



National University of Computer & Emerging Sciences, Karachi

Midterm – I (Spring-2023)

2nd March 2023, 08:30 AM – 09:30 AM



Course Code: CS3009	Course Name: Software Engineering
Instructor Name: Hajra Ahmed, Dr. Syed Moazzam Ali Shah, Noreen Fatima	
Student Roll No:	Section No:

Instructions:

- Return the question paper and make sure to keep it inside your answer sheet.
- Read each question completely before answering it. There are 3 questions and 2 pages.
- In case of any ambiguity, you may make assumption. But your assumption should not contradict any statement in the question paper.
- You are not allowed to write anything on the question paper (except your ID and section).

Time: 60 minutes.

Max Marks: 15 Points

Questions 1:

[CLO-2][pt-3+1+1]

Read the scenario given below, and do the following:

- a) Write a set of functional & non-functional requirements for the health club membership system.
- b) Do you find any ambiguities or omissions statement? If yes, mention any one of them.
- c) Why requirements do changes so much? After all, don't people know what they want? Justify the statement with an example.

When members join the health club, they pay a fee for a certain length of time. The club wants to mail out reminder letters to members asking them to renew their memberships one month before their memberships expire. About half of the members do not renew their memberships. These members are sent follow-up surveys to complete about why they decided not to renew so that the club can learn how to increase retention. If the member did not renew because of cost, a special discount is offered to that customer. Typically, 25 percent of accounts are reactivated because of this offer. Every time a member enters the club, an attendant takes his or her card and scans it to make sure the person is an active member. If the member is not active, the system presents the amount of money it costs to renew the membership. The customer is given the chance to pay the fee and use the club, and the system makes note of the reactivation of the account so that special attention can be given to this customer when the next round of renewal notices is dispensed.

Questions 2:

[CLO-3][pt- 3+2]

- a) ABC Co. is an organization that designs Smart Gadgets to make life easier. They are said to be the pioneers of Smart fit bands and Smart Air Purifiers. They have an organized working Environment having proper teams for different kinds of projects that provide smart home solutions. At what level of Capability Maturity Model is ABC Co. operating. Give valid reasons for your answer.
- b) Why Test first development approach is used for requirements' validation?

Questions 3:**[CLO-4][pt-05]**

For creating a Chat Application, A list of activities having different tasks are formulated and on the basis of that, project estimation using Wide Band Delphi technique is done. Three estimators took part in the estimation process, shown in Chart given below. Below are the estimation forms deduced from the kickoff meetings. The numbers in the tables depicts the effort estimation in terms of days required for each activity.

Member: Salas	Round 1	Round 2	Round 3
Create UI	3	3	3
Create groups	3	3	4
Send message	6	6	6
Receive message	3	3	3
Add member in groups	5	2	2

Member: Aliya	Round 1	Round 2	Round 3
Create UI	4	4	4
Create groups	6	5	5
Send message	2	5	5
Receive message	3	3	3
Add member in groups	1	1	2

Member: Ahmed	Round 1	Round 2	Round 3
Create UI	7	7	7
Create groups	8	3	3
Send message	7	6	5
Receive message	2	2	3
Add member in groups	5	2	2

For the above data, do the following:

- a) Show how the meeting progressed by drawing a single result graph that represents cumulative estimation for the three members.
- b) Create the effort estimation Sheet showing all best, worst and average cases for Round 1 only.