dependencies in the items table with the type model and subTypeModel tables made its difficulties. This was solved by this iterating through the items table and selecting its properties based on its ID’s. foreaching over the collection, this Loops through and connects the tables to the intermediary Item table. And because of the itemModel Table is a foreign key of newSubtype, that becomes its parameter. This is believed to be good quality code as the get method accepts an ID, makes a database query and selects on where the ID in the url get request and maches it with the items table ID. This contains a dynamically populated list of values in the Item table. 

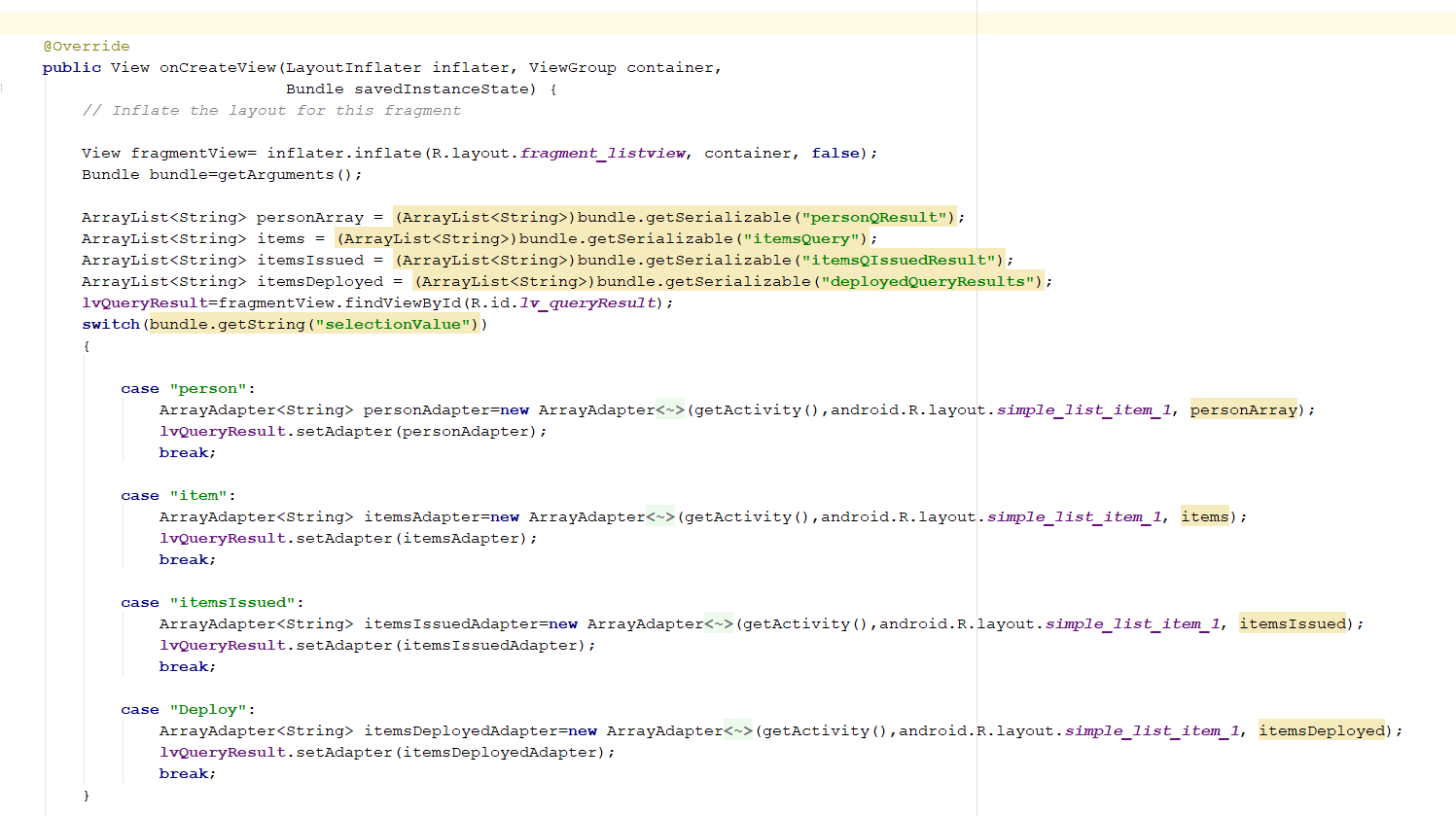
Next, it was my job to build a mobile app that makes http requests, processes the response the JSON and displays the metadata in a meaningful representation.

However, the requirement was to display not only the information in the Person Entity, but code logic was needed to switch between the asynchronous threads to display the Items, ItemsIssued , ItemsDeployed depending on the values of the Drop down. After completing what is perceived an easy task became an ever more time-consuming endeavor when adding a search function to the application. The SearchDatabase class contained flow logic needed to grab and append the value of the text value followed by the drop downs’ category selection.

What is the highlight of modularized code is the below example logic that takes the value of the spinner and assigns it a new value parameter “SwappedValueContainer”. This is then passed in along with the search value string that is added to the HTTP URL of HTTP Worker Asynchronous Task, the code below does suffer from lack of Method cohesion. This can be identified by the dependency this method has on the returning value of another method call “SelectedSpinnerValue”. However, The simplicity of this code is its redeeming quality as it can be understood without much context.

Switch on listview

All of the table information needed to be displayed in a listview on the same activity as the category and search. This was accomplished by adding the listview to a fragment so that it would display the URL response table information dynamically upon submitting the search. However, because the fragment\_listview is on a separate activity, bundling of JSON data is needed for cross activity transfer. On the listview fragment, the receiving bundled information corresponding to each table category information is then stored into an Arraylist of string. Sending the Array of JSON objects to the List View fragments required a switch statement consisting of different array adapters that would accept the bundled array depending on the Spinners selection type. What is qualitatively sound about this code is the separation and of the listview fragment from the main activity. It wasn't as simple as using one array adapter for the 4 selection view types. Rather than extending from the fragment class separate from the acitivty but within the same namespace, this code is compacted into a separate class. This ensures there is the least amount of common coupling between the classes. They do no share any global variables but the serializable arraylists that are necessary for data transfer. This improves debugging by better localization of errors. It is relatively easier to fix packaged code compared to its cohesive counterpart.



Dropdown arrayadapter switcher

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### Task4: Unity Virtual Scan Wander Tool.

## Question 2:How well did you follow best practices in development?

## Question 3: How well did you use appropriate version control?

## Question 4: To what extent do you think you contributed an equal portion of the overall project?