# InnoDecor Web App Using Azure Services

Project Documentation

Created By: Sakshi Gupta, Deepak Yadav

& Saif Idrisi

**Project Guide: John Devassy** 

#### **Abstract**

Innodecor, an innovative interior decor website hosted on **Azure Web App** and supported by **Azure Storage table**, offers users a comprehensive platform for home decoration inspiration and assistance. Through curated collections showcasing completed projects, users can explore diverse design ideas. Powered by **Azure QnA**, the 'Chat with Us' feature facilitates real-time interaction, providing personalized suggestions and answers to inquiries about services and products. Efficient communication channels, including a contact page and direct email and phone contacts, ensure timely resolution of user queries. Innodecor redefines the interior decor experience by seamlessly integrating technology and user-centric design, aiming to provide onvenience, inspiration, and support to its users.

# **Table of Contents**

1. Introduction
1.1. Fundamentals
1.2. Objectives
1.3. Scope
2. System requirements and specifications
2.1. What is SRS?
2.2. Role of SRS
2.3 Requirements Specification Document
2.4. Functional requirements
2.5. Non-Functional Requirements
2.6. Performance
2.7. Software Requirements
2.8. Hardware Requirements
3. Azure Services Used
4. Chapter 4: Implementation
5. Chapter 5: Website Overview
6. Chapter 6: Benefits
7. Chapter 7: Conclusion

# 1. Introduction

#### 1.1 Background:

Step into a digital haven where design aspirations are transformed into reality.

Our website represents the epitome of contemporary interior design, offering an immersive online journey.

Clients are invited to explore a curated selection of inspirations and tailor-made solutions, igniting their creativity.

With our platform, homeowners are empowered to effortlessly reimagine their living spaces, ensuring comfort and style converge seamlessly.

Embrace a world where the essence of home is redefined, accessible with just a click.

#### 1.2 Objective:

Our primary aim is to replicate the convenience and sophistication of traditional interior design services through innovative online features.

By introducing an intuitive appointment scheduling system, we seek to enhance client engagement and offer personalized consultations.

We prioritize offering customization options to ensure that our designs not only meet but exceed each client's expectations.

#### 1.3 **Scope**:

Our services encompass a comprehensive range of interior design solutions, meticulously tailored to individual preferences and needs.

Through our chatbot interface, users can engage in interactive design consultations, receiving personalized recommendations and advice.

We aim to streamline communication and engagement by collecting user details through our contact page, fostering seamless interaction.

It's important to note that our current scope is focused solely on the visual representation of completed projects.

## 2. System Requirements and Specifications

#### 2.1 What is SRS?

The Software Requirements Specification (SRS) serves as the cornerstone of our software development process.

It involves a thorough analysis of client needs and the translation of these requirements into a formal document.

The ultimate objective of the SRS phase is to produce a validated document that serves as a blueprint for further development.

#### **2.2 Role of SRS**:

The SRS plays a pivotal role in facilitating effective communication between clients and developers.

It serves as a roadmap, outlining the needs and expectations of all stakeholders involved in the project.

A well-crafted SRS ensures alignment and clarity, ultimately leading to successful project outcomes.

#### 2.3 Requirements Specification Document:

Our Requirements Specification Document serves as a comprehensive guide, detailing the scope and nature of our software project.

It encompasses various aspects such as project purpose, scope, functional and non-functional requirements, and environmental considerations.

Additionally, it outlines safety and security requirements, ensuring the integrity and reliability of our software solution.

#### 2.4 Functional Requirements:

Functional requirements define the specific functionalities that our system must support.

These requirements outline the various states of input data, as well as the processing methods required to generate output data.

Essentially, functional requirements dictate the precise behaviors and functions that our software application must exhibit.

#### 2.5 Non-Functional Requirements:

Non-functional requirements focus on evaluating the performance and operation of our system.

These requirements encompass aspects such as reliability, performance, and security, setting the standards for our system's performance and operational constraints.

For instance, our system must operate smoothly without bugs and ensure minimal lag when displaying content.

#### 2.6 Performance:

Evaluating the performance of our deployed website is essential to ensure it meets predefined goals.

This evaluation involves identifying any bottlenecks that may impact performance and determining whether the application aligns with performance targets.

Defining metrics such as response time, latency, throughput, and resource utilization is critical to this evaluation process, enabling us to optimize performance and efficiency.

