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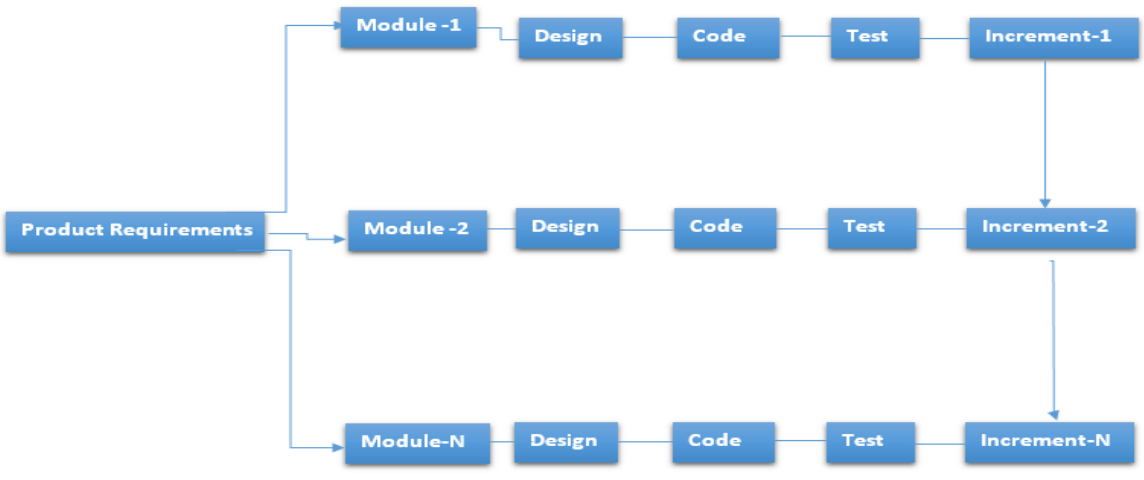
Assignment 3

1. When emergency changes have to be made to systems, the system software may have to be modified before changes to the requirements have been approved. Suggest a model of a process for making these modifications that will ensure that the requirements document and the system implementation do not become inconsistent. Draw a diagram that shows this process. The process should assign a priority to changes so that emergency changes are made but these changes should then be given priority when it comes to making modifications to the system requirements. The changed code should be an input to the final change process, but it may be the case that a better way of making the change can be found when more time is available for analysis.

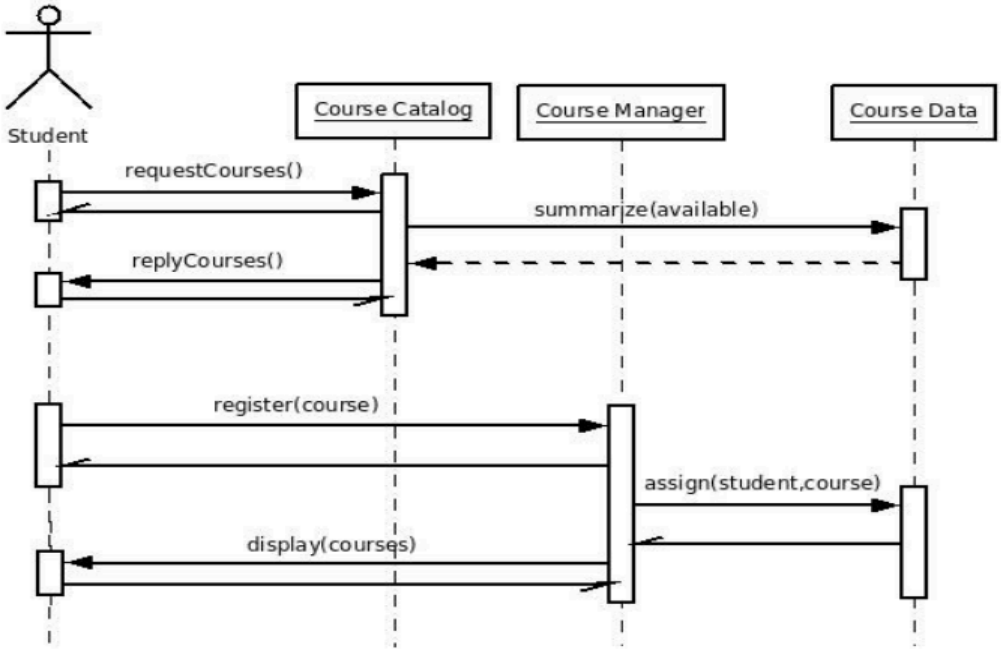
When emergency changes have to be made to system, Incremental model is most suitable as modifications in older version are possible and easily manageable for making these modifications that will ensure that the requirements document and the system implementation do not become inconsistent. Incremental model is a process of software development. In incremental model the whole product requirement is divided into a number of modules. Each module is passes through the requirements, design, coding and testing incrementally until the product is finished and is delivered to the client when it is complete. It involves both development and maintenance phase. When it satisfies all of its requirements then the product is defined as finished.

In the incremental model requirements is broken down into many mini module as development projects.First development process is start for highest priority requirements.

Incremental Process Flow:



1. Develop a sequence diagram showing the interactions involved when a student registers for a course in a university. Courses may have limited enrolment, so the registration process must include checks that places are available. Assume that the student accesses an electronic course catalog to find out about available courses.



Sequence diagram shows all sequential steps involved in registering courses by students. The steps involved step are as follows:

1. The students visit the university and fill up course registration form.
2. The registrar opens the course registration for students and made available for registration.
3. After filling the course form, students apply for courses through the course manager.
4. The course manager summarizes the total list of registered students, and forwards it to the course data.
5. The course manager assigns the course to the students.
6. The course data displays the course to the students for become as qualified and can attend classes.

2. Based on your experience with a bank ATM, draw an activity diagram that models the data processing involved when a customer withdraws cash from the machine.

Following are the activities that are involved in withdrawing the money from ATM:

- Insert Card
- ATM validates the card
  - If invalid, Eject the card and customer takes the card back and exit.
- If valid, ATM prompts the user to enter the PIN.
  - Bank validates the PIN.
  - If invalid, the eject the card.
- If PIN is valid, then, prompt the customer to enter the choice of transaction to withdraw or balance enquiry.
- Customer chooses the account if the required balance is available or not.
  - If balance is not available, the eject the card, customer take the card and exit.
- If the balance is available, then bank debit the amount from the account and customer takes the amount from the machine.
- After this processing, the card is ejected from the machine. And customer takes the card back and exit.

Activity diagram for Withdrawal cash from the ATM Machine