
Systems Analysis and Design I
Mid Term

Zagazig University
Faculty of Computers and Informatics
Systems Analysis and Design I

3rd Year
Time: 1 hour – Marks: 20
3 Questions in 3 pages

Q(1) [6 Marks] Choose the right answer:

1. The outcome of the analysis phase is the:
   a. Feasibility Analysis document
   b. System proposal document
   c. System specification document
   d. System request document
   e. Business Process document

2. The outcome of the planning phase is the:
   a. Test plan and Feasibility Analysis
   b. System proposal document and Project Plan
   c. Project Plan
   d. System request document and Project Plan
   e. Business Process document

3. Asmaa is calculating whether a system will lower costs or increase revenues. What SDLC phase is it?
   a. Planning
   b. Analysis
   c. Design
   d. Implementation
   e. Evaluation

4. Ahmed is a systems analyst. Which of the follow people might be the most valuable to him in developing a use case for an accounts payable system upgrade?
   a. Galal, a software vendor for Peachtree Accounting Software
   b. Mariem, a team manager in the accounts payable department
   c. Lamyaa, the project manager for the project
   d. Said, a fellow analyst who is more experienced in making use cases
   e. Bilal, a Java programmer in the applications development area.

5. Becky is a systems analyst for Laswell Consulting. She is attending a three day intensive workshop on developing applications in php. What systems analyst skill is she working on?
   a. Technical
   b. Business
   c. Analytical
   d. Interpersonal
   e. Ethical

6. Which is NOT a purpose of the requirements definition?
   a. To give a very high-level explanation of the business requirements
   b. A more precise list of requirements that can be used as inputs to the rest of analysis
   c. Create functional requirements
   d. Create cost/benefit analysis
   e. Create non-functional requirements

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7. An example of a functional requirement is _____
   a. Access to the customer order system
   b. System should be available in English and Spanish
   c. System can be accessed through a Blackberry device
   d. Output can be displayed in Internet Explorer, in Firefox, or in Google Chrome browsers
   e. System is automatically updated every 5 seconds

8. An example of a nonfunctional requirement is _____
   a. Supplier table is available
   b. The system must contain customer order history for three years
   c. System can be used in any of 100 offices worldwide
   d. SQL queries from customer table and order table are available
   e. Customer zipcode is formatted as character data

9. Which is NOT a requirements analysis strategy?
   a. Understanding of the as-is system
   b. Identifying improvements
   c. Developing requirements for the to-be system
   d. Root cause analysis
   e. Understanding of screen design, layout and navigation

10. Mai, a systems analyst, is preparing a closed wiki site for Sharkia Bank. He has written permission from eight other companies to view their internal wiki sites, and also has approval from his manager and the project team to use these other sites for ideas and structure. This would be a form of:
    a. Business Process Automation
    b. Business Process Improvement
    c. Informal Benchmarking
    d. Formal Benchmarking
    e. Technology Analysis

11. Kamal is interviewing Mohamed. He first explains why he is there and what he wants to accomplish in the interview. This would be done in which step of the interview process?
    a. Selecting interviewees
    b. Designing interview questions
    c. Preparing for the interview
    d. Conducting the interview
    e. Post-interview follow-up

12. Mary wants to collect facts and opinions from a wide range of geographically dispersed people quickly and with the least expense. She would probably want to use:
    a. Document analysis
    b. Interview
    c. JAD session
    d. Observation
    e. Questionnaires

Q(2) [6 Marks] Choose the best methodology describing the given systems.

V-Model	JAD	Parallel Approach	Waterfall
Throwaway prototyping	**Iterative Development**	**RAD**	**eXtreme Programming**

1) A system project with: clear requirements; very familiar technologies; not all that complex; reasonably reliable; a very long time schedule and the schedule visibility is not important? **Waterfall**
2) A system project with: clear requirements; very familiar technologies; not all that complex; reasonably reliable; a short time schedule and the schedule visibility is not important? **Parallel Approach**
3) A system project with: clear requirements; very familiar technologies; not all that complex; must be reliable; a special focus on testing; a somewhat longer schedule and schedule visibility is not important? **V-Model**
4) A system project with: somewhat unclear requirements; somewhat unfamiliar technologies; that is complex; reasonably reliable; a short time schedule and high schedule visibility? **Iterative Development**
5) A system project with: unclear requirements; very familiar technologies; not all that complex; reasonably reliable; a short time schedule and the schedule visibility is somewhat important? **eXtreme Programming**
6) A system project with: unclear user requirements; unfamiliar technologies; very complex; must be reliable; a short to medium time schedule and the schedule visibility is somewhat important? **Throwaway prototyping**

Q(3) [8 Marks] Use Case Model

The DeltaStar Hotel's website allows potential guests to make a room reservation, specifying the dates and type of room. If they have registered with the website previously their stored details are used to speed up the process, otherwise they are required to register as a new customer.

