REVIEW II

I. Architecture & Design of the Project

Model
- Encapsulates application state
- Responds to state queries
- Exposes application functionality
- Notifies views of changes

State Query

Change Notification

State Change

View
- Renders the models
- Requests updates from models
- Sends user gestures to controller
- Allows controller to select view

View Selection

Controller
- Defines application behavior
- Maps user actions to model updates
- Selects view for response
- Uses one for each functionality

User Gestures

→ Method Invocations

⇨ Events

Architecture of the Project

1. Presentation Tier:

Is the tier in which the users interact with application. Presentation Tier contents Model, View, Controller used to receive a request and response to User.

<u>Technology</u>: ReactJs, SCSS, JavaScript, Axios, Bootstrap

2. Business Logic Tier:

Is mainly working as the bridge between Data Tier and Presentation Tier. All the Data passes through the Business Tier before passing to the Presentation Tier.

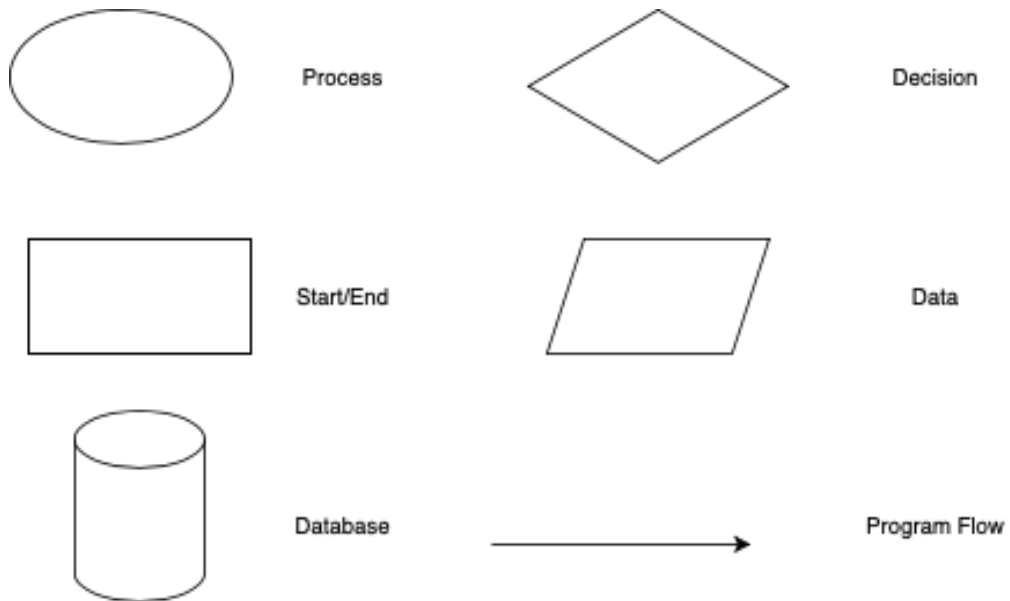<u>Technology</u>: ASP.NET Core 3.1.10 MVC

3. Data Access Tier:

Is basically the server which stores all the application's data . Data tier contents Database Tables, Database Views and other means of storing Application Data .
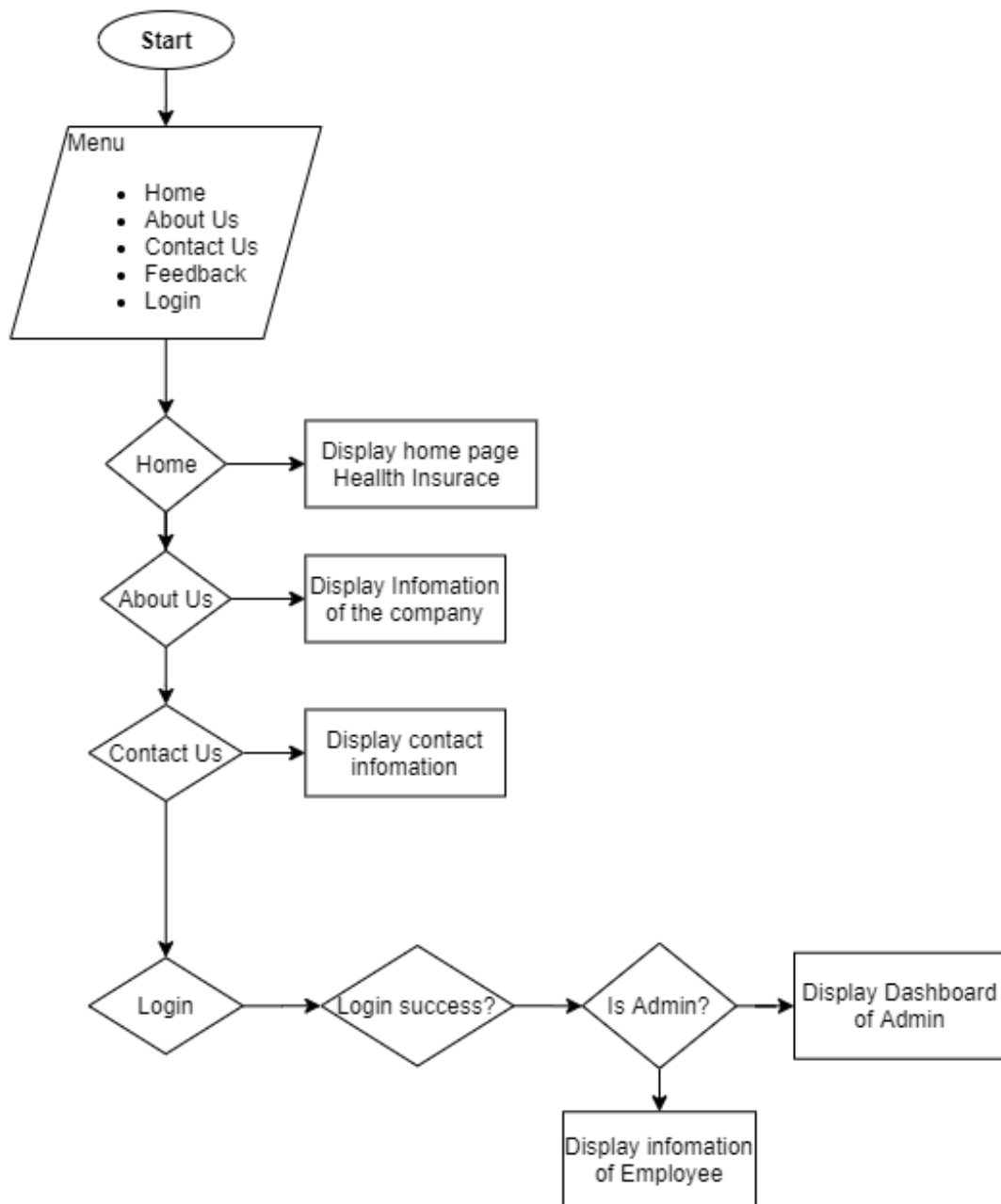
<u>Technology</u>: SQL Server, LINQ
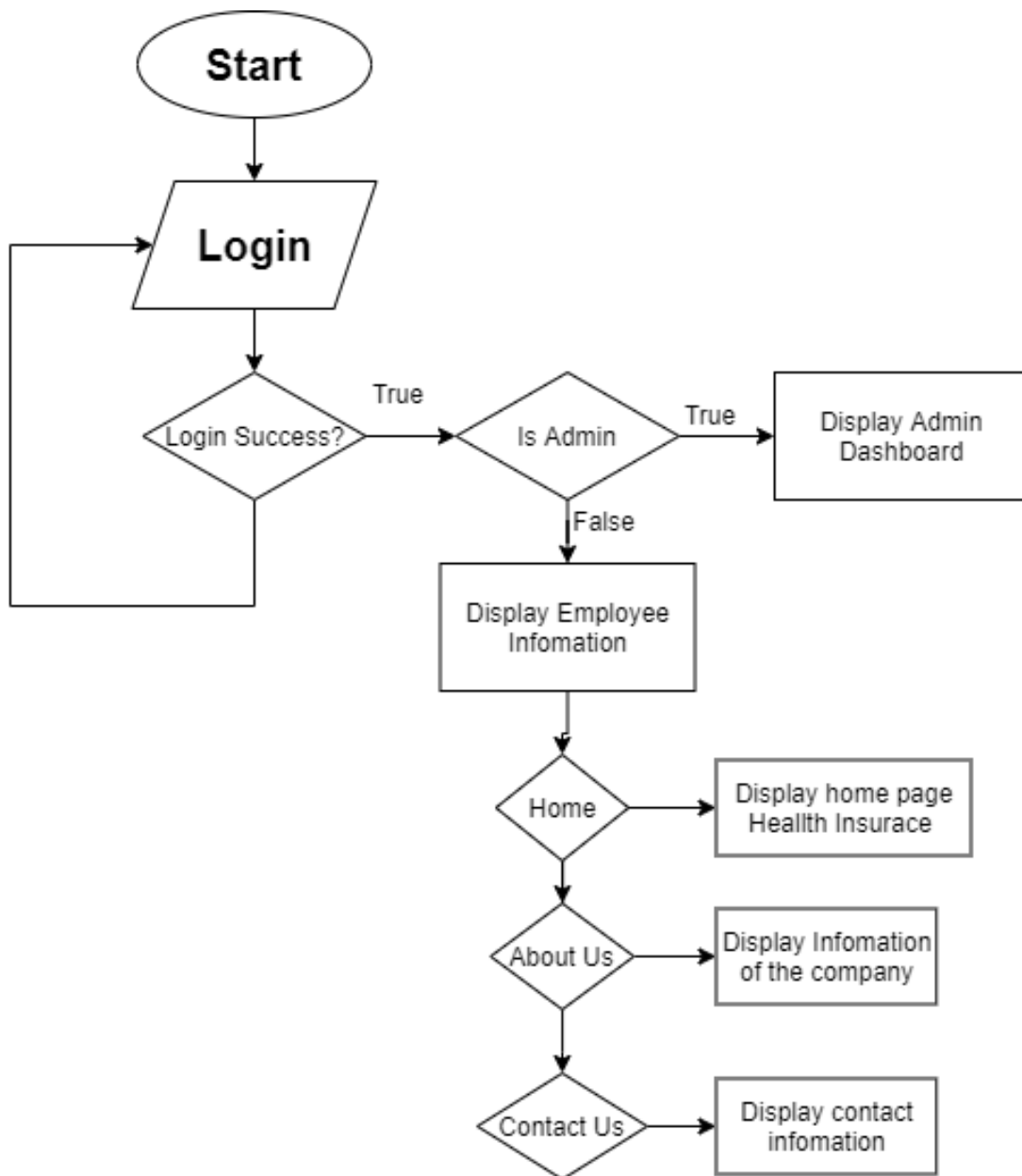
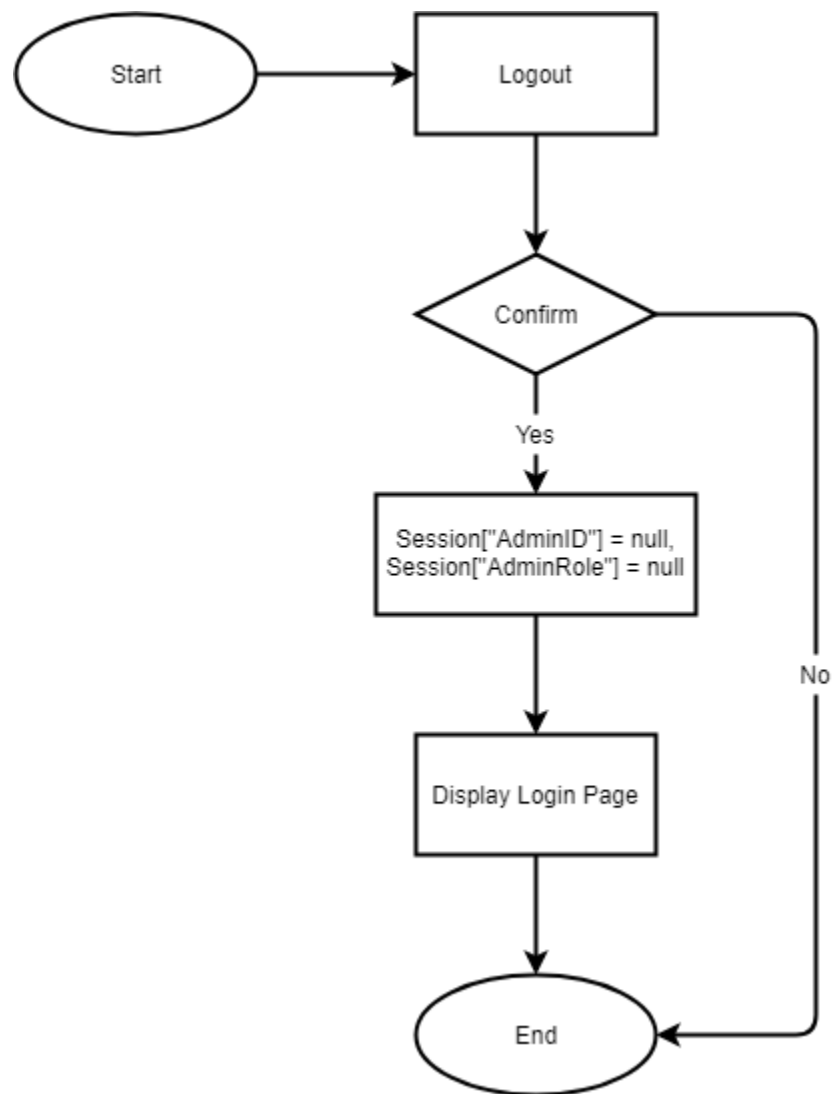# II. Algorithms - Data Flowchart

