- kish-insurance-service
  - warning:
  - Key Features:
    - .NET 8 Web API:
      - The project is built using the latest .NET 8 Web API for improved performance, security, and scalability.
    - Dynamic Coverage Management:
      - Administrators can manage coverage types, including premium rates and capital ranges, dynamically through the database without code changes.
    - Health Insurance Premium Calculation:
      - The system calculates health insurance premiums based on predefined coverage options selected by the insured.
    - Transaction Handling:
      - Insurance request submissions use database transactions to ensure data consistency and reliability.
    - API-Driven:
      - Provides RESTful APIs for submitting insurance requests, retrieving requests, and managing coverage types.
    - Query and Pagination Support:
      - Allows users to search insurance requests with query filters and paginated results for better performance and usability.
    - Database and Caching:
      - Utilizes MS SQL Server for the database and Redis for caching data to enhance performance, both running in Docker containers.
    - Validation of Capital Amounts:
      - Ensures that the entered capital for each coverage type falls within the defined minimum and maximum range.
    - Data Persistence:
    - Dockerized Deployment:
    - SSL Certificate Generation:
  - Service Objective:
  - Deployment
    - step1:
    - step2:
  - API Endpoints:
    - Submitting an Insurance Request:

kish-insurance-service

warning:

This is just a sample, so the Authentication and Authorization features have been omitted from the implementation.

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Validation of Capital Amounts:

Ensures that the entered capital for each coverage type falls within the defined minimum and maximum range.

Data Persistence:

All insurance requests and coverages are stored in the database for future retrieval and auditing.

Dockerized Deployment:

Easily deploy the service using Docker with `docker-compose`, ensuring a consistent and reproducible environment.

SSL Certificate Generation:

Provides steps for generating SSL certificates using OpenSSL for secure HTTPS communication.

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Service Objective:

The aim of this project is to provide health insurance costs from insurance companies to the insured individuals. In this project, a request containing predefined coverage options is sent to the system for calculating the health insurance premium. Ultimately, the costs are calculated and displayed.

Deployment

step1:

```
docker compose up -d --build
```

or

```
docker compose up -d
```

step2:

database migration:

ensure database is up

```
cd ./kish-insurence-services
dotnet ef database update
```

API Endpoints:

Submitting an Insurance Request:

- **POST** `{{api-endpoint}}/api/InsuranceRequest/submit-request`
  - **Accept:** application/json
  - **Request Body:**
    - InsuranceRequestDTO (title and coverages)

Retrieving the List of Insurance Requests:

- **GET** `{{api-endpoint}}/api/InsuranceRequest/requests`
  - **Query Parameters:**
    - `pageNumber`: integer (default: 1)
    - `pageSize`: integer (default: 10)
    - `title`: string (optional)
    - `coverageTypeId`: integer (optional)
  - **Accept:** application/json

Retrieving All Insurance Requests:

- **GET** `{{api-endpoint}}/api/InsuranceRequest/all`
  - **Accept:** application/json

Retrieving a Specific Insurance Request by ID:

- **GET** `{{api-endpoint}}/api/InsuranceRequest/{id}`
  - **Path Parameter:**
    - `id`: integer (required)
  - **Accept:** application/json

Managing Coverage Types (CRUD Operations):

- **GET** `{{api-endpoint}}/api/CoverageTypes`
  - **Accept:** application/json
  - **Response:** Array of CoverageType
- **POST** `{{api-endpoint}}/api/CoverageTypes`
  - **Request Body:** CoverageType
  - **Accept:** application/json
- **GET** `{{api-endpoint}}/api/CoverageTypes/{id}`
  - **Path Parameter:**
    - `id`: integer (required)
  - **Accept:** application/json
- **PUT** `{{api-endpoint}}/api/CoverageTypes/{id}`
  - **Path Parameter:**
    - `id`: integer (required)
  - **Request Body:** CoverageType
  - **Accept:** application/json
- **DELETE** `{{api-endpoint}}/api/CoverageTypes/{id}`
  - **Path Parameter:**
    - `id`: integer (required)
  - **Accept:** application/json

