

## **Gym Management Using Azure Services**

**Project Documentation** 

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#### **ABSTRACT**

This project report presents the design and implementation of Gym Management. This website is hosted on Azure wen App and deployed using Azure Storage Account it also uses Azure AI Services. Gym management is the process of overseeing the day-to-day operations of a fitness facility. This includes a wide range of tasks, from marketing and membership sales to member engagement and retention, to equipment maintenance and safety. Effective gym management is essential for the success of any fitness business. The report elaborates on the technical details, challenges, and benefits of Gym Management, as well as the future directions for enhancement.

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# CHAPTER 1

## 1: Introduction

Gym management is the process of overseeing the day-to-day operations of a fitness facility. This includes a wide range of tasks, from marketing and membership sales to member engagement and retention, to equipment maintenance and safety. Effective gym management is essential for the success of any fitness business, I have developed a Gym Website that provides a personalized and engaging experience for its users. The main objective of this project report is to describe the design, implementation, and evaluation of the Gym Management system.

## 1.1 Fundamentals:

Fundamental steps in building the gym management are:

- Planning the purpose, scope, and functions of the gym management, as well as the budget, timeline, and stakeholders involved.
- Designing the gym management architecture, interface, and features, as well as the digital collection, metadata, and access policies.
- Implementing the gym management system using appropriate software, hardware, and network technologies, as well as testing and debugging the system.
- Evaluating the gym management performance, usability, and user satisfaction, as well as collecting feedback and data for improvement.
- Maintaining and updating the gym management system, content, and services, as well as ensuring security and backup measures.

# 1.2 Objectives:

The objectives that I took into consideration while creating this website.

- To Offer a convenient and user-friendly platform for members to manage their gym experience.
- Features like online workout logs, class schedules, and virtual training options can add value and make going to the gym more enjoyable. To Increase visibility and attract new members through a well-designed and informative website.
- Share success stories, member testimonials, and high-quality content to establish the gym as a trusted fitness resource.
- Ultimate goal of this website is to help make it member healthier.

# 1.3 Scope:

- To develop a gym management system that provides subscription-based access to a large and diverse collection of gym equipment.
- To evaluate the effectiveness, usability, and user satisfaction of the gym management system using quantitative and qualitative methods.
- To limit the project to a certain number of gym equipment, users, and to use existing software tools and platforms for the development and deployment of the system.

# CHAPTER 2

# 2. System requirements and specifications

#### 2.1 What is SRS?

Software requirements Specifications (SRS) is the starting point of the software developing activity. As the system grew more complex it became evident that the goal of the entire system cannot be easily comprehended hence the need for the requirement phase arose. The software project is initiated by the client needs. The SRS is the means of translating the idea of the mind of client (the input) into a formal document (the output of the required phase.)

The SRS phase consists of two basic activities:

Problem/ requirement analysis: The process is order and more nebulous of the two deals with understanding the problem the goals and constraints.

Requirement specifications: Here the focus is on specifying what has been found giving analysis such as representation specification language and tools and checking the specification and addresses during this activity requirement phase terminates with the production of the validate SRS document producing the SRS document is the basic goal of this phase.

#### 2.2 Role of SRS:

The purpose of the software requirement specification is to reduce the communication gap between the clients and the developers. The software requirement specification is the medium through which the client and user needs are accurately specified. It forms the basis of software development. A good SRS should satisfy all the parties involved in the system.

## 2.3 Requirements Specification Document:

A software requirement specification is a document that describes the nature of a project software or application. In simple words SRS document is a manual of a project provided It is preferred before you kick -start a project application This document is also known by the name SRS report software document A software document is primarily prepared for a project software of any kind of application There are set of guidelines to be followed while preparing the software requirement specification document. This includes the purpose, scope, functional and non-functional requirements, software, and hardware requirements of the project. In addition to this, it also contains the information about environmental condition required Safety and security requirements software quality attributes of the project etc.