Symbol generates:

Process	Decision
Start/End	Data
Database	Program Flow

1. Main data flow for guest

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         │
                         ▼
        ╱Menu                      ╱
       ╱                          ╱
      ╱   • Home                 ╱
     ╱    • About Us            ╱
    ╱     • Contact Us         ╱
   ╱      • Feedback          ╱
  ╱       • Login            ╱
 ╱─────────────────────────╱
                         │
                         ▼
                      ◇Home◇ ────────►  ┌──────────────────┐
                         │               │ Display home page│
                         ▼               │ Heallth Insurace │
                   ◇About Us◇ ─────────► └──────────────────┘
                         │               ┌──────────────────┐
                         ▼               │ Display Infomation│
                  ◇Contact Us◇ ────────► │  of the company  │
                         │               └──────────────────┘
                         ▼               ┌──────────────────┐
                      ◇Login◇            │ Display contact  │
                                         │    infomation    │
                                         └──────────────────┘
```

Login ◇ ──► ◇ Login success? ◇ ──► ◇ Is Admin? ◇ ──► Display Dashboard of Admin

Is Admin? ──► Display infomation of Employee

2. Login Function

```
                    ┌─────────┐
                   (  Start   )
                    └────┬────┘
                         │
                         ▼
                    ╱─────────╲
                   ╱   Login   ╲
                   ╲           ╱
                    ╲─────────╱
                         │
                         ▼
                    ◇─────────◇      True      ◇─────────◇    True    ┌──────────────┐
                    ◇Login     ◇ ──────────▶  ◇ Is Admin ◇ ────────▶ │ Display Admin │
                    ◇Success?  ◇               ◇          ◇           │  Dashboard    │
                    ◇─────────◇                ◇─────────◇            └──────────────┘
                                                    │
                                                    │ False
                                                    ▼
                                            ┌──────────────┐
                                            │Display Employee│
                                            │  Infomation    │
                                            └──────┬─────────┘
                                                   │
                                                   ▼
                                              ◇───────◇         ┌──────────────────┐
                                              ◇ Home  ◇ ──────▶ │ Display home page │
                                              ◇───────◇         │ Heallth Insurace  │
                                                   │            └──────────────────┘
                                                   ▼
                                              ◇────────◇        ┌──────────────────┐
                                              ◇About Us◇ ─────▶ │ Display Infomation│
                                              ◇────────◇        │  of the company   │
                                                   │            └──────────────────┘
                                                   ▼
                                             ◇──────────◇       ┌──────────────────┐
                                             ◇Contact Us◇ ────▶ │ Display contact  │
                                             ◇──────────◇       │  infomation      │
                                                                └──────────────────┘
```

3. Logout Function

```
    ( Start )  ──────▶  [ Logout ]
                             │
                             ▼
                        ◇ Confirm ◇ ───────────── No
                             │                      │
                            Yes                     │
                             │                      │
                             ▼                      │
            [ Session["AdminID"] = null,            │
              Session["AdminRole"] = null ]         │
                             │                      │
                             ▼                      │
                  [ Display Login Page ]            │
                             │                      │
                             ▼                      │
                         ( End ) ◀──────────────────┘
```

4. Insert Data Function (Admin only)

```
    ╭───────╮          ┌──────────┐
    │ Start │─────────▶│ Login in │◀──────────────┐
    ╰───────╯          └──────────┘               │
                            │              ┌───────────────┐
                            │              │ Show invalid  │
                            │              │ input message │
                            ▼              └───────────────┘
                        ◇ Is Admin ? ◇──── False ───▲
                            │
                           True
                            │
                            ▼
                     ┌────────────┐
              ┌─────▶│ Input a data │◀────────────┐
              │      └────────────┘               │
              │            │              ┌───────────────┐
              │          Submit           │ Show invalid  │
              │            │              │ input message │
              │            ▼              └───────────────┘
              │        ◇ Validation ◇──── False ───▲
              │            │
              │           True
              │            │
              │            ▼
              │     ┌──────────────────┐
              │     │ Save date employee │
              │     └──────────────────┘
              │            │
              │            ▼
              │        ╭─────────╮
              │        │Database │──────▶ ╭─────╮
              │        ╰─────────╯        │ End │
              │                           ╰─────╯
```

Start → Login in

Is Admin ? — False → Show invalid input message → Login in

Is Admin ? — True → Input a data

Input a data — Submit → Validation

Validation — False → Show invalid input message → Input a data

Validation — True → Save date employee → Database → End

5. Update Data Function (Admin only)

6. Delete Data Function (Admin only)