Weather Forecast: *just for health check*

- **GET** `{{api-endpoint}}/WeatherForecast`
  - **Accept:** application/json
  - **Response:** Array of WeatherForecast

DB Tables:

Table InsuranceRequests:

Name	Data Type	Constraints
Id	int	Primary Key, Identity
Title	nvarchar(max)	Not Null

Table Coverages:

Name	Data Type	Constraints
Id	int	Primary Key, Identity
Type	int	Not Null (Foreign Key to CoverageType)
Capital	decimal(18, 2)	Not Null
InsuranceRequestId	int	Foreign Key (FK toInsuranceRequests)
Premium	decimal(18, 2)	Not Null (Calculated from `PremiumRate`)

Table CoverageTypes:

Name	Data Type	Constraints
Id	int	Primary Key, Identity
Name	nvarchar(100)	Not Null, Unique
PremiumRate	decimal(5, 4)	Not Null
MinCapital	decimal(18, 2)	Not Null
MaxCapital	decimal(18, 2)	Not Null

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openssl certificate generate for HTTPS:

step1:

openssl req -x509 -newkey rsa:4096 -sha256 -days 3650 -nodes -keyout key.pem -out cert.pem -subj "/C=US/ST=Tehran/L=Tehran /O=ArsacidTechnologies Name/OU=IT Department/CN=localhost" -passout pass:MehranPfx

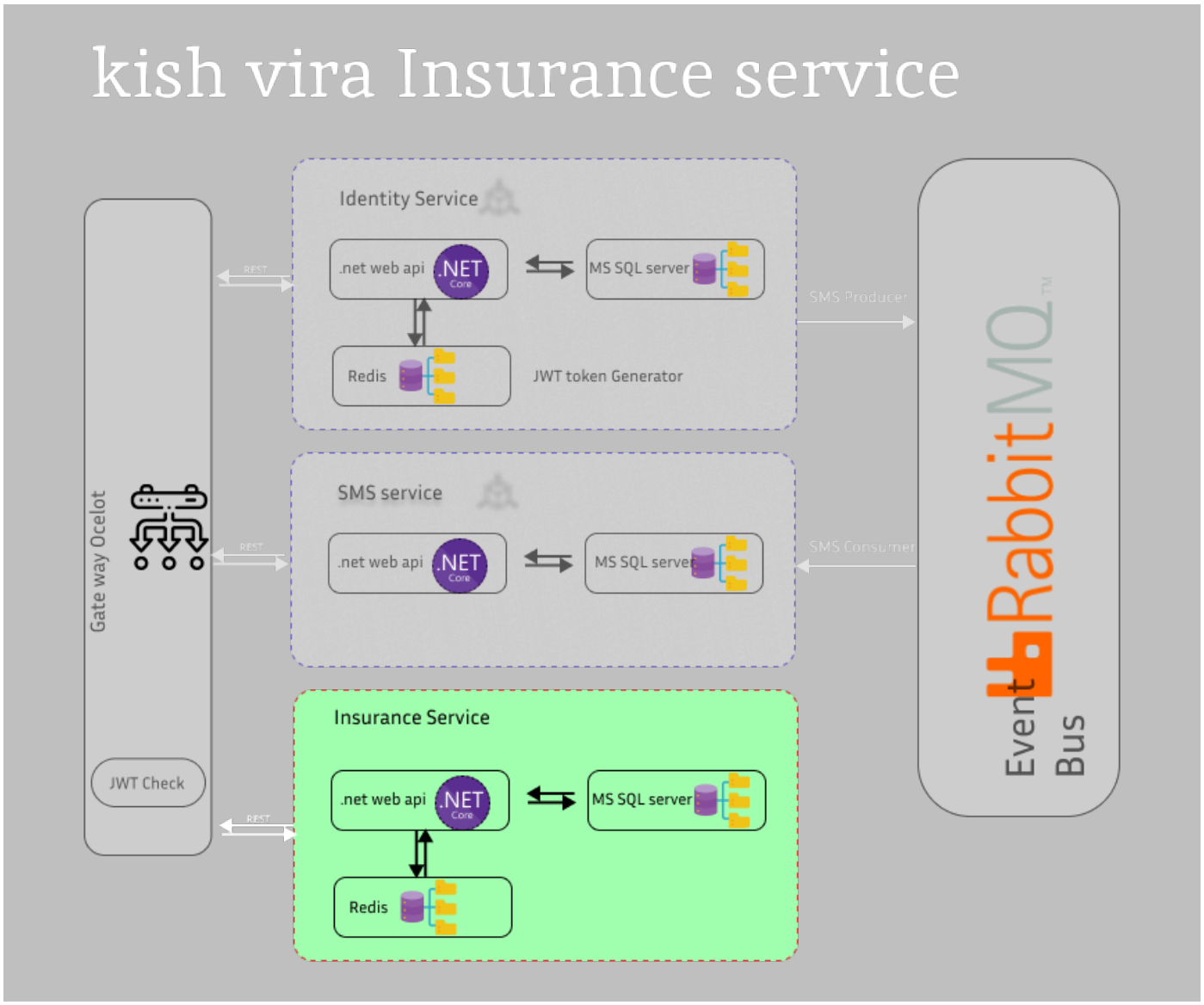
step2:

openssl pkcs12 -export -out certificate.pfx -inkey key.pem -in cert.pem -password pass:MehranPfx

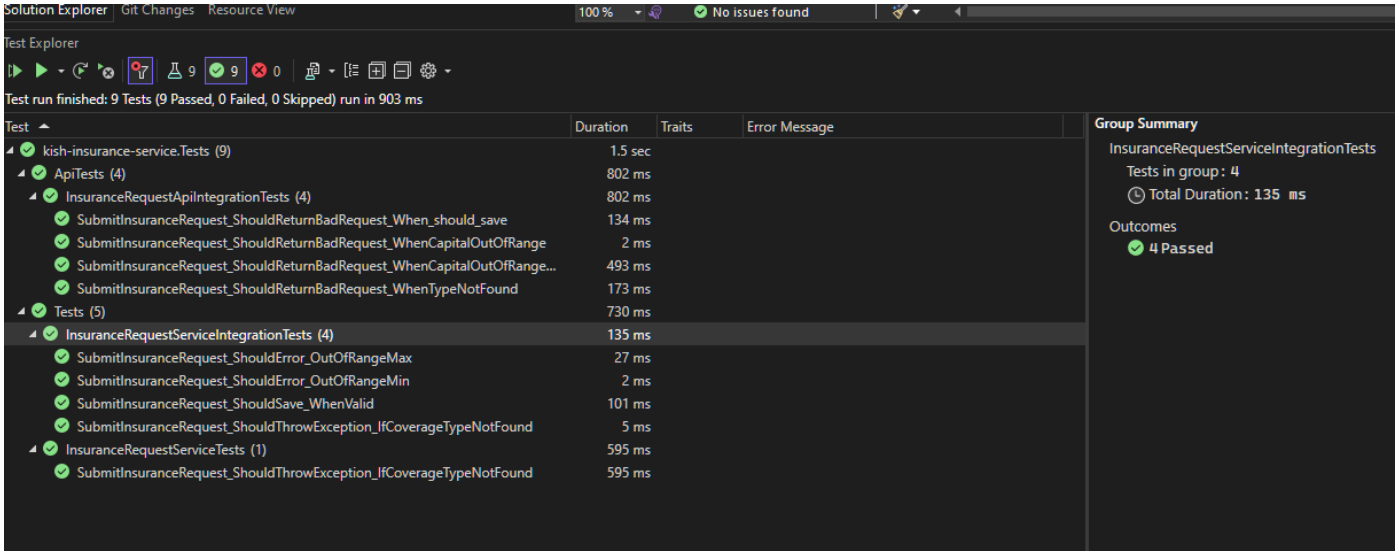
cd Directory: ~:\gh\project-name\certs

dotnet dev-certs https --trust

Architecture:



Test Results :



Github workflow CI-CD image: