Mohammad Ali Jinnah University
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Assignment 4

Subject: Software Construction and Development (SCD)

Section: AM

Teacher: Muhammad Tauseef

Muhamad Fahad (FA19-BSSE-0014)

(FA19BSSE0014@maju.edu.pk)

Assignment 4

Consider a small library database with the following transactions:

1. Check out a copy of a book. Return a copy of a book.
2. Add a copy of a book to the library. Remove a copy of a book from the library.
3. Get the list of books by a particular author or in a particular subject area.
4. Find out the list of books currently checked out by a particular borrower.
5. Find out what borrower last checked out a particular copy of a book.

There are two types of users: staff users and ordinary borrowers.

Transactions 1, 2, 4, and 5 are restricted to staff users, except that ordinary borrowers can perform transaction 4 to find out the list of books currently borrowed by themselves. The database must also satisfy the following constraints:

1. All copies in the library must be available for checkout or be checked out.
2. No copy of the book may be both available and checked out at the same time.
3. A borrower may not have more than a predefined number of books checked out at one time.

Please answer the following questions:

A. What will be the Requirement Gathering Strategy?
B. What are the possible Requirements Stakeholders?
C. Identify the Functional and Non-Functional Requirements and make a sperate list?
D. What are the Domain Requirements as well as missing requirements?
E. Discuss the Quality of overall system and we can improve it by considering the Key Process Area's under the Light of CMM

A) What will be the Requirement Gathering Strategy?

Strategy for requirement gathering in this case study are following that are meeting, interview, Surveys. These Strategy are the best practice for **Requirement Gathering.**

B) What are the possible Requirements Stakeholders?

- Staff Users.
- Borrowers.
- Developer.

C) Identify the functional and Non-Functional Requirements and make a separate list?

- Functional Requirements:
  - Check, Return Copy of books.
  - Add, Remove, Search Copy of Books.
  - Last, currently checkout of books by borrower.

- Non-Functional Requirements:
  - Security of database.
  - All copies must be available for check out.
  - Borrower has limited numbers of checked out.
  - Copy cannot be both available and checked out.
  - Restricted Transaction.

D) What are the Domain Requirements as well as missing requirements?
- Domain Requirements:
  - Add, Remove, Search Copy of Books.
  - Check, Return Copy of books.

- Missing requirements:
  - 3 limits to have a book on members.
  - Notification sends on issue or return of book.
  - User can reserve book if it is not available.
  - Books return after due date must be add some extra fine.

E) Discuss the quality of overall system and we can improve it by considering the Key Process Area under the light of CMM.

The quality of overall system according CMM Principle are low because of the missing requirement so that we can say the process that improve are following:
- **Project Planning:** It includes defining resources required, goals, constraints, etc.
- **Requirements Management**: It includes the management of customer reviews and feedback which result in some changes in the requirement set.
- **Software Quality Assurance**: It guarantees a good quality software product by following certain rules and quality standard guidelines while development.