```
   ┌─────────┐              ┌──────────────────┐
   │  Start  │─────────────▶│  Select object to│◀──────┐
   │         │              │     delete       │       │
   └─────────┘              └──────────────────┘       │
                                     │                  │
                                     ▼                  │
                            ┌──────────────────┐        │
                            │      Delete      │        │
                            │                  │        │
                            └──────────────────┘        │ False
                                     │                  │
                                     ▼                  │
                                  ◇ Confirm ◇───────────┘
                                     │
                                     ▼
                            ┌──────────────────┐
                            │    Save Date     │
                            └──────────────────┘
                                     │
                                     ▼
                                ┌─────────┐        ┌─────────┐
                                │ Database│───────▶│   End   │
                                └─────────┘        └─────────┘
```
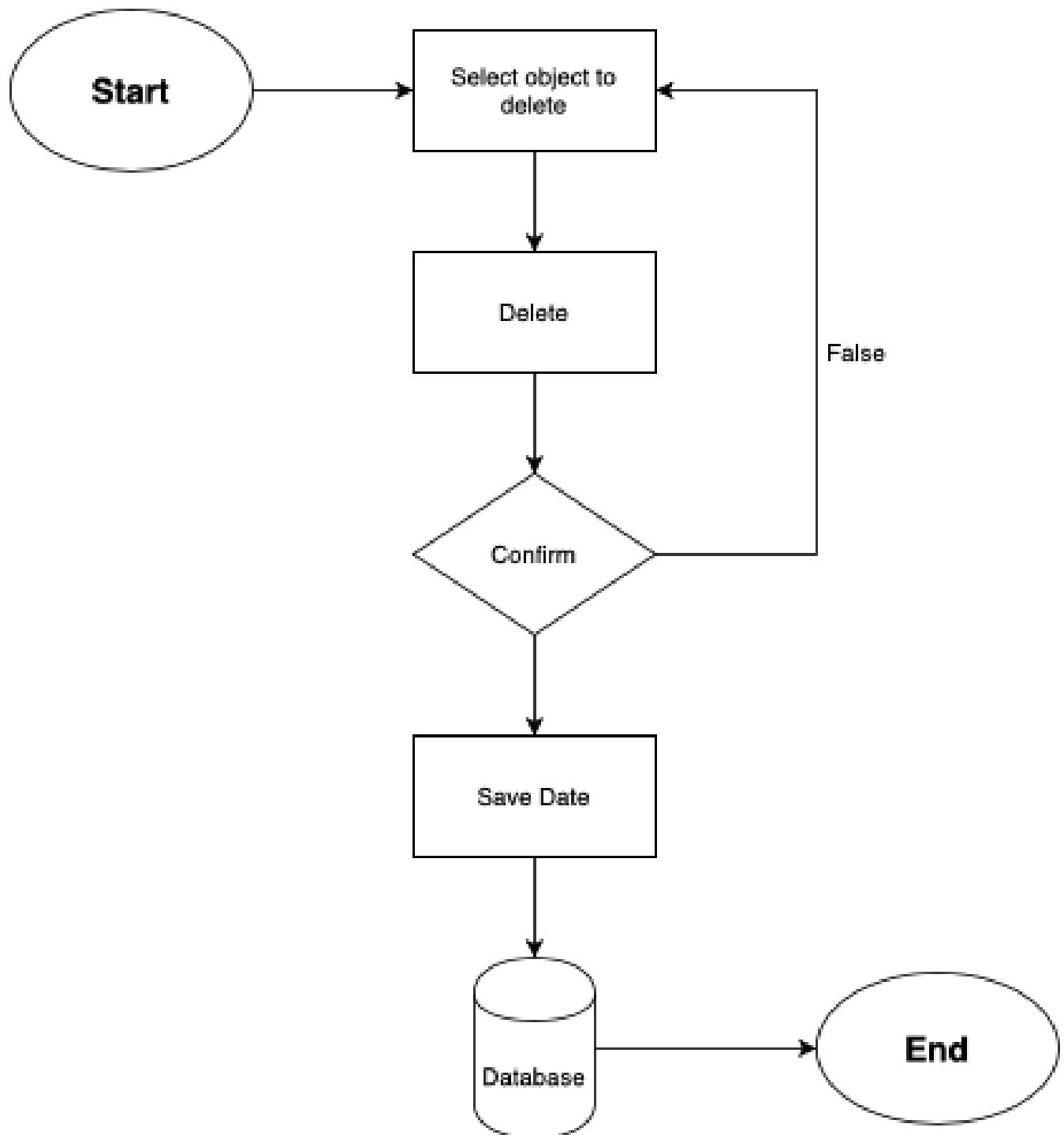
III.Data Flow Diagram

Define: Data Flows Diagram (DFD) describes the information flow in the system. The next step of system analysis is to consider in detail the information necessary for the implementation for functions discussed above and the one necessary for the improvement of the functions. Modelling tool frequently used for this purpose is DFD. DFD will support 4 main activities:

- **Analysis**: DFD is used to determine requirement of users.

- **Design:** DFD is used to map out plan and illustrate solution to analysis and users while designing a new system.

- **Communication:** One of the strength of DFD is its simplicity and ease to understand to analysts and users.

- **Document:** DFD is used to provide special description of requirement and system design. DFD provide an overview of key functional components of the system but it does not provide any detail on these components. We have to use other tools like database dictionary, process specification to get an idea of which information will be exchanged and how.

The main components of Context Diagram:

The external factors: External factors can be a person, a group of persons or an organization that are sources of information for the systems and are where system products are transferred to.

The process: Shows the common function of system

The data flow: Describe the movement of information from one part of the system to another.
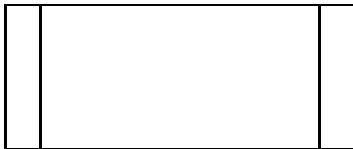
The data store: The Data Store is used to model a collection of data packets at rest. A store is represented graphically by two parallel lines. The name of a Data Store that identifies the store is the plural of the name of the packets that are carried by flows into and out of the Data Store.

1. Context Diagram:

```
┌──────────────┐                                    ┌──────────────┐
│              │  ◄─────────────────────────────    │              │
│              │                                    │              │
│    Admin     │     Register request ,feedback     │   Employee   │
│              │                                    │              │
│              │  ─────────────────────────────►    │              │
│              │                                    │              │
└──────────────┘                                    └──────────────┘
```

2. Level 0 DFD
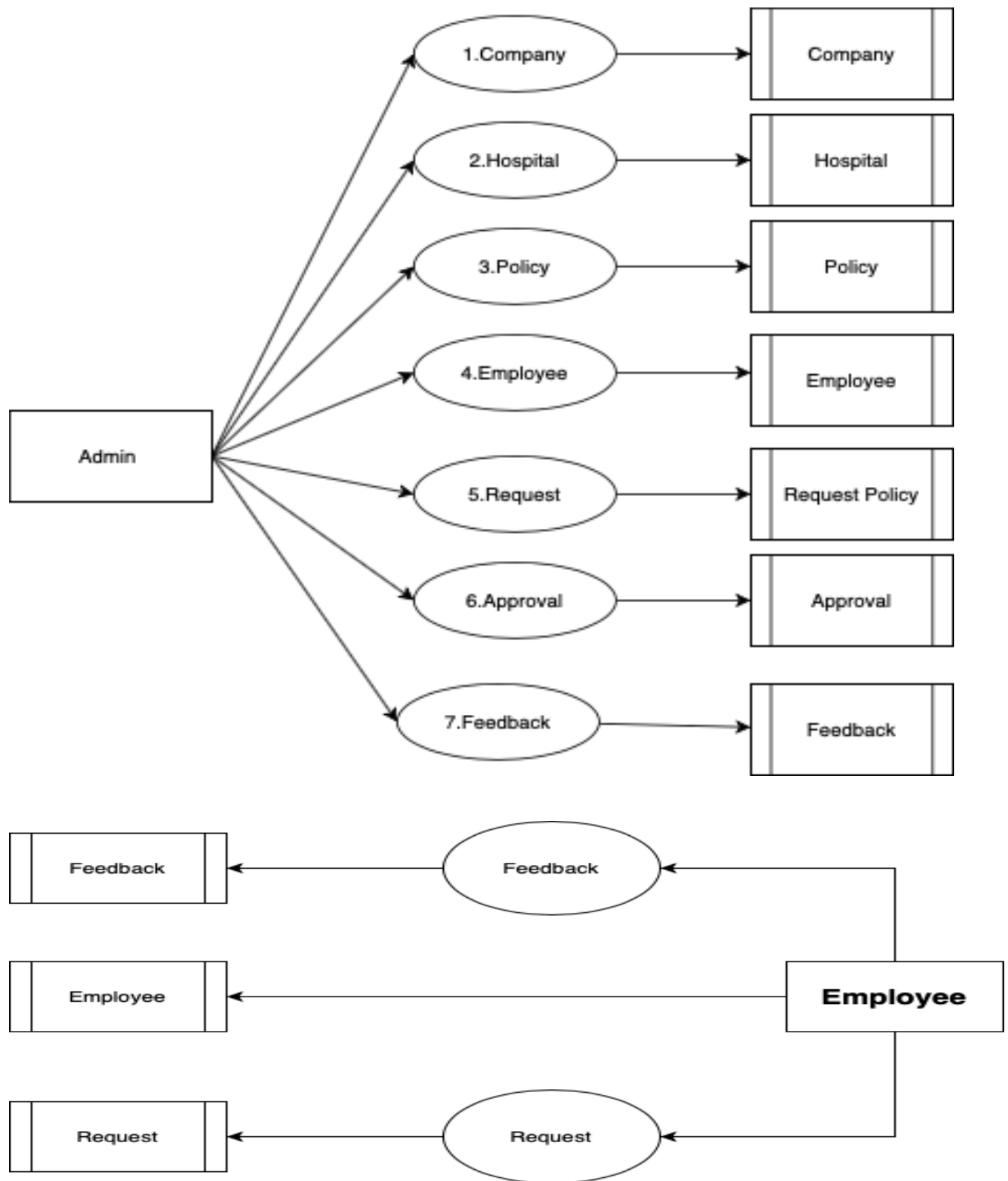
3. Level 1 DFD

3.1 Company Management
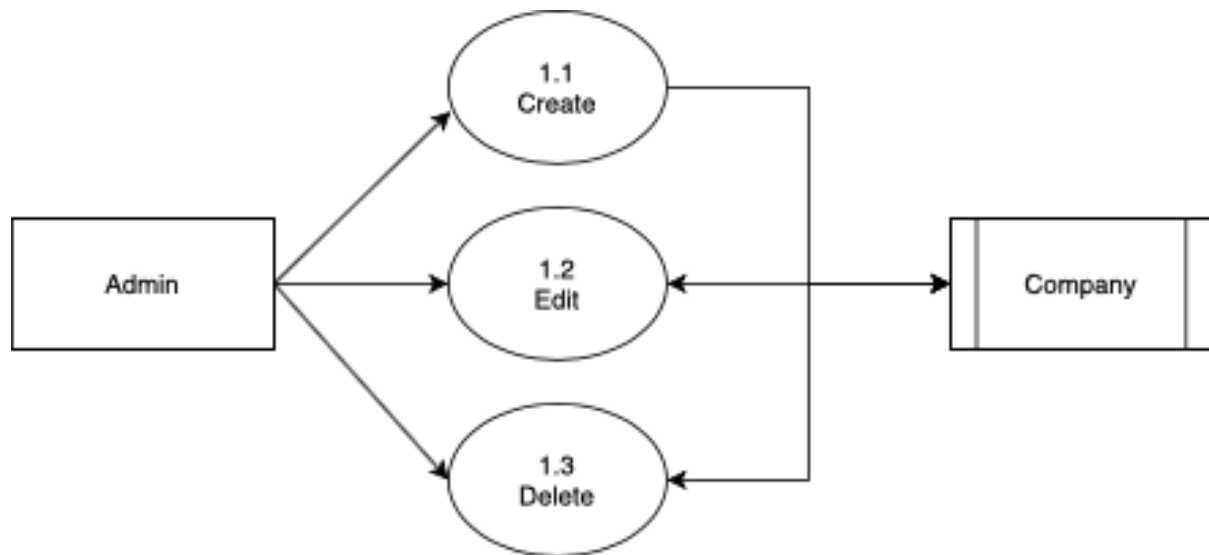
3.2 Hospital Management
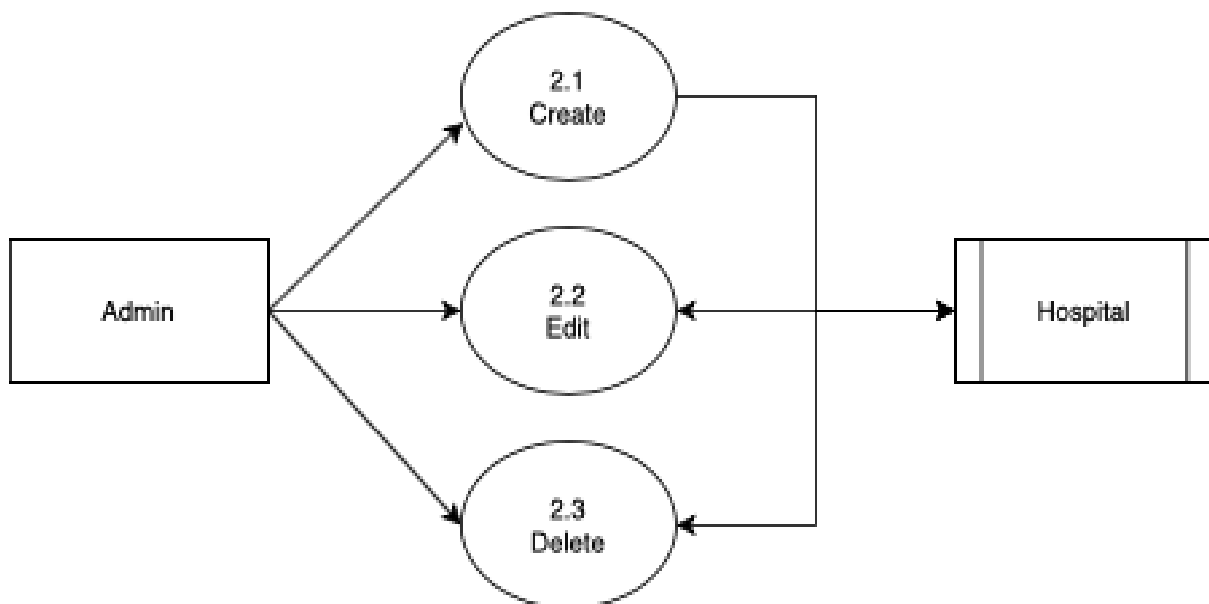
3.3 Policy Management
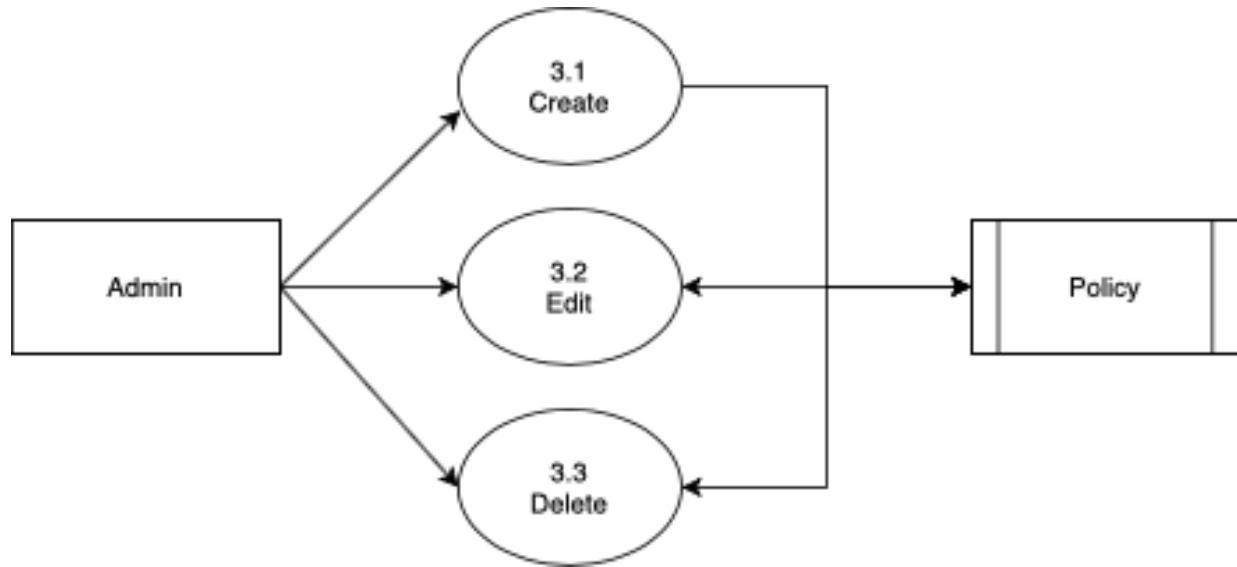
3.4 Employee Management
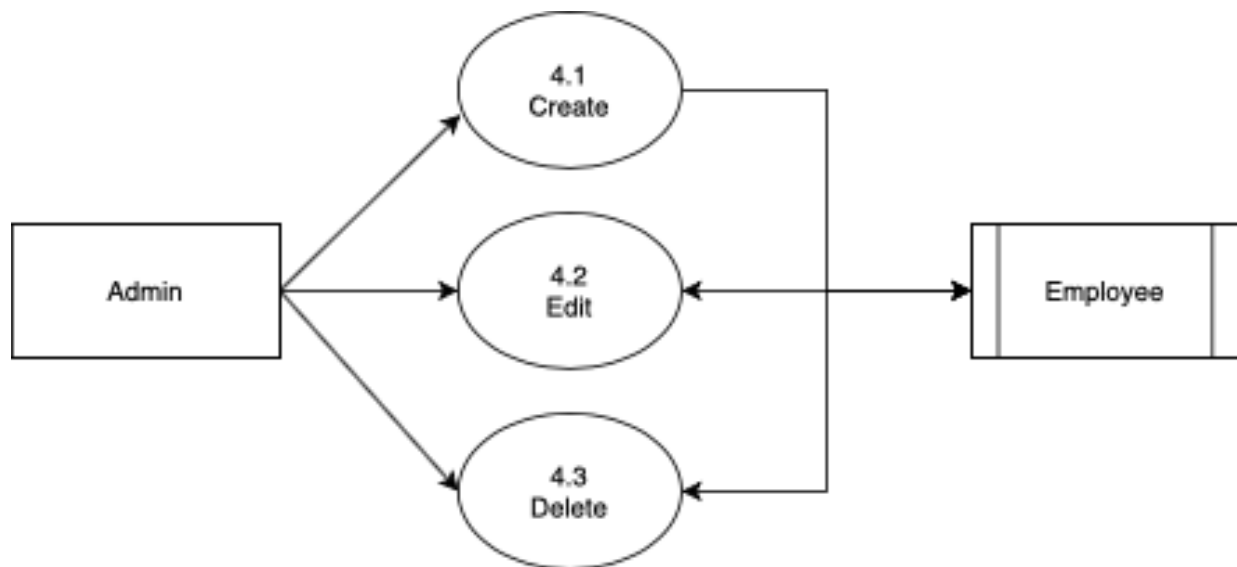
3.5 Request policy and Approval request Management

