Practical 6

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Aim: To create a Sequence Diagram to represent the dynamic view (behavior) of the system.

Theory:

1. State scenarios you selected for your case study with its UML Sequence diagram and explanation for each.

    1. Scenario 1 involves a process for testing a freelancer's skill by administering a test focused on a particular skill set. The test questions are retrieved from a database, and the sequence diagram will illustrate the flow of this process, including loops for the question-answer sessions and alternatives for handling the outcomes of the test (pass or fail).

    2. Here's a breakdown of the key components and concepts you should consider when creating your sequence diagram:

    3. Actor: Identify the actors involved in the scenario. In this case, there may be two primary actors: the freelancer taking the test and the system administering the test.

    4. Test Initialization: The sequence should begin with the freelancer initiating the test-taking process. This could involve actions such as logging into the system or selecting a specific skill test.

    5. Question Retrieval: Once the test is initiated, the system retrieves the questions from the database. This step involves a loop where each question is presented to the freelancer.

    6. Question-Answer Session: Within the loop, there will be interactions between the system and the freelancer for each question. The system presents a question, and the freelancer provides an answer.

7. Evaluation: After the freelancer answers each question, the system evaluates the response. This step includes checking the correctness of the answer and possibly providing feedback to the freelancer.

8. Outcome Handling: Depending on the outcome of the test (pass or fail), the system will take different paths. If the freelancer passes, they may receive a notification of success and be directed to the next step in the hiring process. If they fail, they may receive feedback on areas for improvement and potentially be allowed to retake the test.

9. Loop Completion: After all questions have been answered and evaluated, the loop for question-answer sessions is completed. The system proceeds to finalize the test results and communicate the overall outcome to the freelancer.

Scenario 2:

1. Scenario 2 involves a bidding system where freelancers can bid on projects. The system includes authentication to ensure that only authorized users can submit bids. Let's break down the key elements for your sequence diagram:

2. Actor Identification: In this scenario, you have two primary actors: the freelancer and the bidding system.

3. Authentication: The sequence should start with the freelancer initiating the bidding process. Before the freelancer can place a bid, the system needs to authenticate the freelancer's identity. This involves the freelancer logging into the system using their credentials.

4. Project Selection: Once authenticated, the freelancer selects a project they want to bid on. This may involve browsing available projects or searching for specific criteria.

5. Bid Submission: After selecting a project, the freelancer submits their bid. This includes specifying the amount they are willing to work for and any additional terms or conditions.

6. Bid Evaluation: Upon receiving the bid, the system evaluates it to ensure it meets any project-specific requirements or constraints. This may involve checking the bid amount against the project budget or verifying that the freelancer meets certain qualifications.
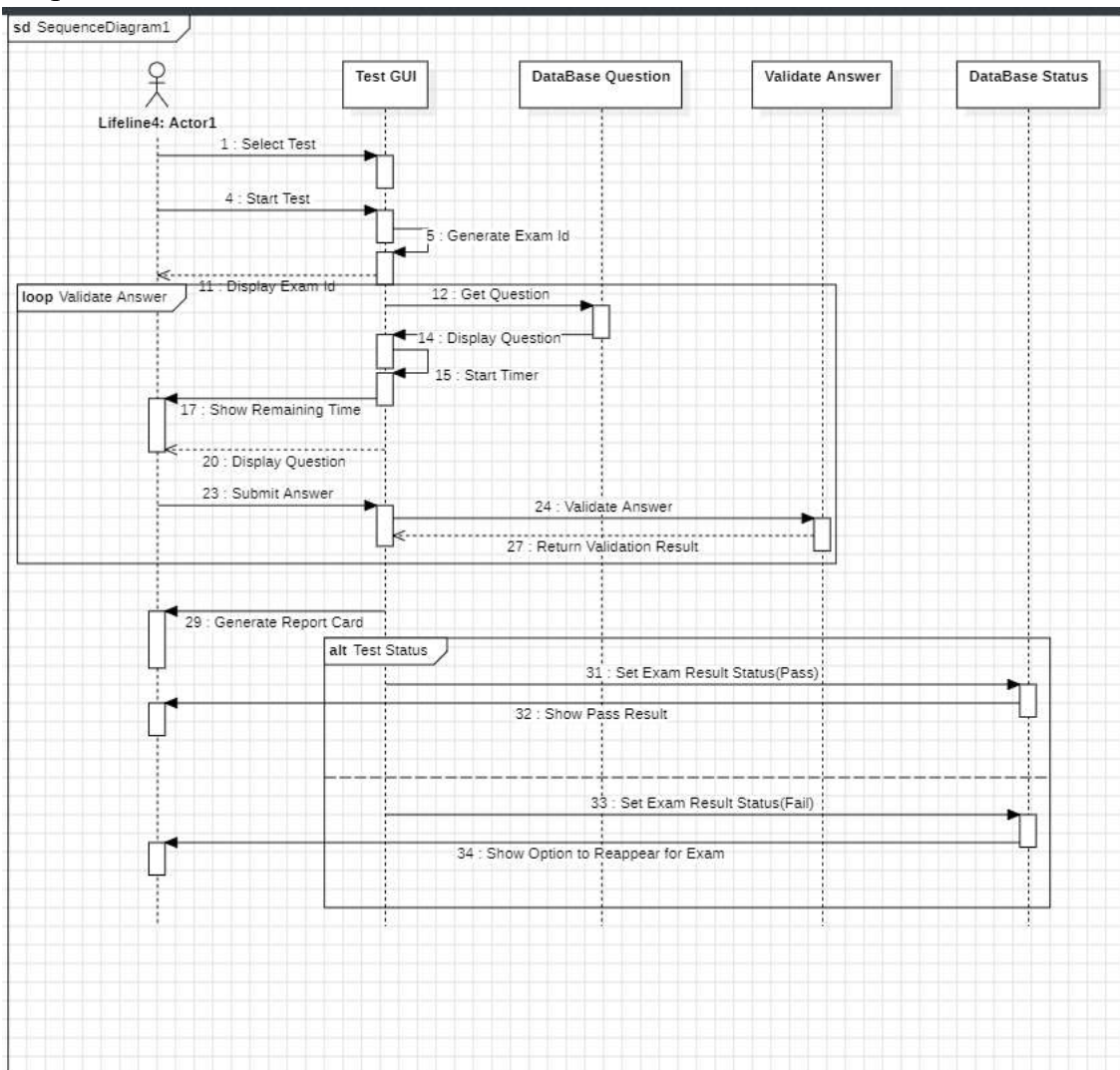
7. Bid Acceptance or Rejection: Based on the evaluation, the system either accepts or rejects the bid. If accepted, the freelancer is notified of their successful bid. If rejected, the freelancer may receive feedback on why their bid was not accepted.

