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## **ASSIGNMENT**

### **INTRODUCTION TO SOFTWARE ENGINEERING**

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#### **QUESTION #01:**

**ANS:**      **Waterfall model:**

Waterfall model was introduced in 1970. It is a classical model used in SDLC to create a system with linear and sequential approach. It works from one phase to another phase. It is basically used for small projects which have no uncertain requirements.

#### **Stages of Waterfall model:**

1. Communication (Requirements)
2. Planning (Estimating and Scheduling)
3. Modeling (Analysis and design)
4. Construction (Code and test)
5. Deployment (Delivery and support)

#### **Advantages:**

1. It is simple to understand, follow and arrange tasks.
2. Reinforces good coding habits to define before design and then code.
3. Clearly defines milestones and deadlines.

#### **Disadvantages:**

1. Ignores client feedback and make changes based on results.
  2. Does not consider error correction.
  3. Delays testing until the ends of Development Life Cycle.
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### **Question #02:**

#### **ANS:**

#### **Stages of Software Development Life Cycle:**

1. Planning and Requirement Analysis
2. Defining Requirements
3. System Design
4. Developing
5. Testing
6. Deployment
7. Maintenance

#### **Planning and Requirement Analysis:**

Requirement analysis is the most important stage in SDLC. It is performed by the senior members of the team with inputs from the customer, the market surveys and domain experts in the industry.

Planning is done for

1. For quality assurance.
2. Identification of the risks.

#### **Defining Requirements:**

This is done through SRS (Software Requirement Specification) document which consists of all the product requirements to be designed and developed during the project life cycle.

## **System Design:**

Based on the requirements in SRS desired features are specified and documented in a DDS (Design Document Specification). It Includes Screen layouts and business rules.

## **Developing:**

In this stage coding is generated based on the document in DDS.

## **Testing:**

In this stage errors are tracked, reported and fixed.

## **Deployment:**

After the correction of errors in the product the product is now deployed into the market.

## **Maintenance:**

After the product is deployed changes happens to the product accordingly.

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### **QUESTION #05:**

#### **ANS:**

#### **Non-functional requirements of bike racing game:**

The game shall occupy a space of 2GB.

The game shall run properly on a system having minimum 4GB RAM.

#### **Non-functional requirements of an online banking system:**

The contact support of system shall be available 24/7.

### **Question #03:**

**Ans:**

#### **User level requirement:**

The system shall allow a librarian to record a book loan.

#### **System level requirements:**

The borrower shall login to the system.

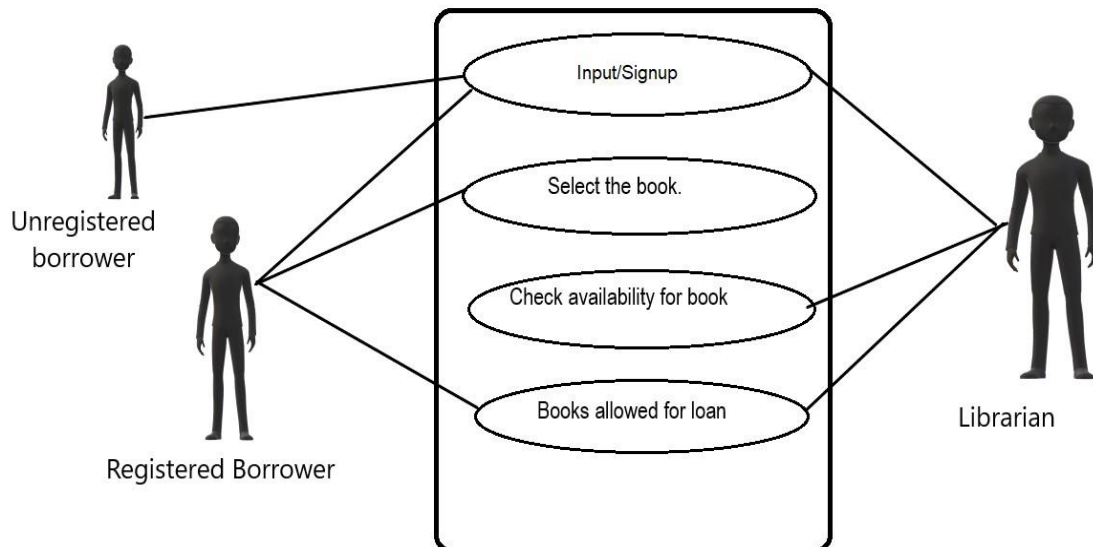
The borrower shall select the book that he wants to purchase.

The system shall check the availability of the book.

The system shall record the book for loan to the borrower.

### **Question #04:**

**ANS:** Use case diagram:



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### **Question #04:**

**ANS:** Domain model:

