

Criterion A

Defining the problem

My client is Mr. Ashok Thombare, who is an academic assistant working in the Reprographics department of the Mahindra United World College of India, a residential boarding school. The program I will be making is for the Reprographics department which is mainly responsible for receiving, storing and issuing stationary required for academic and extracurricular work to both students and faculty at the school. Moreover, they also carry out tasks such as photocopying and printing.

Since the school is situated in a geographically isolated spot, the Reprographics department is the only way that the students and faculties have access to different types of resources required for the academic and extracurricular work as mentioned before. At the moment, the client uses an excel sheet to register the stationaries that are issued. The excel sheet displays the number of resources in stock, the amount issued and the amount yet to be issued. Moreover, the client uses a handwritten register in order to keep a history of all the resources issued to faculties only. In this register, every faculty has a separate segment where they write down the item issued and the number of items issued to them and for proof, they sign right beside every record.

The problem with the excel sheet is that Mr. Ashok has to manually log in every stock that arrives and then he has to carry out all the calculations to show the numbers of items issued, in stock and etc. Secondly, the manual register that Mr. Ashok uses can only keep a record of the transactions in a short period of time because in the matter of a few months, the register is filled up and he has to make a new register book in order to keep newer records. In order to see a record from months ago, Mr. Ashok has to look and flip through a lot of pages, moreover, this is a very unsustainable method of keeping a record when one could use computers to do this.

Possible Solutions

The client is already using Microsoft Excel in order to store the records at the Reprographics, but this requires my client to pay for a subscription for a Microsoft Office which also makes him pay for unnecessary applications such as Outlook and Word in regards to his work. Hence, using a program that views and helps record all of his information on a database is an efficient alternative. Hence, SQLite can be used in order to show and store records and a program will be working alongside the database in order to control, the calculations, the queries and etc. Secondly, another alternative to the Microsoft Excel system would be Microsoft Access but it is a paid application.

Proposed Solution

I decided to use an Object-Oriented Programming system using Java as the programming language. This would allow me to make a modular program with several interconnected yet

distinct elements having the modifiable and reusable code. Java is platform-independent so the program will be able to run on the school's designated computer. Since there is an erratic internet connection, a desktop application is preferred over a web-based system. I chose Java because it is part of my IB CS syllabus, therefore, I am comfortable using it. SQLite was used as the back-end database software because it is a free, reliable and user-friendly relational database management system.

Success Criteria

The program should have the following -

- Function on the school's computer, integrate within the IT infrastructure
- Have a login feature to only allow Reprographics personnel to access the data
- Enable the user to add, subtract, and modify records of items issued
- A user-friendly interface
- Enable the user to keep proof of issued products and manage the inventory of the Reprographics.
- Save the entered data and retrieve it upon reopening the software