Q#01:- Describe water-fall model for software development and write its three advantages and disadvantages.

Answer:- Waterfall Model is a sequential model that divides software development into pre-defined phases. Each phase must be completed before the next phase can begin with no overlap between the phases. Each phase is designed for performing specific activity during the SDLC phase. The testing is done after the development.

Advantages	Dis-Advantages
• Before the next development phase, each phase must be completed.	• Error can be fixed only during the phase.
• Suited for smaller projects where requirements are well defined.	• It is not desirable for complex project where requirement changes frequently.
• They should perform quality assurance test (Verification and Validation) before completing each stage.	• Testing period comes quite late in the developmental process.
• Elaborate documentation is done at every phase of the software's development cycle.	• Documentation occupies a lot of time of developers and testers.
• Project is completely dependent on project team with minimum client intervention.	• Client's valuable feedback cannot be included with ongoing development phase.
• Any changes in software is made during the process of the development.	• Small changes or errors that arise in the completed software may cause a lot of problems.

Q#02:- List the stages of software development life cycle (SDLC). Describe each stage in one phrase.

Answer:- Following are the stages of SDLC

1. **Planning:** In the Planning phase, project leaders evaluate the terms of the project. This includes calculating labor and material costs, creating a timetable with target goals, and creating the project's teams and leadership structure.
2. **Define Requirement:** Defining requirements is considered part of planning to determine what the application is supposed to do and its requirements.
3. **Designing:** Based on the requirements in SRS desired features and operation in detail are specified and documented in a DDS(Design Document Specification).
4. **Development:** In this stage of SDLC the actual development starts and the product is built.The programming code is generated as per DDS during this stage.
5. **Testing:** This stage refers to the testing of the product where products defects are

reported, tracked, fixed and retested, until the product reaches the quality standards defined in the SRS.

6. **Deployment:** Once the product is tested and ready to be deployed it is released formally in the appropriate market.
7. **Maintenance:** What happens during the rest of software's life: changes corrections, additions and more.

Q#03:- Write a user level and several system level instructions…..?

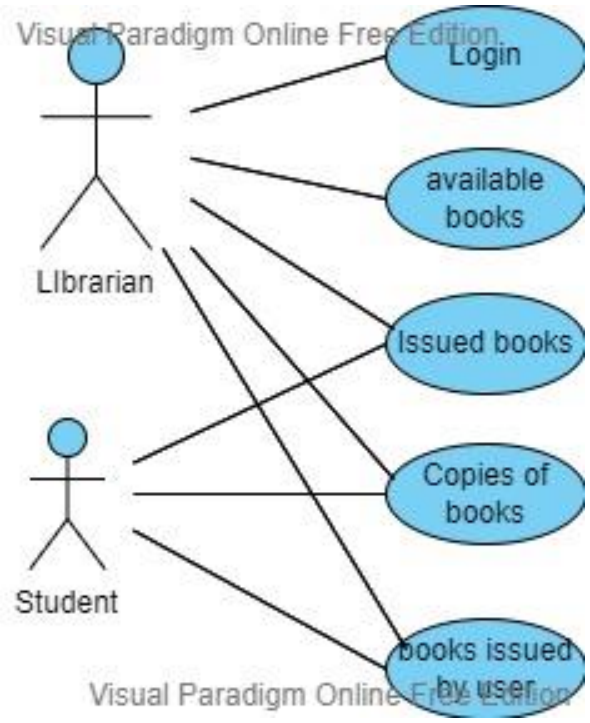
Answer: **1. User level requirement:** Proper place given on the screen to enter the book borrower's details.

2. System Level Requirements:

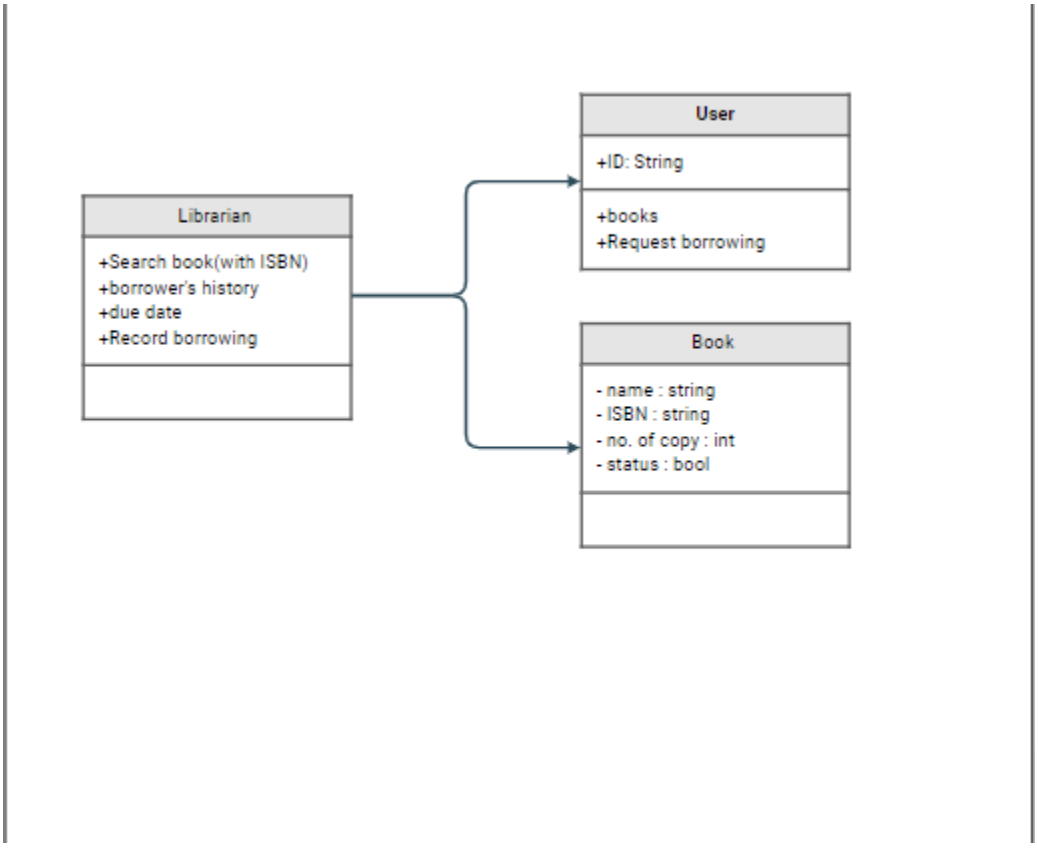
- A book must have an ISBN.
- The copy no. of a book must be written on it.
- Status of the book (either available or borrowed).
- Id of the borrower must be given.

Q#04:- Make a use case diagram and domain model for question no 3.

USE CASE DIAGRAM



Domain Model:



Q#05:- Write non-functional requirements for a bike racing game.

Answer:

1. Secure the users achievements.
2. Secure platform for in game transaction.
3. Ease of use.
4. Good frame rate for every possible low end platform.
5. Performance.
6. Frequent updates to enhance user experience.