

## Criterion A: Planning

### IT Room Borrowing System

#### **Problem:**

Mr Hui is a teacher in our school. He is responsible for the management of the IT, which consists of numerous equipment in it, such as MicroBit, Lego EV3, books and etc. Mr Hui wants to allow students and teachers to borrow equipment in the IT room, so he needs a system to allow him to know the stock inventory and to record the borrowing records. As Mr Hui would not often stay in the IT room, he also hopes the system to be self-serviceable.

Mr Hui wanted someone to help him to build this system and talked about his problem to our computer science teacher, our teacher thought that it may be good material as my Internal Assessment and recommended me to meet Mr Hui.

As to know more about the details and difficulties what Mr Hui face, I decided to meet him to have an interview.

After learning about the details, I thought that I may be able to help him to find a nice solution to solve the problem.

#### **Rationale for the proposed solution:**

I think an efficient Java program can help to solve his problem. It allows me to create separate sections for a student and teacher interface. User interface allows student to borrow, extend returning time and return equipment while teacher's interface allows teacher to not only check the stock inventory or the borrowing records, but also able to add, edit and delete equipment in the stock.

The system should also provide sorting functions to convenient the users and admin. A Question function for users should also be added, as to allow students to question Mr Hui if have any difficulties or have any feedbacks such as wanting for more quantity of certain equipment. A feedback function in the returning section for students is also needed, this allows admin to know the status of the equipment, whether the equipment is great to used, broken or etc.

With these requirements, I decided to make my program in Java because of the following reasons:

- I am learning it at school
- Platform independence
- Netbeans IDE allow me to process it more easily
- Provide user friendly interface for students and teachers
- With graphical interface easy for students and teachers to access the required information
- Independent objects allow more flexibility in adding and deleting items

- A large library as reference
- Easier to manipulate RandomAccessFiles: read and write in

**Stating successful criteria:**

1. Have a database to store all the records permanently.
2. Allow users and admins easy to access the stock inventory
3. Have a clear interface to represent the states of equipment clearly to users and admin
4. Have sorting functions provided in the stock inventory
5. Enable users to borrow equipment
6. Each equipment can only be borrowed by one person
7. Each person can only borrow a maximum of two items
8. Enable users to return equipment
9. Enable users to extend the date of return
10. Have a feedback function for users
11. Have a question function for users
12. Allow admin to easily notice the questions ask by users
13. Allow admin to know the borrowing records and items in the stock inventory anytime when it was checked
14. Allow admin to add / delete items in the stock inventory
15. Allow admin to edit status of items weather it is opened or not opened for borrowing
16. Provide error boxes automatically if there are any data entry errors.
17. Provide clear and easy instructions to guide users in how to use the program.
18. Allow admin to create new admin
19. Not allowing users to borrow new items if return late 2 times
20. Allow admin to re-open users borrow authorization.

Total: 332 words