#### 2.4 Functional requirements:

For documenting the functional requirements, the set of functionalities supported by the system are to be specified. A function can be specified by identifying the state at which data is to be input to the system Its input data domain, the output domain, and the type of processing to be carried on the input data to obtain the output data Functional require Define specific behaviour of function of the application.

#### 2.5 Non-Functional Requirements:

A non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of the system, rather than specific behaviour. Especially these are the constraints the system must work within.

Following are the non-functional requirements:

- NFR.1 Website must be able to work properly without bugs.
- NFR.2 Websites should not have any lag while showing the trainers.
- NFR.3 The database should access proper user data.
- NFR.4 User with free membership should be able to use the website.

#### 2.6 Performance:

The performance of the deployed website can be calculated by using following method: Measuring How the performance of your application stands in relation to the defined performance goals and helps you to identify the bottleneck that affected your application performance. It helps you identify whether your application is moving towards or away from performance goals. Defining what you will measure that is your matrix and defining the objective for each metric is critical part of your testing plan. Performance objective includes the following: response time latency throughput or resource utilization.

#### 2.7 Software Requirements:

- Operating system: Windows 10/11 or MAC OS.
- Platform: Microsoft Azure
- Microsoft azure subscription (Free Trial or Azure for student or Pay-asyou-go)
- website programming language: HTML, CSS, C#

#### 2.8 Hardware Requirements:

• Processor: Intel core i3 and above

• Hard disk: 256 GB or above

• RAM: 4GB or above

• Internet: 1 Mbps or above

## **CHAPTER 3**

#### **Azure Services Used:**

#### 1. Azure Storage Account:

A storage account is a container that bands a set of Azure Storage services together. Only data services from Azure Storage can be comprised in a storage account. Integrating data services into a storage account allows the user to manage them as a group. The settings specified while creating the account, or setting that is changed after creation, is applicable everywhere. Once the storage account gets deleted, all the data stored inside gets removed.



## **Types of Azure Storage Accounts: -**

Azure Storage provides different types of storage accounts. Each type supports unique features and has its pricing model. Consider these differences before creating a storage account to work out the best account for the applications. The types of storage accounts are:

- General-purpose v2 accounts: Basic storage account type for blobs, files, queues, and tables. Recommended for most scenarios using Azure Storage.
- **General-purpose v1 accounts:** Legacy account type for blobs, files, queues, and tables. Use general-purpose v2 accounts instead when possible.
- Block Blob Storage accounts: Storage accounts with premium performance characteristics for block blobs and appends blobs. It is recommended for scenarios with high transaction rates or scenarios that use smaller objects or require consistently low storage latency.
- File Storage accounts: Files-only storage accounts with premium performance characteristics. Recommended for enterprise or high-performance scale applications.
- Blob Storage accounts: Legacy Blob-only storage accounts.

  Use general-purpose v2 accounts instead when possible.

### 2. Azure App Service:

Azure App Service is a Platform as a Service (PaaS) offering. This means you or your organization is only responsible for managing your business application and its data. Everything else is managed by Azure. You don't have to worry about any of the things like, managing the network or underlying infrastructure. Installing the operating system updates, critical patches, runtime or middleware components. All these are taken care by Azure. This gives you, even more time to concentrate on what matters to your business.

## Benefits of using azure app service:

## 1)Fully managed environment

It's a fully managed environment, meaning App Service automatically patches and maintains the OS and language frameworks for you. You get the time to focus on designing, developing and maintaining your application and data.

Azure App Service supports a wide variety of programming languages and frameworks.

- .NET
- .NET Core
- Java
- Ruby
- · Node.js
- PHP
- Python

You can also run PowerShell and other scripts or executables as background services.

## 2) Scalability

Based on the demand for your application, App Service can scale resources up and down or in and out. You can do this either manually if you want to or automatically based on metrics like CPU utilization for example.

### 3) Compliance

App Service is ISO (International Organization for Standardization), SOC (Service Organization Controls), and PCI (Payment Card Industry) compliant.

## 4) Security

Authenticate users with Azure Active Directory or any of the external authentication providers like Google, Facebook, Twitter, or Microsoft.

#### 5) Support for Containerization and Docker

You can also host a custom Windows or Linux container in App Service. So, if you want to, you can dockize your app and host it in App Service. You can also run multi-container apps with Docker Compose. We will discuss how to do all these in our upcoming videos.

#### **DevOps optimization**

Set up CI/CD i.e. continuous integration and deployment with Azure DevOps, GitHub, Bitbucket, Docker Hub, or Azure Container Registry.

#### Access on-premises data

With App Service you can still access data on your on-premise servers using Hybrid Connections and Azure Virtual Networks.

#### 3) Azure Resource Group:

Resources are instances of azure services that you create, like virtual machines, app services, storage accounts, SQL databases, function apps etc. All these are azure services. Every time you create an instance of a service, you are creating a resource. There are hundreds of azure services.

As the name implies, a Resource Group is a group of azure resources like virtual machines, app services, storage accounts, SQL databases etc. It's a logical container for grouping related azure resources.



#### 4) Azure QnA Service:

Azure QnA Maker is a cloud-based Natural Language Processing (NLP) service that allows you to create a natural conversational layer over your data.

It is used to find the most appropriate answer for any input from your custom knowledge base (KB) of information.

Azure QnA Maker is commonly used to build conversational client applications, which include social media applications, chat bots, and speech-enabled desktop applications.

Azure QnA Maker doesn't store customer data. All customer data (question answers and chat logs) is stored in the region the customer deploys the dependent service instances in.

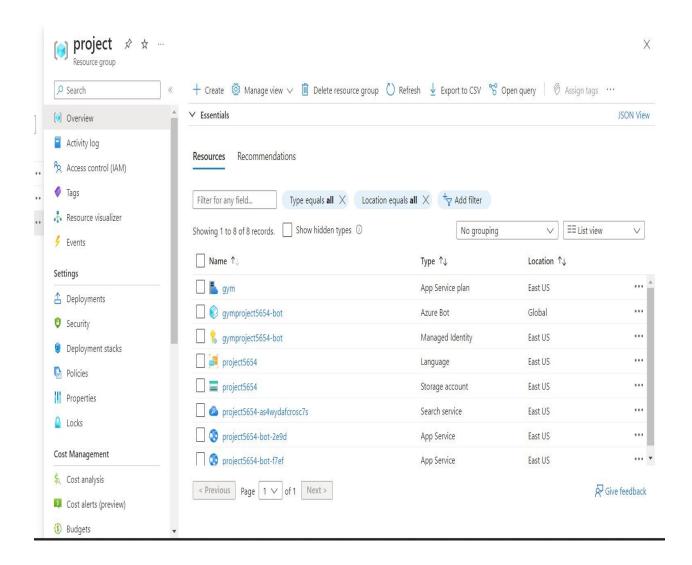
Azure Bot Service is basically Microsoft's artificial intelligence (AI) chatbot platform offered as a service on the Azure cloud service marketplace. Azure Bot Services offers the ability to chatbot developers to add intelligent agents to their bots that are capable of conversation without having to commit the resources to develop one's own AI.