```
   ┌──────────────┐      ╭────────╮
   │   Employee   │─────▶│   5.1  │──────────────┐
   └──────────────┘      │ Create │              │
        ▲                ╰────────╯              ▼
        │                                  ┌──────────────┐
 ┌──────────────┐                          │Request Policy│
 │   Approval   │                          └──────────────┘
 └──────────────┘                                 │
        ▲                                         ▼
        │        ╭────────────╮      ┌──────────────┐
        └────────│    6.1     │◀─────│    Admin     │
                 │Create approval│    └──────────────┘
                 ╰────────────╯
```

3.6 Feedback Management

```
┌──────────────┐        ╭──────────╮         ┌──────────────┐
│   Employee   │───────▶│   7.1    │────────▶│   Feedback   │
└──────────────┘        │  Create  │         └──────────────┘
                        ╰──────────╯
```
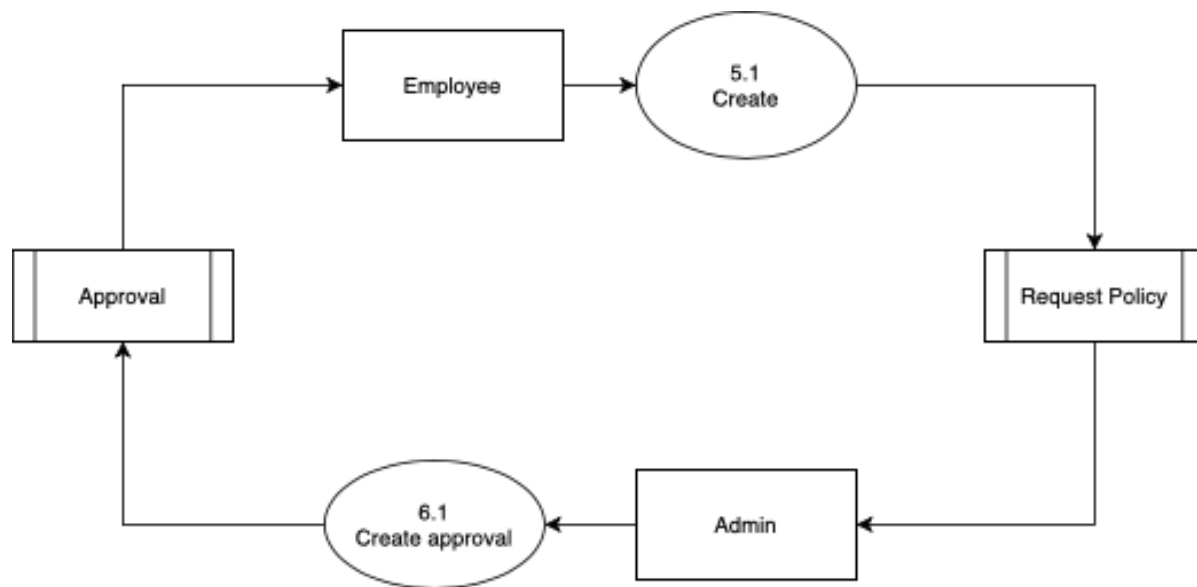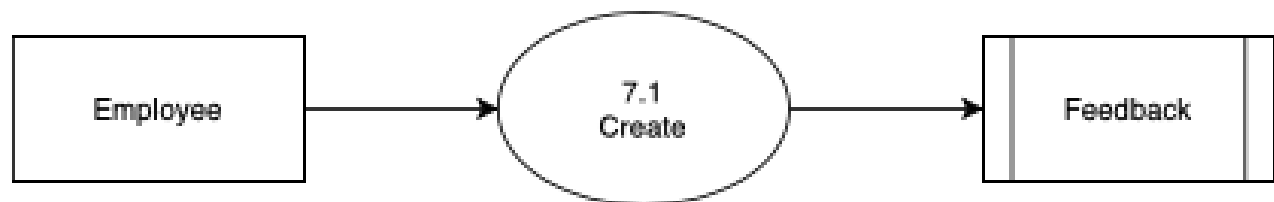
Them feedback admin , reply, delete

IV.Entity–Relationship Design

1. Entities and Properties

1.1 Adress Entity & Properties
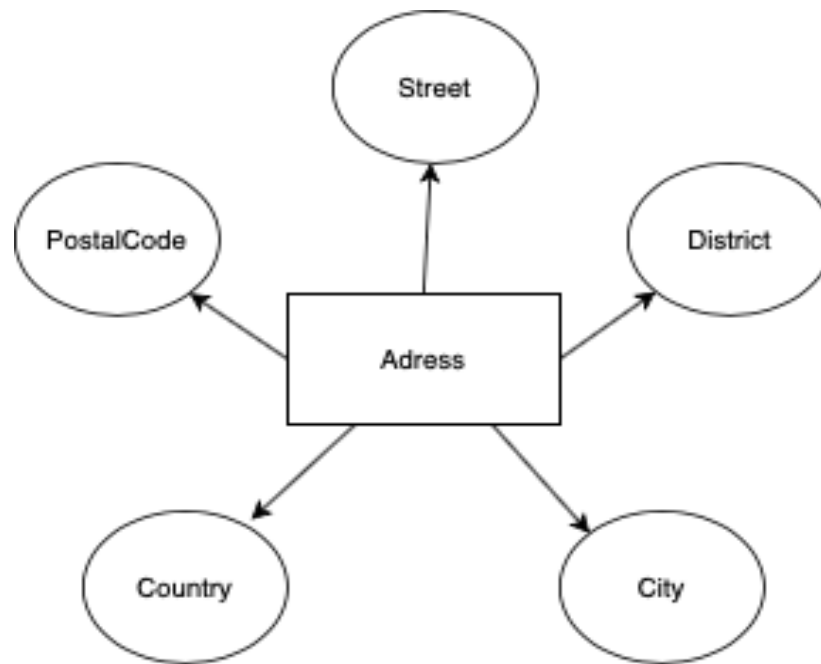
1.2 Employee Information Entity & Properties
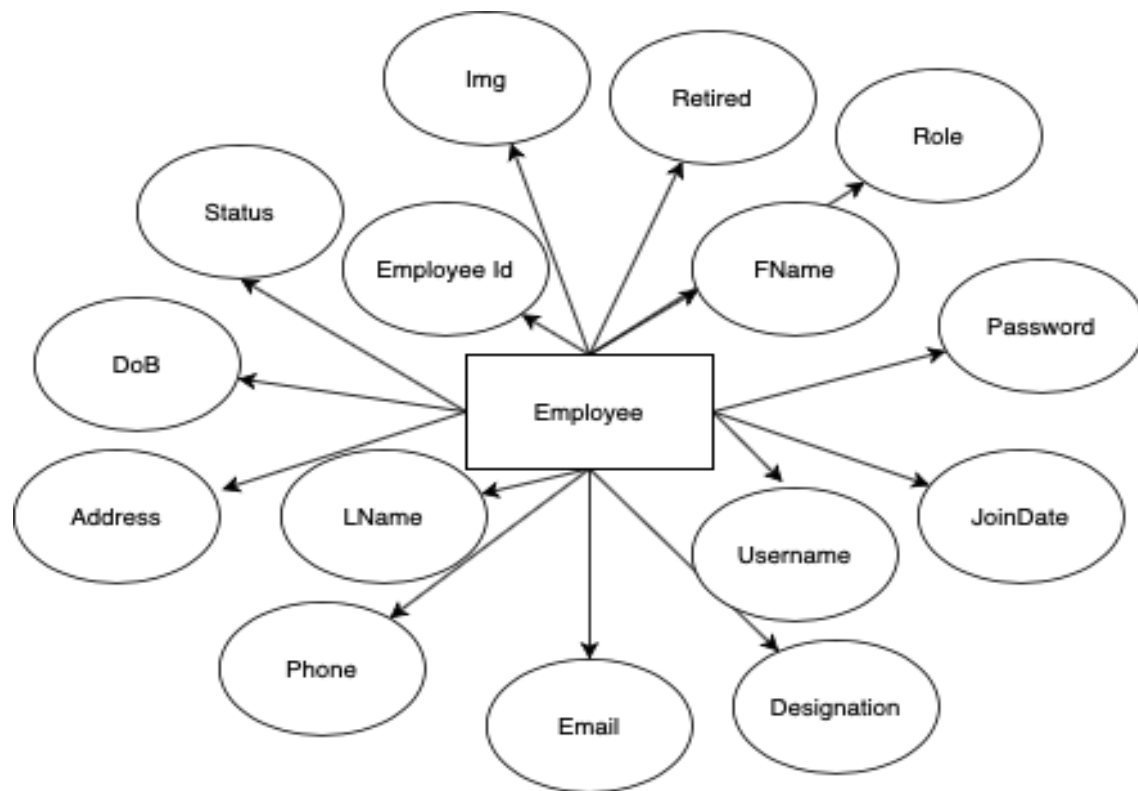
1.3 Feedback Entity & Properties
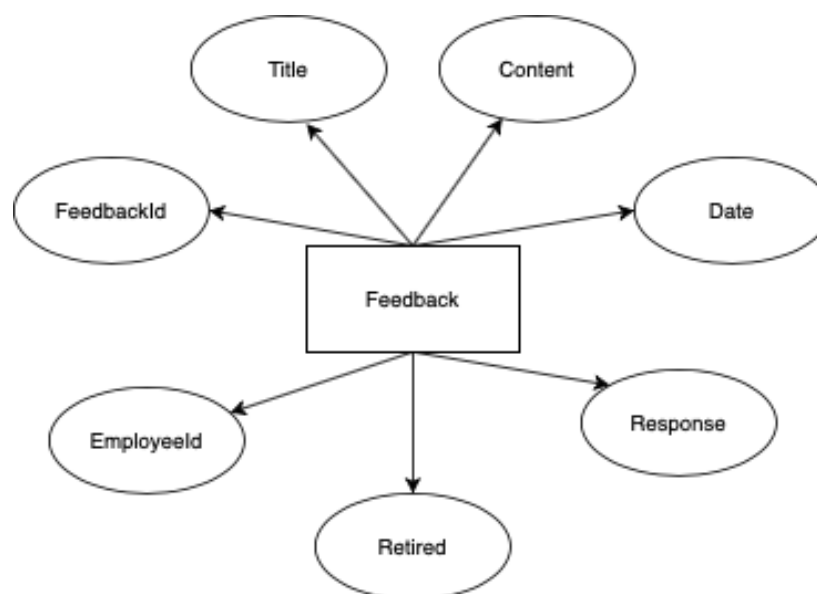
1.4 Hospital Entity & Properties

```
        HospitalName        Phone

HospitalId                          Url

          [ Hospital ]

Retired                             Img

     Address      Email
```
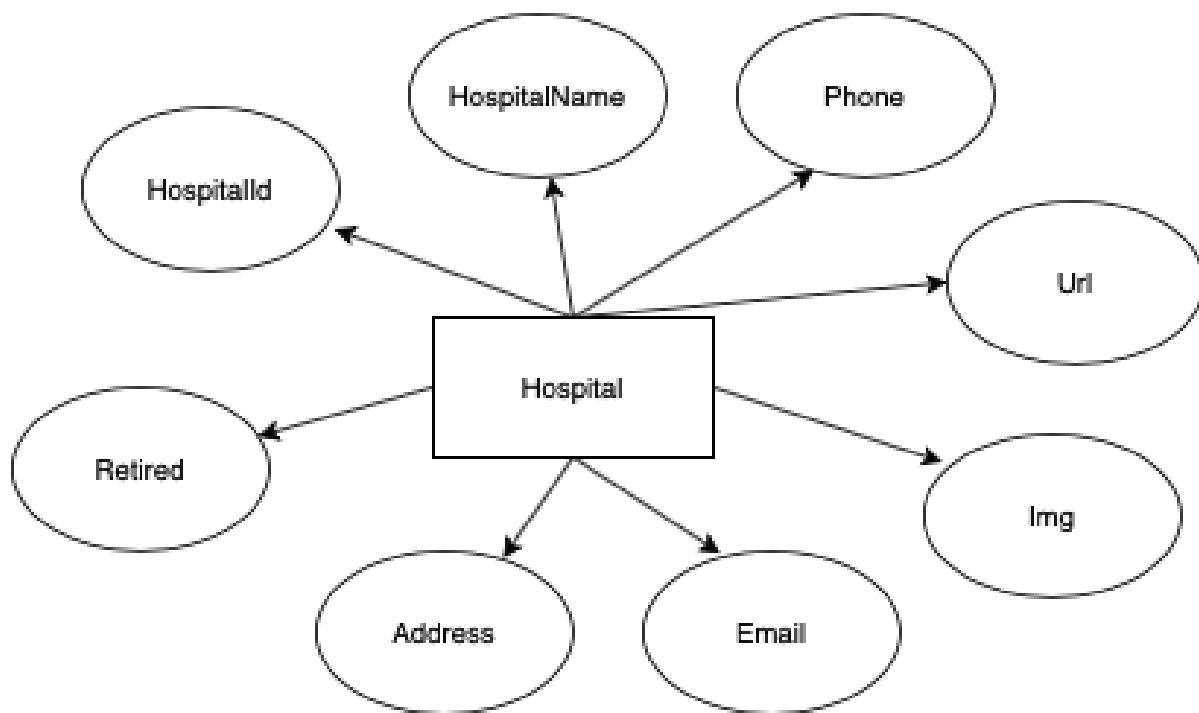
1.5 InsuranceCompany Entity & Properties

```
   InsuranceCompanyId   InsCompanyName

Retired                          Phone

       [ InsuranceCompany ]

