

Criterion A: Planning

1. Defining the problem

At Victoria Park CI, there exists an ongoing program called “peer tutoring”.

Operation of the program

There are 10 student coordinators for the program, chosen at the end of the previous school year. These students run the peer tutoring program by processing registrations, matching pairs, and acting as a supervisors during the peer tutoring sessions (2 coordinators after school every day). The program begins a few weeks into the start of a school year, and tutors and tutees are able to register at this time through paper registration forms. Registrations are available throughout the school year. Registrations must specify the course (grade and subject) for which one would like to be a tutor/tutee as well as the days on which the tutor/tutee is free. Coordinators look at the forms, all collected in a binder (the acting database) and match tutor-tutee pairings based on the information given, and it is preferred for the pairs to stay together. At each tutoring session, the pairs that are to meet on the day meet in a room and sign in on a chalkboard? The coordinators then access an online spreadsheet from smartphones to change mark off an attendance sheet. A laptop is available just for the program but currently is not used.

After describing the problem, my computer sciences teacher agreed to be my advisor and my two friends, both being peer-tutoring coordinators, agreed to be the clients.

2. Justification for solution

Using computer science to develop a solution to aid in the operation of the peer tutoring program allows for a more standardized way of operation, and brings to the peer-tutoring program a new level of automation. A lot of the work that the coordinators do manually such as the processing of forms, pairing, and marking of attendance is very hands-on and can turn out to be tedious. A solution that can take these tasks and put them together for the available computer to perform would make the coordinators’ job much easier.

As part of the operation of the peer tutoring program, registration forms are one page of paper each, and the notices which are sent to tutors and tutees when a pair is consolidated are sent on paper as well. A computer solution can eliminate the need for paper through the use of email notifications and online registrations, using less paper and leaving a smaller environmental footprint.

I chose to use Java to code the operations needed by the solution because:

- The object-oriented paradigm is very fitting for modelling people and their related information
- Ability to create applet for the online portion of the solution
- Java is widely used and is multi-platform
- Ability to create a database and access/change information
- Java is the course teaching language and the language with which I am most familiar

3. Criteria for success

- Online/offline registration
- Input current tutor/tutee information (by the coordinator)
- Suggest/make pairings when needed
- Option for email/print notification (when a pair is made and for attendance alerts)
- Records attendance
- Sign-in of tutor and tutee at each session (part of attendance)

- Manage a database of tutors and tutees
- Online and offline portions of the solution can communicate with the database