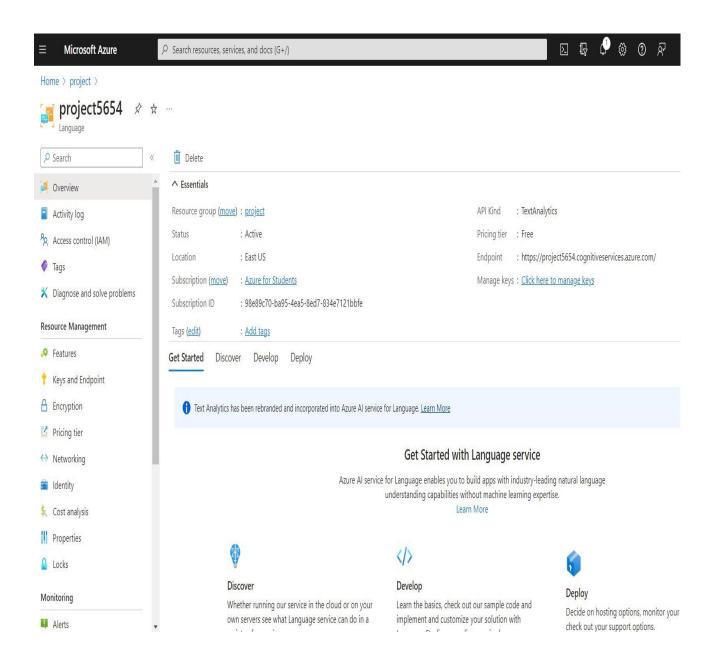
## **CHAPTER 4:**

#### **IMPLEMENTATION**

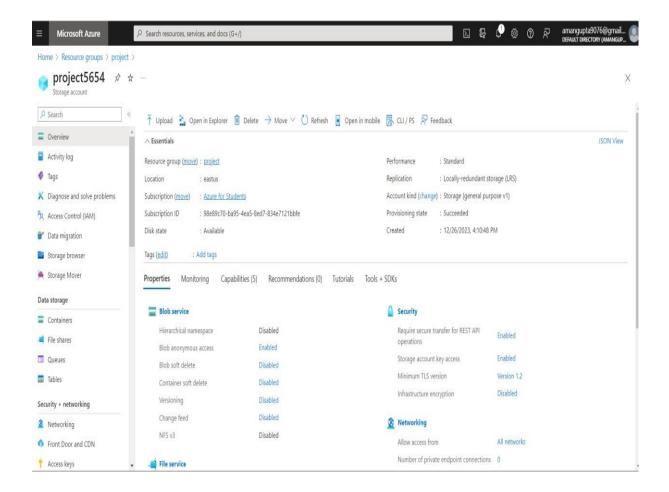
1) First, we created a Resource group in Azure Portal name.



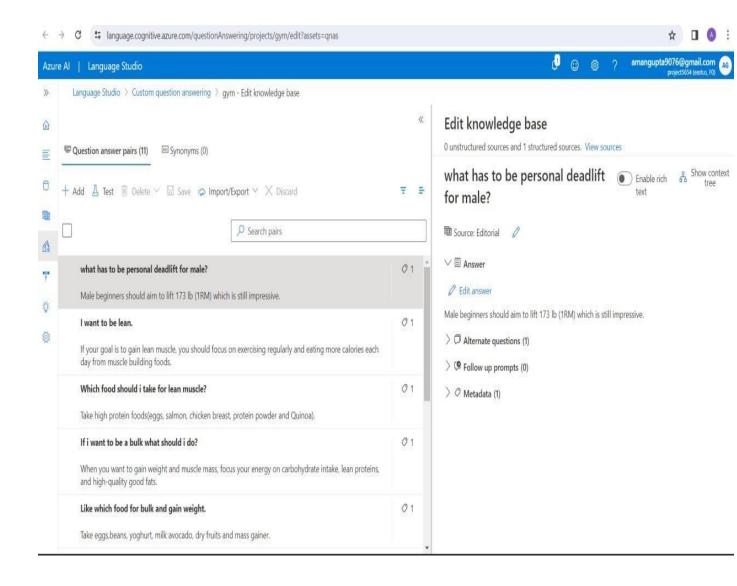
2) Then we go to language.cognitive.azure.com on new tab and create a cognitive service for Language. And QnA maker Service for Custom Question and Answering.



