ADVANCED SOFTWARE ENGINEERING

IT 561

INSEM 1

Take - away examination

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PART A

[Q.1] Considering the given problem description of the NYU Market-Driven system, identify the stakeholders and end-users of the system. What kind of elicitation techniques will you apply to gather requirements from different stakeholders? Justify why and how the chosen elicitation techniques are helpful in gathering the requirements?

Stakeholder and end-users of the system:

Stakeholders	End users
[1] Insurance company [NYU] [2] Retinodes Software Company [3] Insurance Agent [4] Regulatory Team [5] Marketing Team [6] Insurance Analyst	[1] Customer [2] Agent [3] Analyst

Elicitation Techniques:

	Elicitation Techniques	Why is it helpful?	How is it applied?
1	Document analysis	Provides an overview of insurance policies, packages and regulations.	Review materials of existing documents.
2	Brainstorm	Helps to explore an individual's point of views, new possibilities and creativity.	A group of people generates ideas.
3	Observation	Helps to understand real life work-flow and challenges.	Observes the real needs of users.
4	Use case Scenarios	It gives an idea of the user's perspective for system functionalities.	It develops stories about how users are going to interact with the system.
5	Surveys	Helps to collect large scale feedback	Gather responses from potential customers on preferred insurance package features.
6	Interviews	Good for exploring complex issues and getting individual	One-on-one conversations with stakeholders to

		viewpoints.	understand their needs and perspectives in detail.

[Q.2] Enlist all functionalities of the NYU Market-Driven system by each user of the system, in the form of user stories (both front and back of the card).

a. Prioritize them (using the requirement prioritization techniques, e.g., AHP, Numerical Assessment, MoSCoW method, etc.), keeping priorities of non-functional aspects into consideration? How? Provide details.

	Front of the Card	Back of the card
1	As a customer, I want to view available packages in a certain range so that I can compare and select the best option.	1. Success - Display available packages with price and details. 2. Failure - Show "No packages available" if data fails to load. a. "Search credentials do not meet"
2	As a customer, I want to create my own insurance package so that I can personalize my coverage to the specific needs and budget.	1. Success - Custom package created and submitted for review. a. System allows users to select and compare various options and adjust limits. b. System calculates estimated cost. c. Customer submits the package for review. d. Customer receivers confirmation email. 2. Failure - Custom package creation fails a. Invalid coverage - system displays error message if selected options are inapplicable. b. Calculation error - System displays error message "Price calculation error, please try again". c. Submission error - System displays an error message "An error occurred while submitting the package, please try again.
3	As a customer, I want the system to	1. Success - System analyzes

	suggest improvements to my custom package so that I can get the best coverage at a competitive price.	selections and suggests improvements. a. Recommends alternate packages that offer better value. b. Adds and removes specific coverage options. c. Adjust coverage limits. d. System informs the customer that there is no specific suggestion at this time. 2. Failure - No suggestions a. System encounters an error while analyzing a custom package. b. System determines there are no similar packages to suggest. c. System cannot generate suggestions due to lack of data.
4	As an insurance agent, I want to access and manage my customer's policy document so that I can provide information and suggestions.	1. Success - Document retrieved. a. Agent searches for the customer. b. System displays available documents of the customer. c. Agent can view the document. 2. Failure - Document not found. a. Agent searches a specific document, which is not available. b. Customer's data is not found.
5	As an Insurance agent, I want to review customer package requests so that I can approve, reject or modify them.	1. Success - System displays pending request. a. Agent verifies the package with policies and regulations. 1) Approve a) Agent approves the package. b) System generates the policy document and sends it to the customer. 2) Modify a) Agent identifies that area where packages need to be

		modified. b) Agent modifies the package by customer's approval, ensuring it follows the norms and regulations. c) System notifies the customer of changes and requests for confirmation. d) On customer's confirmation, the package is approved. 3) Reject a) Agent identifies issues that prevent approval. b) Agent rejects the package. c) System notify customer and allow modification and resubmit. Failure - Review custom packages fails a. System encounters errors while loading the package data. b. Customer's request contains incomplete or invalid data.
6	As an insurance agent, I want to update previously made packages so that they remain competitive.	1. Success - Agent modifies package details in the system a. Adds or removes coverage options. b. Adjust limits ad prices c. Update eligibility criteria d. System validates the changes and approves. e. System notify relevant personnels about the update. 2. Failure - Modification fails a. Validation error - Agent tries to update the package with invalid information. b. System error - system encounters error during update of the package.
7	As admin, I want to analyze competitor packages so that we can offer better insurance options.	1. Success - Competitor's data retrieved and displays a. Admin can specify criteria for package analysis. b. System retrieves data, and may offer visualization tools

		also. c. System displays data. 2. Failure - Data retrieval error a. System fails to retrieve competitor's data. b. Data quality issue - The available data of competitors is incomplete or inaccurate. c. Data privacy - System adheres to privacy regulations and legal requirements.
8	As a customer, I want to pay for my insurance package online, so that I can activate my package instantly.	1. Success - Payment proceeds. a. Customer enters payment details. b. System validates the information. c. System processes the payment. d. On successful payment, the system activates the insurance coverage and notify users. 2. Failure - Payment Declined a. Payment process error - System fails to process payment. b. Invalid payment details - system finds invalid details. c. Security issue - System detects security issue while payment process.

Requirement prioritization using MoSCoW :

Feature	Priority	Reason
Customize and submit insurance packages	M - Must have	Essential for providing flexibility to create custom packages.
View and compare insurance packages	M - Must have	Essential for competitors' market-driven functionality.
System generates package suggestions	S - Should have	Improves user experience but not the critical functionality.

Competitors package analysis	S - Should have	Helps NYU to remain competitive.
Agent recommendation	C - Could have	Useful to improve the package.
Customer history review	W - Would have	No need to review the history, only the current package would affect.

[Q.3] Identify three different EPICs (or collection of user stories) where the conflicts between the requirements occur? Do you think that the conflicts can be resolved? How?

[1] Custom insurance packages Vs. Competitive pricing
Conflict : Customers want to create their own package with flexibility, they might want maximum coverage at lowest price, but NYU wants to offer competitive pricing without excessive loss.

Resolve approach : Implement customizable templates with limits and define strict rules for policy combination to maintain profitability on both sides, user and company.

[2] Automated analysis Vs. Agent review
Conflict : Customers expect instant automated approvals, which are based on AI models and databases, while Agents prefer manual review based on their experience and knowledge.

Resolve approach : Use AI for initial level filtering, but let agents handle the complex level cases.

[3] System suggestions Vs. Customer preference
Conflict : System might suggest removing coverage to reduce cost, but customers may want maximum security. Similarly, the system might suggest adding packages for more coverage, but customers may not afford it.

Resolve : Offers multiple recommendation levels.