

OEC Planning

Group: Javascript

Input:

- Given Excel Sheet

Output/Display:

- Names of those that have in contact with individuals infected
 - As well as their chances of having the infection

Files/Classes:

- read.py - backend controller
 - reading and making a dictionary of all the teachers(*teacherList()*)
 - Uses the teacher record excel sheet
 - reading and making a dictionary of all the students (*studentList()*)
 - Uses the student record excel sheet
 - reading and making a dictionary of all the teaching assistants(*TAList()*)
 - Uses the teaching assistants excel sheet
 - updating dictionaries to reflect individuals who are infected at the beginning of the day (*infectionList(teacher dictionary, student dictionary, TA dictionary)*)
 - making a set of all the classes in each period (*putStudentsInClass()*)
 - Uses the dictionary of students
- graph.py
 - Makes a graph that has nodes as class periods and edges represents a student travelling between them
 - The edge will have the following properties:
 - Student_id
 - Chance they have the infection
- infectionRisk.py
 - Calculates the risk of students being infected after each period
 - Should take into account current infected students
- gui.py - frontend controller of UI
 - Display list of infected students(*infectedStudents()*)
 - Uses read.py
 - Display a sorted list of students with the highest to lowest possibility of be infected
 - Uses graph.py

External Libraries

- Openpyxl - used to read and write Excel files using python
 - Will be used in read.py
- Tkinter - used to create UI windows using python
 - Will be used in gui.py

Infection Calculations:

- In a class with someone that has an infection: chances increase by $(3/\text{\#number of students in the class})$
- If one has a health condition, chances of having the infection increase by 1.7x if they come in contact with someone that may have the infection (anyone with a chance of >0%)
- Considering grade 9 to have normal chances of catching the infection:
 - Grade 10s are 1.25 times more likely than grade 9s
 - Grade 11s are 1.50 times more likely than grade 9s
 - Grade 12s are 1.75 times more likely than grade 9s
- Teachers and TAs have the same risk of catching the virus as grade 9
- Students in period 2 and 4 also have a chance of catching the virus if they are in the same classroom as someone who has the infection the prior period