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Q1: ANSWER

The water fall model is an SDLC model that is used for the development of software. The whole process of software development is divided into separate phases and different phases of the waterfall model are:

- Requirement and Analysis phase
- System Design phase
- Implementation phase
- Testing phase
- Deployment Phase
- Maintenance phase

Advantages of Waterfall Model are:

- Suited for the small project where requirement is well-defined and certain.
- Disciplined, you must complete one phase before moving to the next phase.
- Simple and easy to understand and use.

Disadvantages of Waterfall Model are:

- Not a good model for complex and object-oriented projects.
- Testing period comes quite late in the developmental process.
- If a flaw is found in one phase you have to start over.

Q2#Answer:

Different stages of SDLC are:

- **Requirement:** where you take requirement from the user about who the software should be.

- **Analysis:** the requirement from the user and converting into a document.
- **System Design:** design all the features and operations as mentioned in the document.
- **Implementation:** coding all the functions and building the software.
- **Testing:** testing the software before deployment.
- **Deployment & Maintenance:** Deploy the software in the Real World and maintain as user needs.

Q3# Answer:

USER-LEVEL REQUIREMENT:

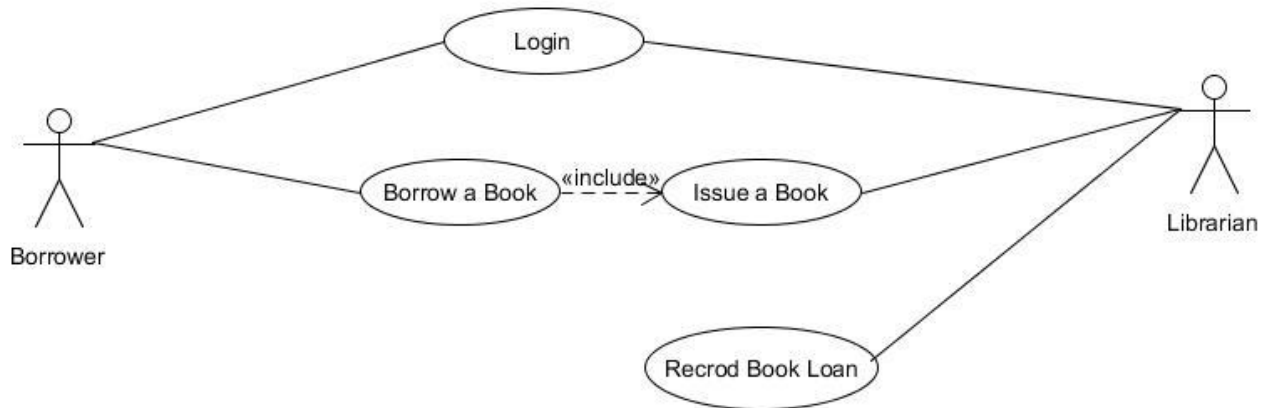
- RECORD A BOOK LOAN

SYSTEM-LEVEL REQUIREMENT:

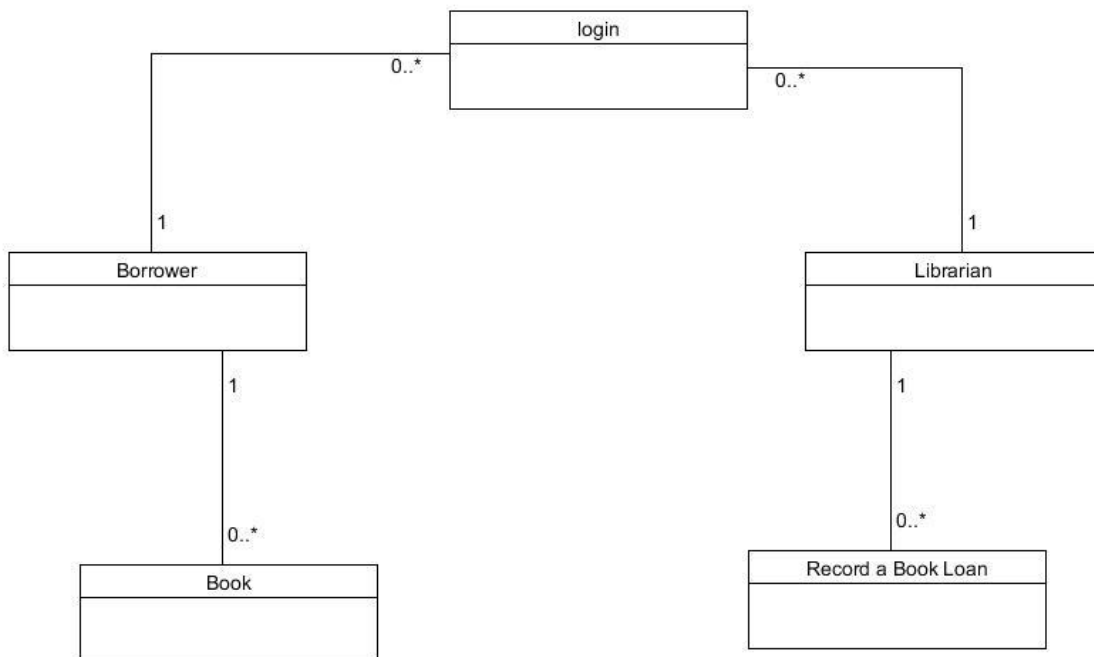
- Check if the Borrower is logged in or not?
- If logged in and user has the ISBN of the book that user wants to borrow, then search the ISBN in the book stack.
- If found, search that is there any copy available or not?
- If available, retrieve it from the stack and issue it to the user.
- And add the due date to the Record A Book Loan with Borrower ID.

Q4# Answer:

USECASE MODEL:



Domain Model:



Q5# Answer:

Non-Functional requirement for Bike racing game:

- Have a fun story line if contain.
- Game should load within seconds.
- Must be Compatible for low end devices.
- Have privacy for the User Data.
- Game shouldn't crash and work smoothly without buffer.

Non-Functional requirement for online Banking system:

- Should have good privacy & Security for the User Data.
- Should have good performance like doing transaction or transferring of money within a second without any delay.
- Should not allow same user to create more than one account.
- It should be easily usable, so that the user can easily learn and use it without any prior knowledge of banking terminology and rules.