#### 2.7 Software Requirements:

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

#### 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

# 3. <u>Used Azure Services</u>

#### A. Azure Storage Account:

An Azure storage account contains all of your Azure Storage data objects: blobs, files, queues, and tables. The storage account provides a unique namespace for your Azure Storage data that's accessible from anywhere in the world over HTTP or HTTPS. Data in your storage account is durable and highly available, secure, and massively scalable.

#### **Types of storage accounts**

Azure Storage offers several types of storage accounts. Each type supports different features and has its own pricing model.

The following table describes the types of storage accounts recommended by Microsoft for most scenarios. All of these use the Azure Resource Manager deployment model.

- 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.

#### B. 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.

#### 6. DevOps optimization

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

#### 7. Access on-premises data

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

#### C. 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) are 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.

#### D. 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.

#### E. Azure Application Insights

the key features of Azure Application Insights, a powerful service for monitoring and improving your web applications:

#### • Investigate:

- Application Dashboard: Provides an at-a-glance assessment of your application's health and performance.
- Application Map: Visualizes your application's architecture and interactions between components.

- Live Metrics: Real-time analytics dashboard for insights into application activity and performance.
- Transaction Search: Trace and diagnose transactions to identify issues and optimize performance.
- Availability View: Proactively monitor and test application endpoints.
- Failures View: Identify and analyze failures to minimize downtime.
- ➤ Performance View: Review application performance metrics and potential bottlenecks.

#### • Monitoring Alerts:

Monitor various aspects of your application and trigger actions based on thresholds.

#### • Usage Analysis:

- ➤ Understand user interactions, sessions, and events.
- ➤ Analyze conversion rates using funnels.
- ➤ Visualize user paths with flows.
- > Group users by shared characteristics using cohorts.

#### • Code Analysis:

- ➤ Profiler: Capture and view performance traces.
- ➤ Code Optimizations: Use AI to create more efficient applications.
- ➤ Snapshot Debugger: Automatically collect debug snapshots for .NET applications.

#### F. Log Analytics Workspace

A Log Analytics workspace is a unique environment for log data from various Azure services, including Azure Monitor, Microsoft Sentinel, and Microsoft Defender for Cloud.

Each workspace has its own data repository and configuration, potentially combining data from multiple services.

#### **Key Points:**

- ➤ Data Structure: Workspaces contain tables with organized columns and rows of data. Log queries retrieve data from these tables.
- ➤ Cost: No direct cost for creating or maintaining a workspace. You're charged for data ingestion and retention.
- ➤ Workspace Transformation: Allows filtering and transforming data before ingestion.
- ➤ Create a Workspace: Use the Azure portal to create a new workspace based on your requirements.

#### G. Azure Service Health

Azure Service Health provides valuable alerts and guidance when Azure service issues, such as outages and planned maintenance, impact your resources. It's like having a vigilant health monitor for your Azure environment!

Here are some key points about Azure Service Health:

#### **Purpose and Functionality:**

- > Service Health Dashboard: Access an interactive dashboard in the Azure portal to check active, upcoming, and past issues affecting Azure services.
- Alerts and Notifications: Set up Service Health alerts to receive timely notifications via your preferred communication channels (email, SMS, etc.) when service issues or changes may impact your resources.
- ➤ Planned Maintenance Insights: Stay informed about scheduled maintenance events that might affect your services.

#### **Availability:**

- ➤ Free Service: Azure Service Health is available at no additional cost.
- ➤ Accessible in the Portal: You can access it directly from the Azure portal.

#### H. App Service Backup

In Azure App Service, you can easily restore app backups. You can also make on-demand custom backups or configure scheduled custom backups. You can restore a backup by overwriting an existing app by restoring to a new app or slot. This article shows you how to restore a backup and make custom backups.

Backup and restore are supported in Basic, Standard, Premium, and Isolated tiers. For Basic tier, only the production slot can be backed up and restored.