Address                          Email

      Img        Url
```
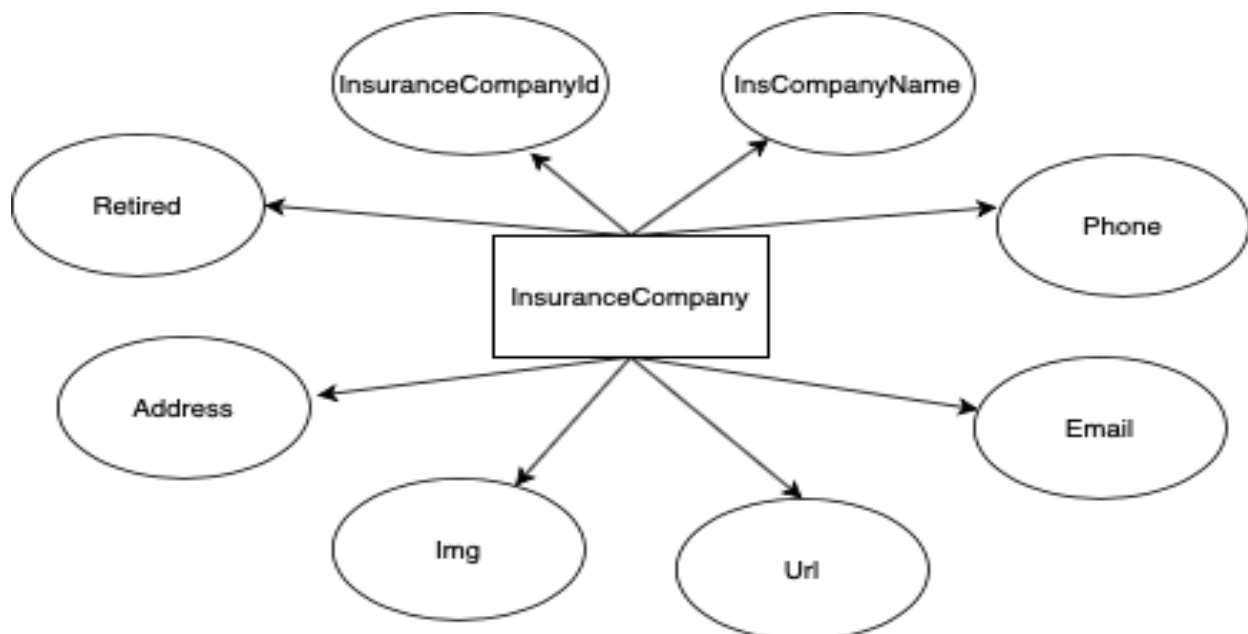
1.6 Notification Entity & Properties
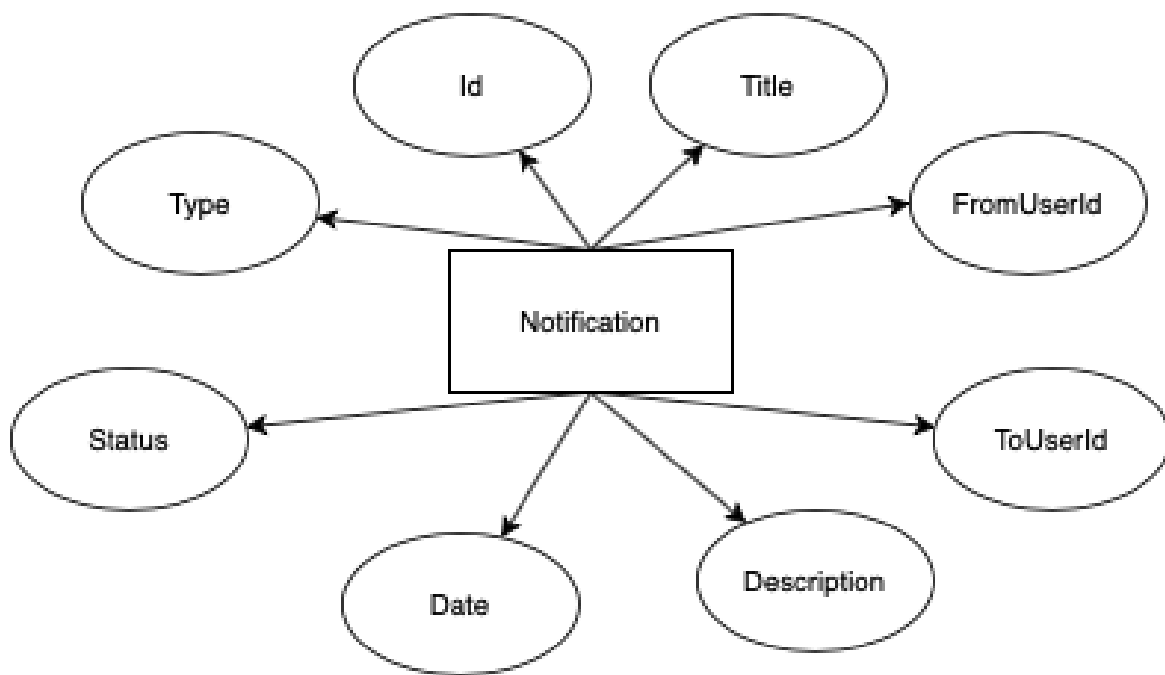
1.7 Policy Entity & Properties
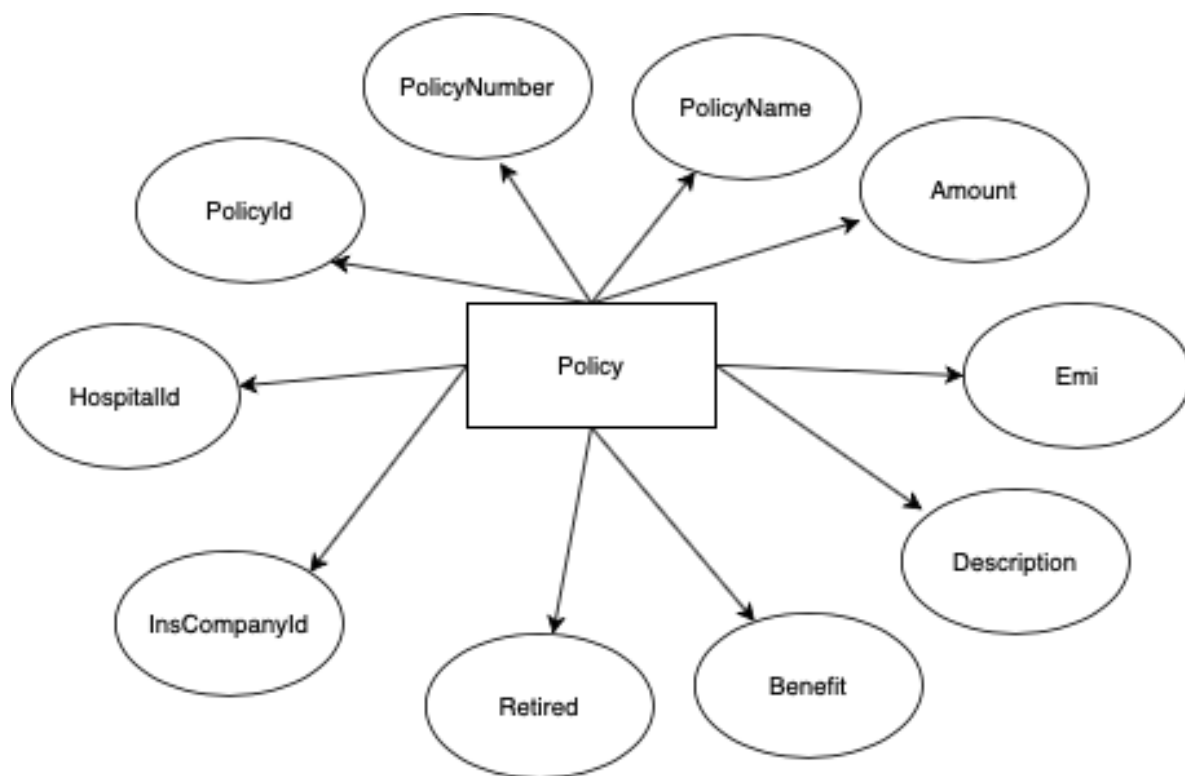
1.8 Policy Approval Details Entity & Properties
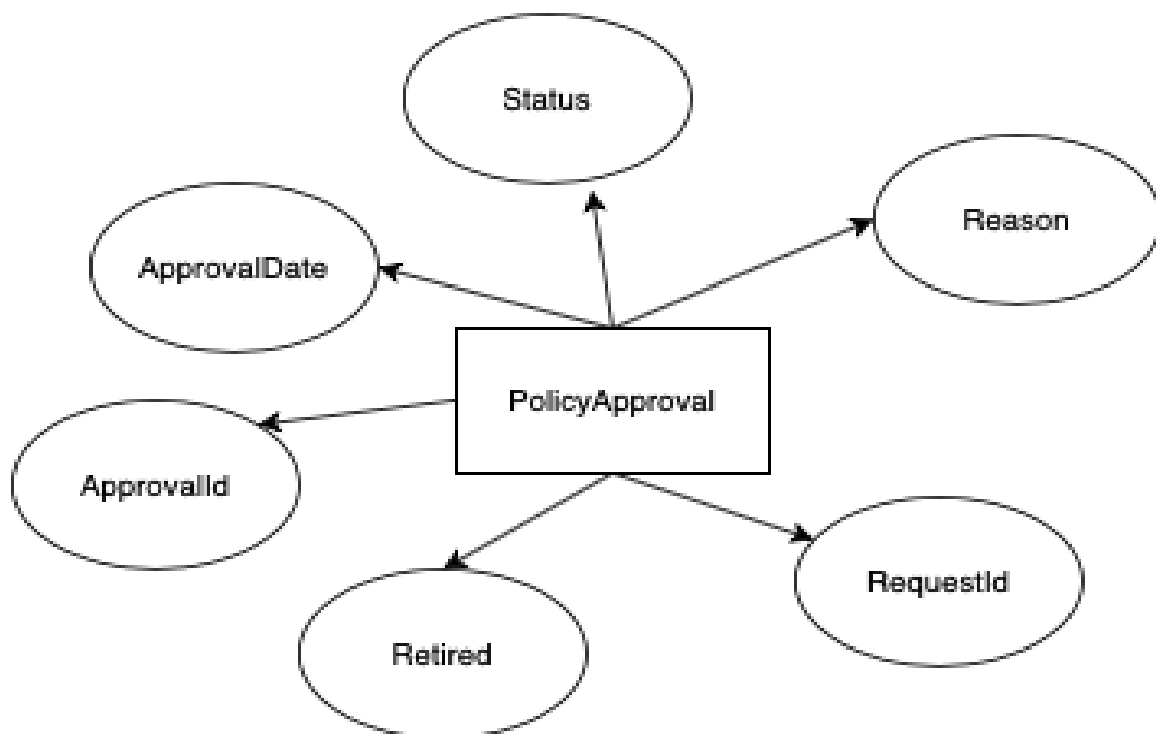
1.9 Policy Request Detail Entity & Properties

1.10 Policy Employee

Task sheet review 2

		Project Title: Railway Reservation Manage System	Date of Preparation of Activity Plan			
Project Ref. No: 4						
No.	Task	Actual Start Date	Actual Days	Team Member Name	Status	
01	Architecture & Design of the Project	JAN 8, 2021	7	All Members	Completed	
02	Algorithms - Data Flowchart			Pham Xuan Bach	Completed	
03	Data Flow Diagram			Luu Trong Phat	Completed	
04				Đỗ Trí Thịnh	Failed	
05	ERD			All Members	Completed	

	Prepare By: Group 3	Approved By: Faculty
Date: Dec 28, 2020	Team Leader Nguyen Vu Hoang Hoa	 Mr. Ngo Phuoc Nguyen

REVIEW III

I.Database Design

1. Database Design Diagram

InsuranceCompany
- InsuranceCompanyId
- InsCompanyName
- Phone
- Email
- Url
- Img
- Street
- District
- City
- Country
- PostalCode
- Retired

Hospital
- HospitalId
- HospitalName
- Phone
- Url
- Img
- Email
- Street
- District
- City
- Country
- PostalCode
- Retired

PolicyEmployee
- Id
- EmployeeId
- PolicyId
- Duration
- EffectiveDate
- ExpiredDate
- Amount
- Emi
- Status
- Retired

Policy
- PolicyId
- PolicyNumber
- PolicyName
- Amount
- Emi
- Description
- Benefit
- Retired
- InsCompanyId
- HospitalId

Feedback
- FeedbackId
- Title
- [Content]
- Date
- Response
- Retired
- EmployeeId

Employee
- EmployeeId
- FName
- LName
- Username
- Password
- JoinDate
- Designation
- Email
- Phone
- Street
- District
- City
- Country
- PostalCode
- DoB
- Status
- Img
- Retired
- Role

PolicyRequest
- RequestId
- EmployeeId
- PolicyId
- RequestDate
- Status
- Note
- Emi
- Amount
- Retired

PolicyApproval
- ApprovalId
- ApprovalDate
- Status
- Reason
- RequestId
- Retired

Notification
- Id
- Title
- FromUserId
- ToUserId
- Description
- Date
- Status
- Type
- RelatedId
- RelatedType

2. Database Structure

2.1 Table InsuranceCompany

InsuranceCompany

- 🔑 InsuranceCompanyId
- InsCompanyName
- Phone
- Email
- Url
- Img
- Street
- District
- City
- Country
- PostalCode
- Retired

2.2 Table Policy

Policy

- 🔑 PolicyId
- PolicyNumber
- PolicyName
- Amount
- Emi
- Description
- Benefit
- Retired
- InsCompanyId
- HospitalId

2.3 Table Employee

Employee

🔑	EmployeeId
	FName
	LName
	Username
	Password
	JoinDate
	Designation
	Email
	Phone
	Street
	District
	City
	Country
	PostalCode
	DoB
	Status
	Img
	Retired
	Role

2.4 Table Hospital

Hospital

🔑	HospitalId
	HospitalName
	Phone
	Url
	Img
	Email
	Street
	District
	City
	Country
	PostalCode
	Retired

Hospital

2.5 Table Policy Request

PolicyRequest

- 🔑 RequestId
- EmployeeId
- PolicyId
- RequestDate
- Status
- Note
- Emi
- Amount
- Retired

PolicyRequest

2.6 Table Policy Approval

PolicyApproval

- 🔑 ApprovalId
- ApprovalDate
- Status
- Reason
- RequestId
- Retired

PolicyApproval

2.7 Table Policy Employee

PolicyEmployee

🔑	Id
	EmployeeId
	PolicyId
	Duration
	EffectiveDate
	ExpiredDate
	Amount
	Emi
	Status
	Retired

PolicyEmployee

2.8 Table Feedback

Feedback

🔑	FeedbackId
	Title
	[Content]
	Date
	Response
	Retired
	EmployeeId

2.9 Table Notification
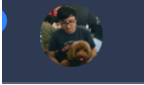
Notification	
🔑	Id
	Title
	FromUserId
	ToUserId
	Description
	Date
	Status
	Type
	RelatedId
	RelatedType

II. GUI Design – Front-end:

1. Home page:
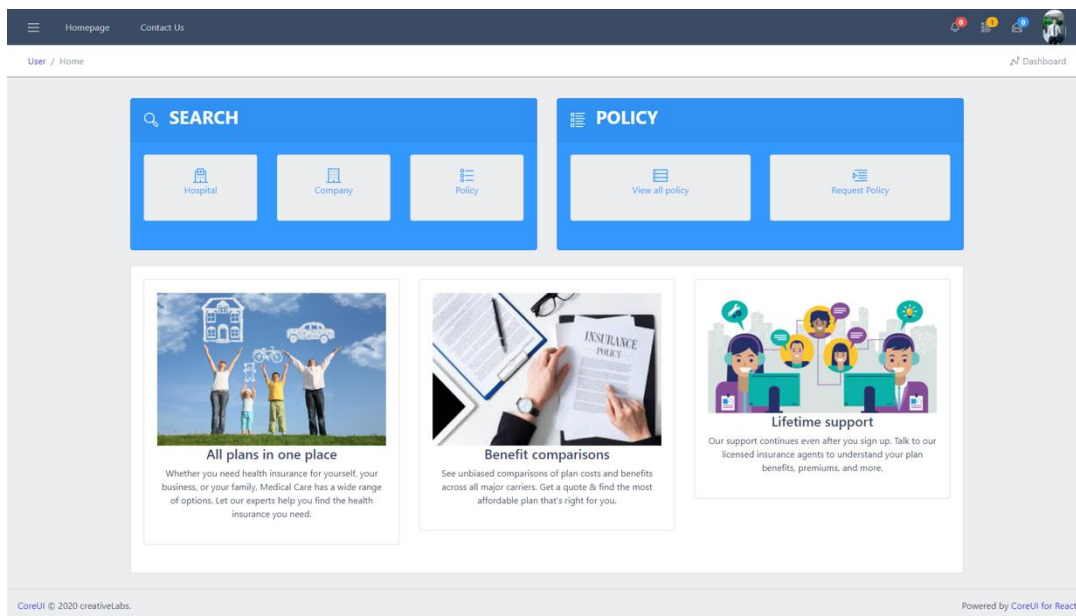
❖ <u>At home page Guest can:</u>

- o Click Homepage to view Hompage page
- o Click Contact Us to view Contact page
- o Click to view Profile and logout (User avatar)
- o Click to view Sliderbar

2. Contact Us && Feedback
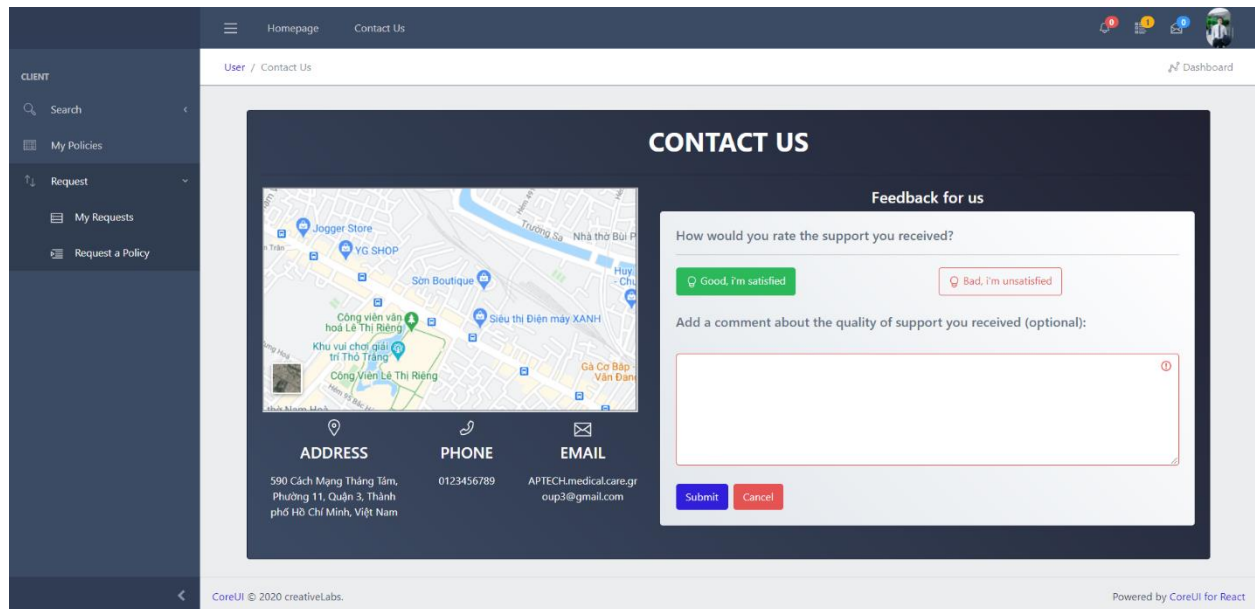
❖ <u>At Contact page Guest can:</u>

- ○ See information of company