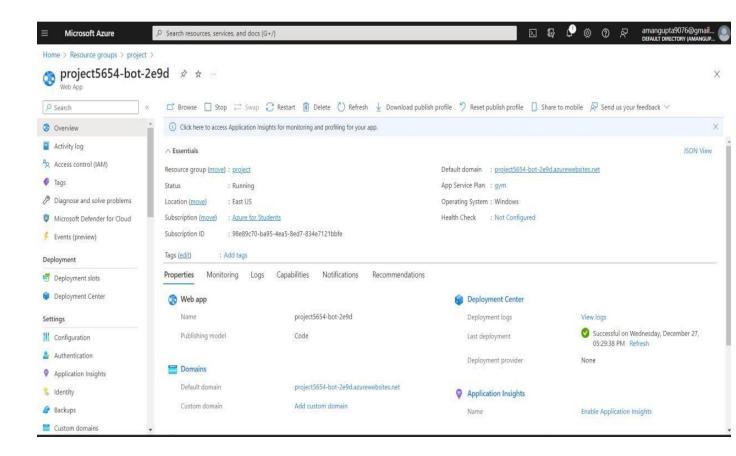
3) Then we create a Storage account on portal.



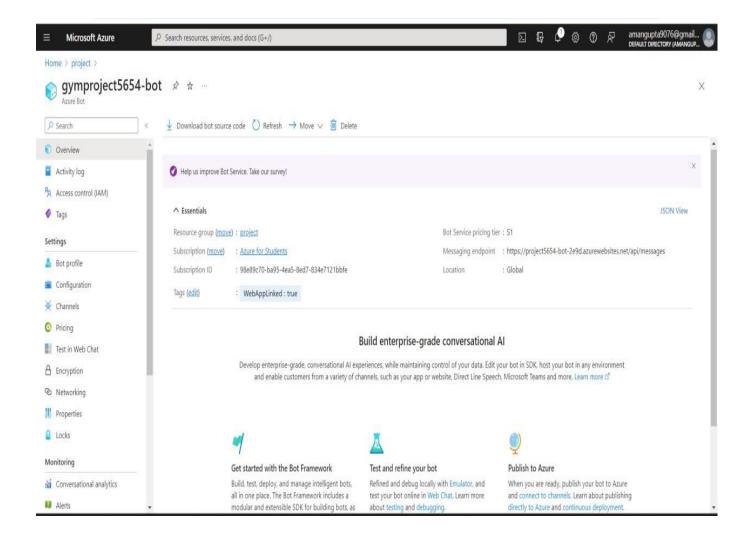
- 4. After creation of QnA maker. Select a source as Editorial.
- 5. Then create a knowledge base for custom question and answering.



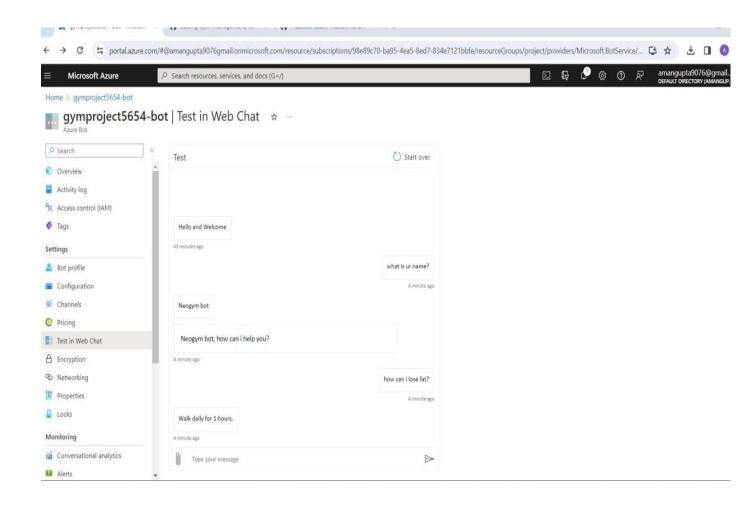
- 6. Then we Deploy a knowledge base and publish.
- 7. After publish, Click on Create Bot After Clicking Select a storage account and create new App Service plan.

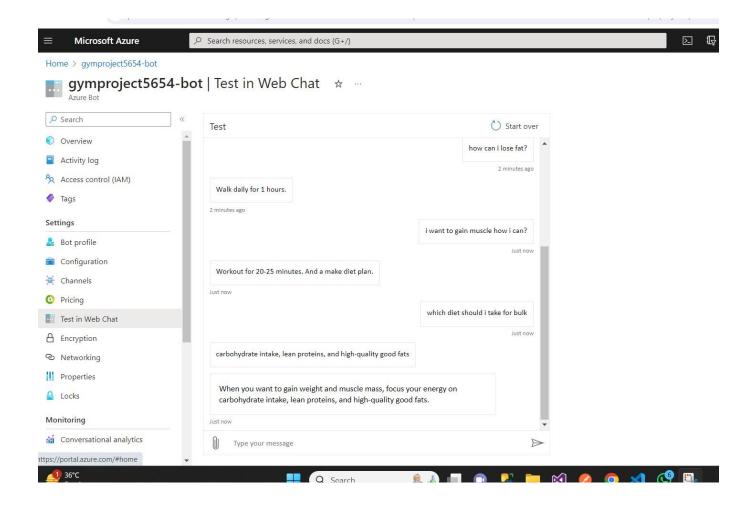


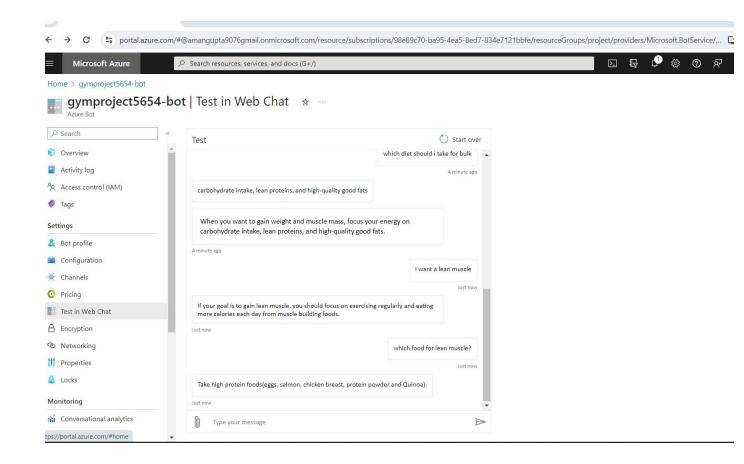
#### 8. After creating a bot. Go to resource.

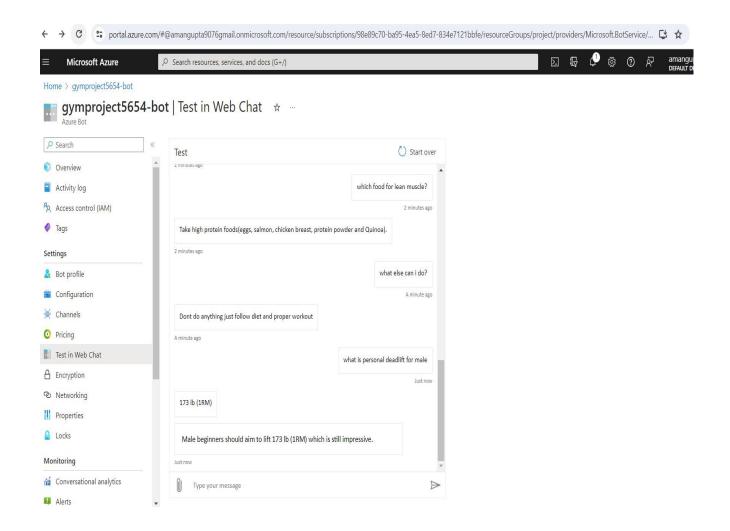


#### 9) Click on Test in web chat.



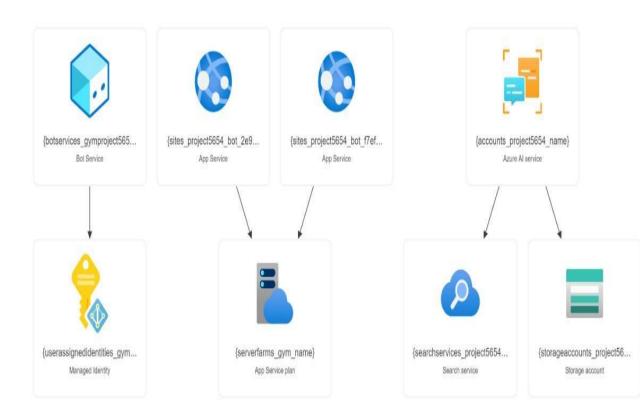






10 ) Click on Channels. There is option for Embed source code copy that. And Edit this Code in Visual Studio Code. And run.