Each reservation is given a unique reservation code. Before the date of their stay they may enter this reservation code into the website to amend or cancel the reservation. Amendments can include altering the dates, changing the room type or the number of guests in each room.

When the guests arrive at the hotel the reservation id is used by the receptionist to quickly find the reservation to check them in with.

At the end of their stay the receptionist checks the guests out, at this point the hotel system validates their payment through the card payment system; a printed invoice may be requested by the guest at this point.

The hotel has many room types available, each with a room-type name, number of guests and additional facility information. Each room in the hotel has a room number and is of one specific type.

A. **Draw a Use Case diagram showing the necessary associations for the above scenario.**
B. **Construct one use case narrative table.**

Best Wishes,

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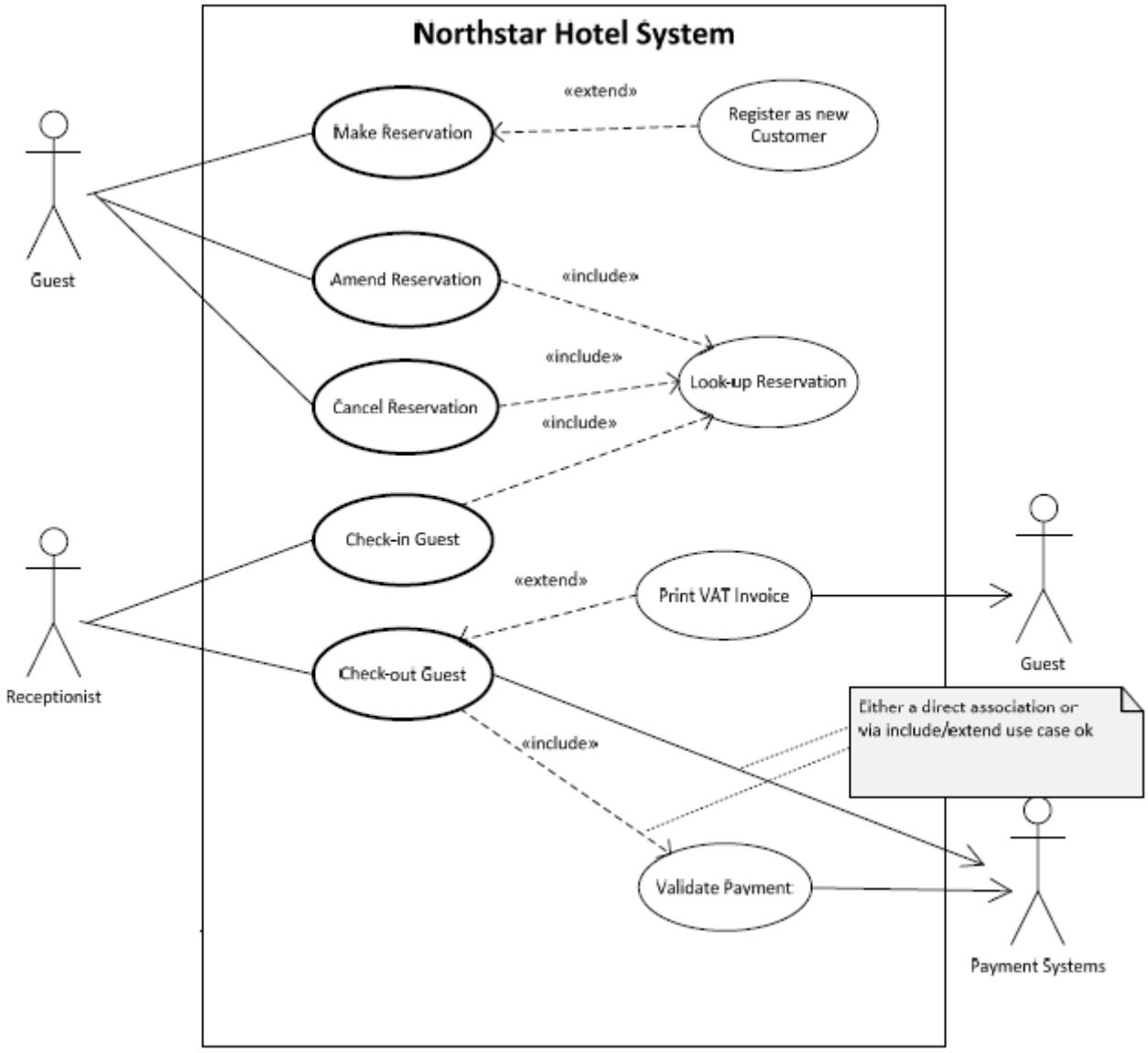
A. Draw **a Use Case diagram** showing the necessary associations.



