**Assignment 1**

**Mapping Connection**

In this assignment, we are going to try to simulate how behavioural connection works and solve a problem where we will try to cluster similar minded (similar interest) people.

Task 1:

We will first try to convert generate how we simulate interests. Here we will be using “graph” to represent this phenomena.

* + We will need to create a class named “Person” which will include information about the person such as “name”, “id”, “age”, “occupation”.
  + We will also need to create a class “Interest” which will include “name”, “requirements[]”. You can add more variable to the class if necessary.
  + Each “Person” object will be connected to his hobbies in graph. One person can be connected to multiple of “Interest”s. “Interest”s will be connected with other “Interest”s if the share similar “requirements[]”. You will need to be able to change similarity so make a similarity function that takes inputs how requirements need to match. Example; similarity(int x)

Task 2:

We need to be able to find cluster of people have similar interests from the graph.

* We can use graph traversal to find if they have any connections. It will change based on the value of x.
* You will need to show this the cluster size increases with value of x increasing. Show the plot of cluster number and size with x (there will be 2 plots one (cluster size – x and cluster number – x).

Task 3:

Input will only take an int value. Example : 5

Output will be two plots on the same stage. Each plot needs to have their name below the plot.

Submission :

Time : 23:00, 29th January.

You need name your project <student\_id> then zip the file. Ex: student\_id 0112310001 the file name 0112310001.zip.

There will 1 marks for proper submission.