#### 11) This is a Resource Visualizer.



## **CHAPTER 5:**

## **Website Overview**

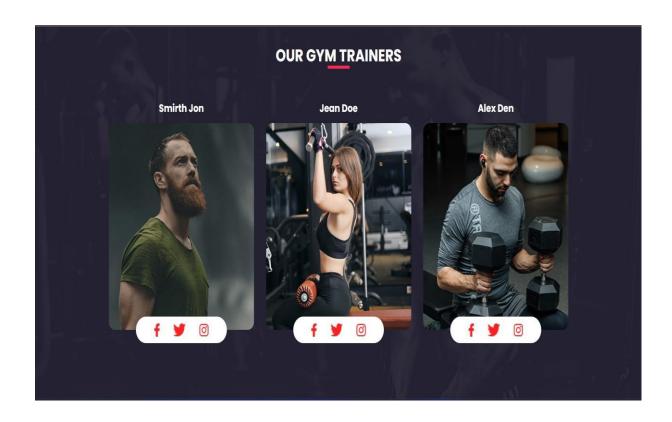
1. Users are first taken to the Home page.



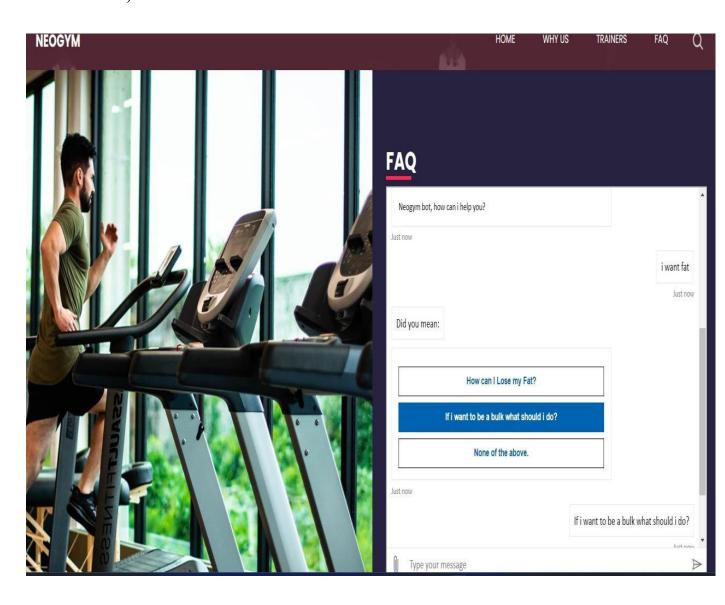
2. Benefits and different type of services listed on our website.



3. The website also features training by well-trained Gym.



4.In this website we have deploy Azure AI service (AI bot service, Q n A service).





# Chapter 6

#### **Benefits:**

Gym Management offers several benefits to users, including:

- \* Convenient access to a wide selection of equipment
- \* Personalized recommendations
- \* The ability to get train and be fit by specialized Trainer
- \* A responsive and mobile-friendly design

# Chapter 7

#### **Conclusion:**

In conclusion, the gym management project serves as a comprehensive solution for efficiently organizing and overseeing gym operations. By incorporating features such as member management, class scheduling, and financial tracking, the system enhances overall functionality. Its user-friendly interface ensures accessibility for both staff and members, contributing to a streamlined and effective gym experience. The project stands as a valuable tool in promoting a well-managed, customer-centric fitness facility.

# THANK YOU.