- ○ Send a feedbacks to Admin

3. Search (in SliderBar)

❖ <u>At Search page Guest can:</u>

- ○ Search information of company , hospital , policy

4. My Policies(in SliderBar)

❖ <u>At My Policy page Guest can:</u>
  o See existing policies

5. Request

❖ <u>At Request page Guest can:</u>

- o See existing requests

- o Create a new request

- o See details request

III. GUI Design – Back-end:

1. Add employee:

Create New Employee					
Name	Type	Validation	Event	Description	Status
FName	TextField	0 <= Length <= 50	Input	Input first name	Enable
LName	TextField	0 <= Length <= 50	Input	Input last name	Enable
Username	TextField	0 <= Length <= 50	Input	Input username	Enable
Password	TextField	0 <= Length <= 50	Input	Input password	Enable
Phone	TextField	0 <= Length <= 15 Number only	Input	Input phone	Enable
doB	Datetime Picker	Datetime	Choise	Select date	Enable

Designation	TextField	0 <= Length <= 50	Input	Input designation	Enable
Email	TextField	0 <= Length <= 100 Email stype	Input	Input email	Enable
Street	TextField	0 <= Length <= 255	Input	Input stress	Enable
District	TextField	0 <= Length <= 50	Input	Input district	Enable
City	TextField	0 <= Length <= 50	Input	Input city	Enable
Country	TextField	0 <= Length <= 50	Input	Input country	Enable
PostalCode	TextField	0 <= Length <= 10	Input	Input potalcode	Enable

2. Add Company

Add New Company					
Name	Type	Validation	Event	Description	Status
InsCompanyNa me	TextField	0 <= Length <= 255	Input	Choose	Enable
Phone	TextField	0 <= Length <= 15 Number only	Input	Input phone	Enable
Email	TextField	0 <= Length <= 150 Email stype	Input	Input email	Enable
Url	TextField	0 <= Length <= 255	Input	Input url	Enable
Img	TextField	0 <= Length <= 255	Input	Input img string	Enable
Street	TextField	0 <= Length <= 255	Input	Input stress	Enable
District	TextField	0 <= Length <= 50	Input	Input district	Enable
City	TextField	0 <= Length <= 50	Input	Input city	Enable
Country	TextField	0 <= Length <= 50	Input	Input country	Enable
PostalCode	TextField	0 <= Length <= 10	Input	Input potalcode	Enable

3. Add Policies

Add Policies					
Name	Type	Validation	Event	Description	Status
PolicyNumber	TextField	0 <= Length <= 15	Input	Input policy number	Enable
PolicyName	TextField	0 <= Length <= 255	Input	Input policy name	
Amount	TextField	money	Input	Input amount	Enable
Emi	TextField	money	Input	Input emi	Enable
Description	TextField	0 <= Length <= 255	Input	Input Description	Enable
Benefit	TextField	0 <= Length <= 255	Input	Input Benefit	Enable
InsCompanyId	Select	No null	Select	Choise company	Enable
HospitalId	Select	No null	Select	Choise Hospital	Enable

4. Add Hospital

Create Hospital					
Name	Type	Validation	Event	Description	Status
HospitalName	TextField	0 <= Length <= 255	Input	Input HospitalName	Enable
Phone	TextField	0 <= Length <= 15 Number only	Input	Input phone	Enable
Url	TextField	0 <= Length <= 255	Input	Input url	Enable
Img	TextField	0 <= Length <= 255	Input	Input img string	Enable
Email	TextField	0 <= Length <= 150 Email stype	Input	Input email	Enable
Street	TextField	0 <= Length <= 255	Input	Input stress	Enable
District	TextField	0 <= Length <= 50	Input	Input district	Enable
City	TextField	0 <= Length <= 50	Input	Input city	Enable

Country	TextField	0 <= Length <= 50	Input	Input country	Enable
PostalCode	TextField	0 <= Length <= 10	Input	Input potalcode	Enable

Task Sheet Review III

Project Ref. No: 3	Project Title: Railway Reservation Manage System	Date of Preparation of Activity Plan			
No.	Task	Actual Start Date	Actual Days	Team Member Names	Status
01	Database Diagram GUI Design Back-End	Jan-27,2021	5	Nguyễn Vũ Hoàng Hoá	Completed
02	Database Structure GUI Design Back-End			Phạm Xuân Bách	Completed
03	GUI Design Front-End GUI Design Back-End			Lưu Trọng Phát	Completed
04				Đỗ Trí Thịnh	Failed

	Prepare By: Group 4	Approved By: Faculty
Date: Jan-27,2021	Team Leader	

	Nguyễn Vũ Hoàng Hoá	Mr. Ngo Phuoc Nguyen