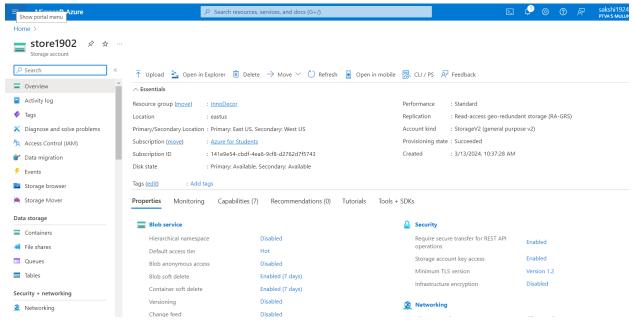
#### For App Service Environments:

- Automatic backups can be restored to a target app within the App Service environment itself, not in another App Service environment.
- Custom backups can be restored to a target app in another App Service environment, such as from App Service Environment v2 to App Service Environment v3.
- ➤ Backups can be restored to target app of the same OS platform as the source app.

# 4. Implementation

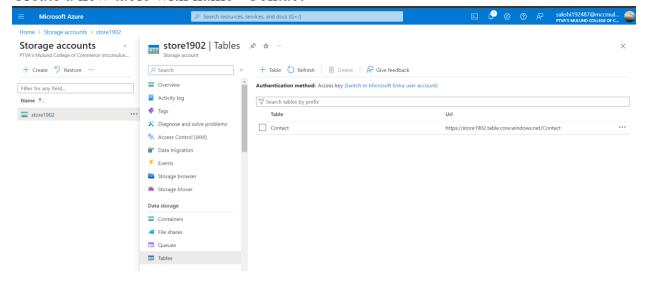
#### Since I have already created so I will just demonstrate the steps.

1. I have created Storage Account with unique storage account name.

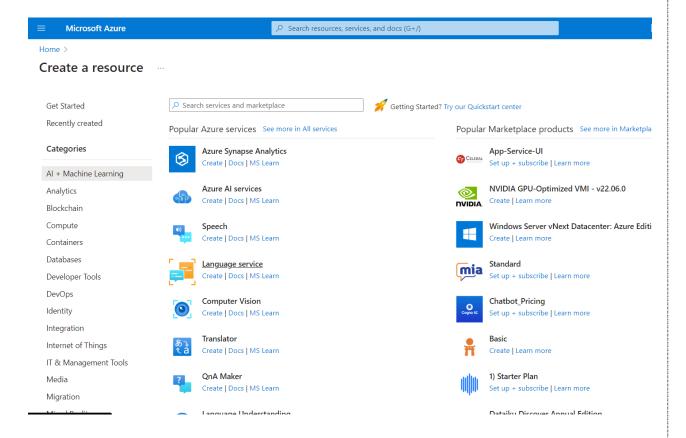


Click on Table in Data Storage (Left Panel)

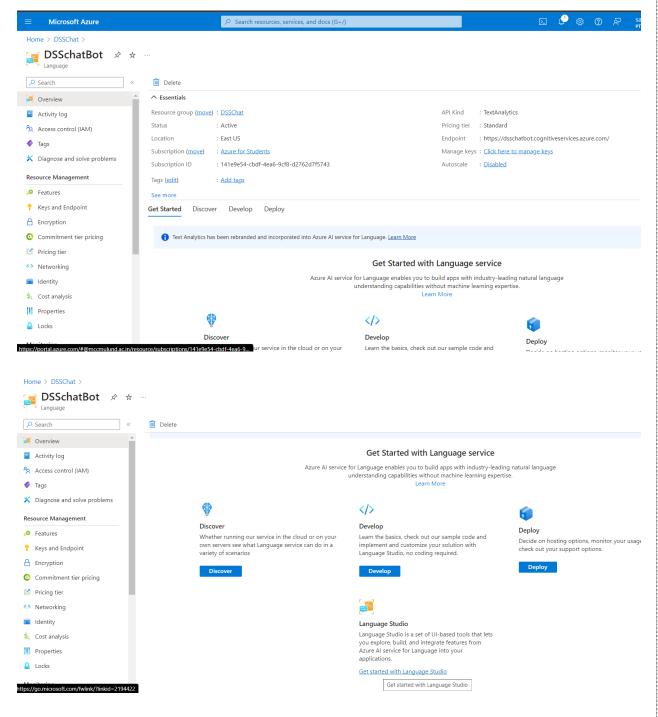
Create a new table with name "Contact"