Actors –1 mark
Use Cases –1 mark
Associations –1 mark

B. Construct **one use case** narrative table.
(Mark the use of right items: Use case name, priority, actor, trigger, precondition, …etc).

Use Case Name: Request a chemical	ID: UC-2	Priority: High

Actor: Lawn Chemical Applicator (LCA)

Description: The Lawn Chemical Applicator (LCA) specifies the lawn chemical needed for a job by entering its name or ID number. The system satisfies the request by reserving the quantity requested or the quantity available and notifying the Chemical Supply Warehouse of the pick-up.

Trigger: A Lawn Chemical Applicator (LCA) needs a chemical for a job.

Type: ☑ External ☐ Temporal

Preconditions:

1. The LCA identity is authenticated.
2. The LCA has necessary training and credentials on file.
3. The Chemical Supply datastore is up-to-date and on-line.

Normal Course:		Information for Steps:
1.0 Request a lawn chemical from the chemical supply warehouse.		
1. The LCA specifies the desired lawn chemical	←	Chemical name or ID
2. The system verifies the chemical is approved for usage	←	List of approved chemicals
3. The system displays the quantity of the lawn chemical on hand	←	Quantity on hand
4. The LCA specifies the quantity needed	←	Quantity needed
5. The system asks the LCA to confirm the request for the quantity needed or the quantity available (Alternative Course 1.1)	←	Request confirmation
6. The system gives the LCA a Chemical Pick-up Authorization for the quantity requested	→	Chemical Pick-up Authorization
7. The system notifies the Chemical Supply Warehouse of the chemical pick-up	→	Chemical Pick-up Notice
8. The system stores the Lawn Chemical Request in the Chemical Request datastore	→	Lawn Chemical Request
Alternative Courses:		
1.1 Quantity available is less than quantity needed (branch at step 5)		
1. The system asks the LCA if he wants the quantity available or to cancel the request		
2a. The LCA asks to take the quantity available	←	Request quantity available
3a. The system changes the quantity requested to the quantity available		
4a. The system gives the LCA a Chemical Pick-up-Authorization for the quantity available	→	Chemical Pick-up Authorization
5a. The system notifies the Chemical Supply Warehouse of the chemical pick-up	→	Chemical Pick-up Notice
6a. The system stores the Lawn Chemical Request in the Chemical Management System	→	Lawn Chemical Request
7a. The system notifies Purchasing of the chemical outage	→	Chemical Outage Notice
2b. The LCA asks to cancel the request	←	Cancellation
3b. The system terminates the use case		

Postconditions:

1. The Lawn Chemical Request is stored in the Chemical Management System.
2. The Chemical Pick-up Authorization is produced for the LCA.
3. The Chemical Supply Warehouse is notified of the chemical pick-up.
4. Purchasing is notified of chemical outage.

Exceptions:

E1: Chemical is no longer approved for use (occure at step 2)

1. The system displays message. "That chemical is no longer approved for use"
2. The system asks the LCA if he wants to request another chemical or to exit
3a The LCA asks to request another chemical
4a. The system starts Normal Course again
3b. The LCA asks to exit
4b. The system terminates the use case

Summary

Inputs	Source	Outputs	Destination
Chemical name or ID	LCA	Chemical Pick-up Authorization	LCA
List of approved chemicals	Lawn Chemicals Supply datastore	Chemical Pick-up Notice	Chemical Supply Warehouse
Chemical quantity on hand	Lawn Chemicals Supply datastore	Lawn Chemical Request	Chemical Request datastore
Quantity needed	LCA	Chemical Outage Notice	Purchasing
Request confirmation	LCA		
Request quantity available or cancellation	LCA		