8. Feedback Loop: If the bid is rejected, the sequence may loop back to allow the freelancer to revise their bid and resubmit it for consideration.

9. Finalization: Once a bid is accepted, the system finalizes the bidding process. This may involve updating the project status, notifying other freelancers of the outcome, or initiating the next steps in the project workflow.
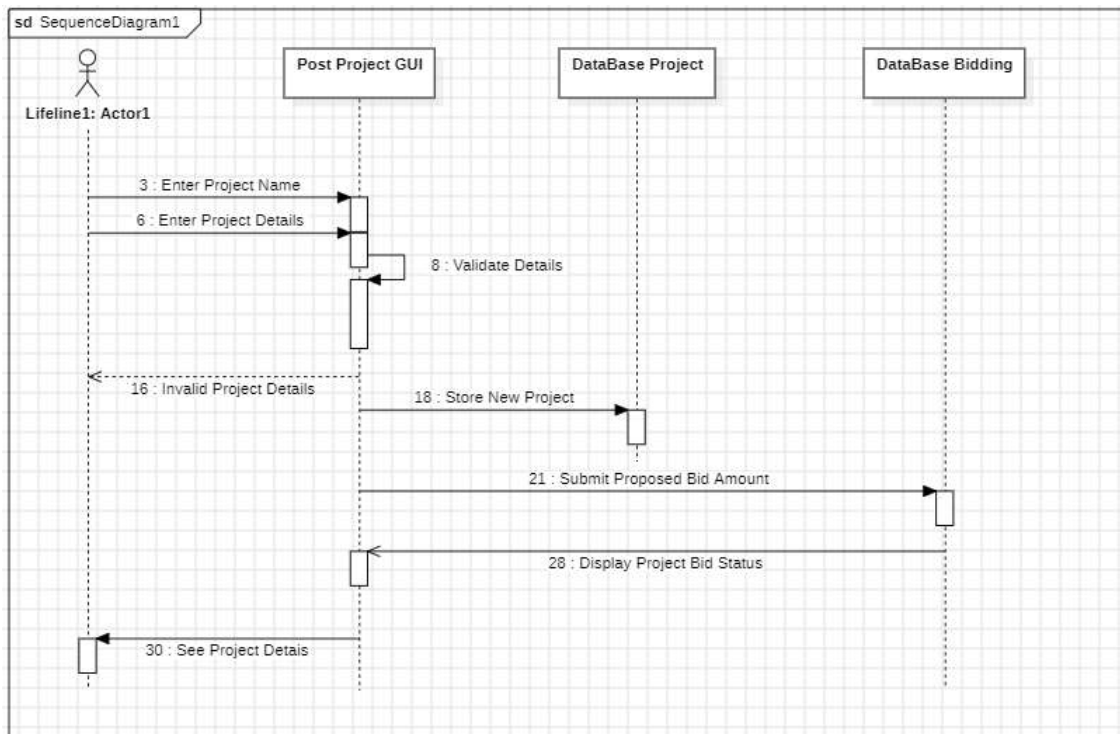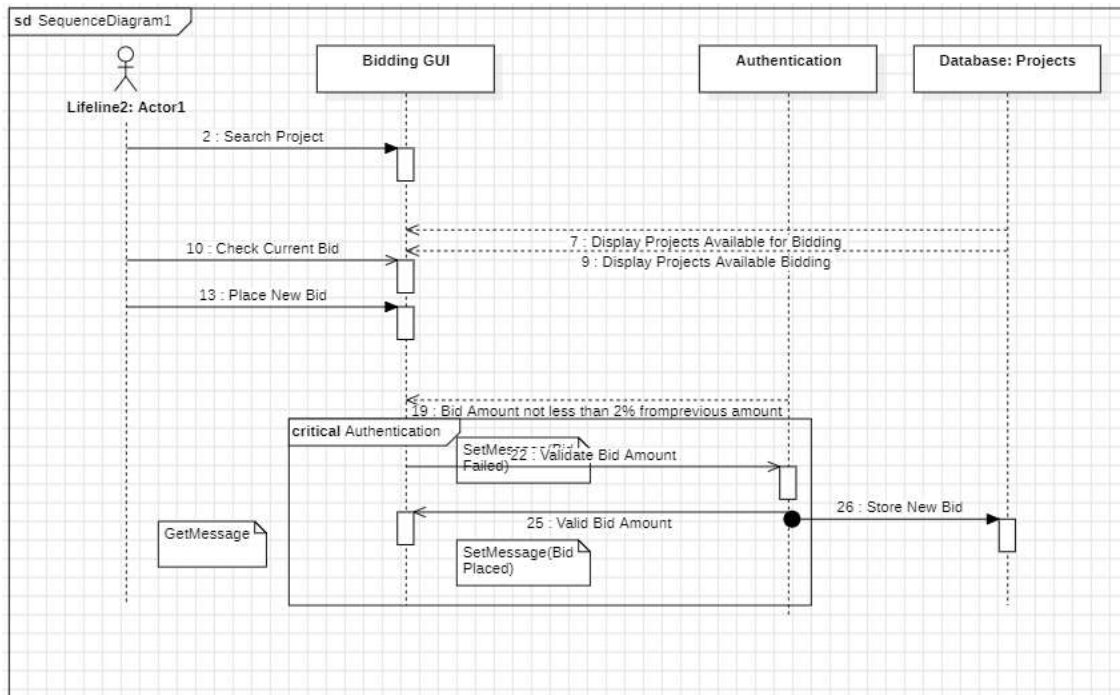
Scenario 3:

1. In Scenario 3, the focus is on the client's submission of a project with an initial bid amount. Let's outline the sequence diagram for this scenario:

2. Actor Identification: The primary actors in this scenario are the client and the bidding system.

3. Project Submission: The sequence starts with the client initiating the project submission process. The client provides details about the project, such as the project description, requirements, and any additional information relevant to the project.

4. Bid Specification: Along with the project details, the client specifies the initial bid amount they are willing to pay for the project. This bid amount is an essential component of the project submission.

5. System Validation: Upon receiving the project submission and bid amount, the bidding system validates the information provided by the client. This may involve checking the completeness of the project details and ensuring that the bid amount meets any minimum requirements set by the system or project guidelines.

6. Bid Posting: Once the project submission is validated, the bidding system posts the project along with the initial bid amount to the platform or marketplace where freelancers can view and bid on it.

7. Freelancer Interaction: Freelancers on the platform have the opportunity to view the posted project and decide whether to bid on it based on the project details and the initial bid amount specified by the client.

8. Bidding Process: Freelancers interested in the project submit their bids, indicating the amount they are willing to work for and any additional terms or conditions they may have. These bids are received by the bidding system.

9. Bid Evaluation: The bidding system evaluates the bids received from freelancers, considering factors such as bid amount, freelancer qualifications, and project fit.
10. Client Review: After a certain period or when a sufficient number of bids have been received, the client reviews the bids and selects the freelancer they want to award the project to. They may take into account factors such as bid amount, freelancer reputation, and proposed project approach.
11. Project Award: The client awards the project to the chosen freelancer, and the bidding system updates the project status accordingly. This may involve notifying the selected freelancer of their successful bid and initiating the project contract or agreement.

Output –

Result: Sequence diagram has been designed and studied.