**Milestone 3**

Spring 2025

**DBMS Lab Project SQL Implementation**



**CSE-403L Database Management System Lab**

**Spring 2025**

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“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Submitted to:

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**1. Introduction**

The Insurance and Claim Management System is developed to streamline insurance-related processes, including policy registration, premium tracking, beneficiary handling, renewal management, and claims processing. This document outlines the complete database design, including entities, attributes, relationships, metadata, constraints, keys, and relational integrity.

**2. Entities (Tables)**

* User
* Agent
* Policy
* Claim
* Beneficiary
* Renewals
* Premiums
* Feedback
* Payment

**3. Table Structures and Metadata**

**Table: User**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| user\_id | INT | PRIMARY KEY, NOT NULL |
| name | VARCHAR(50) | NOT NULL |
| phone | VARCHAR(15) | NOT NULL |
| email | VARCHAR(50) | UNIQUE, NOT NULL |
| status | VARCHAR(20) | CHECK (status IN ('Active','Inactive')) |

**Table: Agent**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| agent\_id | INT | PRIMARY KEY, NOT NULL |
| name | VARCHAR(50) | NOT NULL |
| phone | VARCHAR(15) |  |
| email | VARCHAR(50) |  |

**Table: Policy**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| policy\_id | INT | PRIMARY KEY, NOT NULL |
| policy\_name | VARCHAR(50) | NOT NULL |
| start | DATE | NOT NULL |
| end | DATE | NOT NULL |
| user\_id | INT | FOREIGN KEY REFERENCES User(user\_id) |
| agent\_id | INT | FOREIGN KEY REFERENCES Agent(agent\_id) |

**Table: Claim**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| claim\_id | INT | PRIMARY KEY, NOT NULL |
| policy\_id | INT | FOREIGN KEY REFERENCES Policy(policy\_id) |
| date | DATE | NOT NULL |
| amount | DECIMAL(10,2) | NOT NULL |
| status | VARCHAR(20) | CHECK (status IN ('Pending','Approved','Rejected')) |

**Table: Beneficiary**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| BN\_id | INT | PRIMARY KEY, NOT NULL |
| policy\_id | INT | FOREIGN KEY REFERENCES Policy(policy\_id) |
| name | VARCHAR(50) | NOT NULL |
| relation | VARCHAR(30) | NOT NULL |

**Table: Renewals**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| RN\_id | INT | PRIMARY KEY, NOT NULL |
| policy\_id | INT | FOREIGN KEY REFERENCES Policy(policy\_id) |
| date | DATE | NOT NULL |
| amount | DECIMAL(10,2) | NOT NULL |
| status | VARCHAR(20) | CHECK (status IN ('Paid','Pending')) |

**Table: Premiums**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| premium\_id | INT | PRIMARY KEY, NOT NULL |
| policy\_id | INT | FOREIGN KEY REFERENCES Policy(policy\_id) |
| due\_date | DATE | NOT NULL |
| paid\_date | DATE |  |
| amount | DECIMAL(10,2) | NOT NULL |

**Table: Feedback**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| feedback\_id | INT | PRIMARY KEY, NOT NULL |
| user\_id | INT | FOREIGN KEY REFERENCES User(user\_id) |
| date | DATE | NOT NULL |
| rating | INT | CHECK (rating BETWEEN 1 AND 5) |
| message | TEXT |  |

**Table: Payment**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| payment\_id | INT | PRIMARY KEY, NOT NULL |
| user\_id | INT | FOREIGN KEY REFERENCES User(user\_id) |
| amount | DECIMAL(10,2) | NOT NULL |
| date | DATE | NOT NULL |
| method | VARCHAR(30) | CHECK (method IN ('Cash','Card','Online')) NOT NULL |

**4. Keys and Relationships**

**Primary Keys**

* user\_id for User
* agent\_id for Agent
* policy\_id for Policy
* claim\_id for Claim
* BN\_id for Beneficiary
* RN\_id for Renewals
* premium\_id for Premiums
* feedback\_id for Feedback
* payment\_id for Payment

**Foreign Keys**

* policy.user\_id → User(user\_id)
* policy.agent\_id → Agent(agent\_id)
* claim.policy\_id → Policy(policy\_id)
* beneficiary.policy\_id → Policy(policy\_id)
* renewals.policy\_id → Policy(policy\_id)
* premium.policy\_id → Policy(policy\_id)
* feedback.user\_id → User(user\_id)
* payment.user\_id → User(user\_id)

**Relationships**

* One User → Many Policies 1:N
* One Agent → Many Policies 1:N
* One Policy → Many Claims 1:N
* One Policy → Many Premiums 1:N
* One Policy → Many Beneficiaries 1:N
* One Policy → Many Renewals 1:N
* One User → Many Payments 1:N
* One User → Many Feedbacks 1:N

**5. Sample Data:**