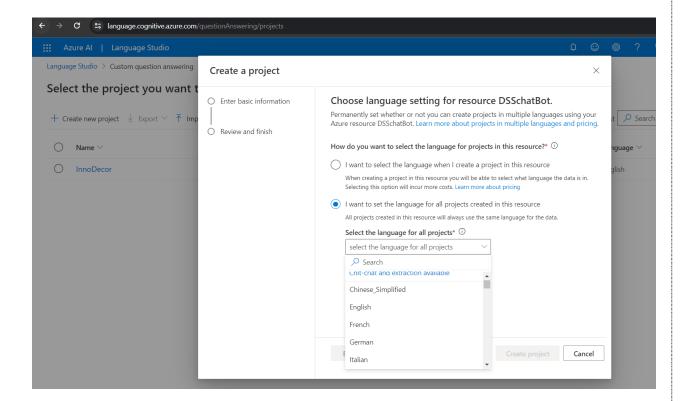
# Go to Home -> All Resource -> AI + Machine Learning -> Language Service



Select Custom Question Answering ->Continue to Create Your Resource-> In Create Language fill all the details -> Review + Create

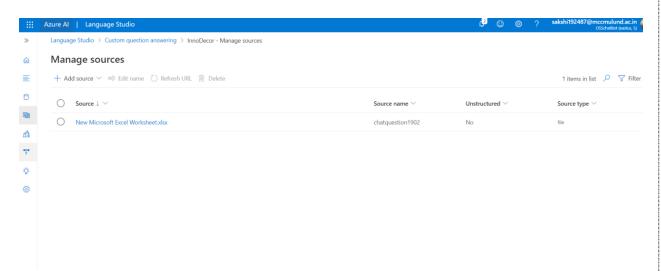


Click on Language Studio ->

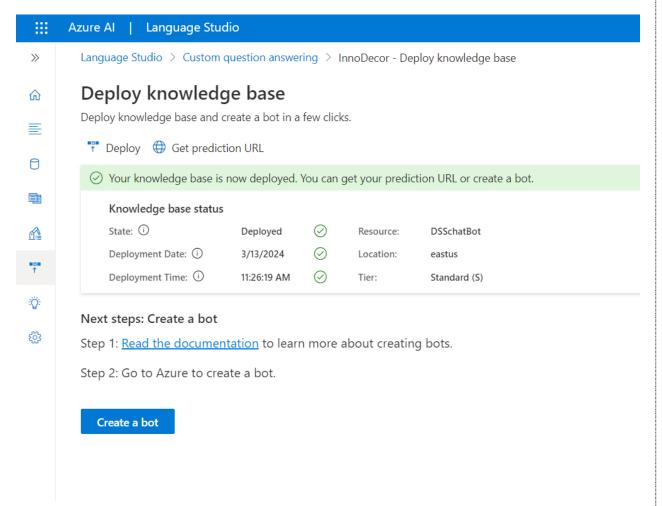


Fill all the details by clicking Next and then Click on Create Project

Add you excel file of customized question and answer in Manage sources

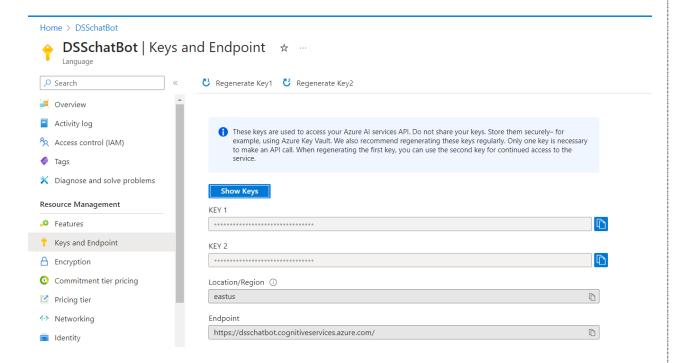


Click on Deploy (in Deploy Knowledge Base)->Click on Bot to create Chatbot

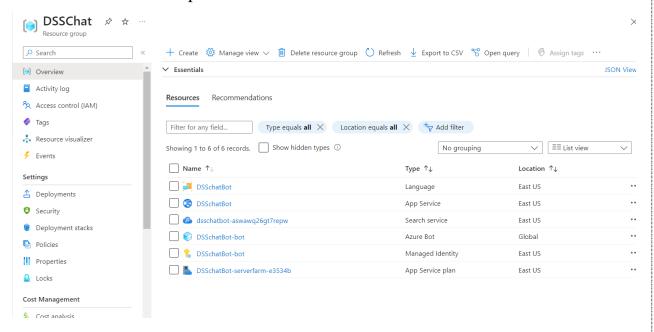


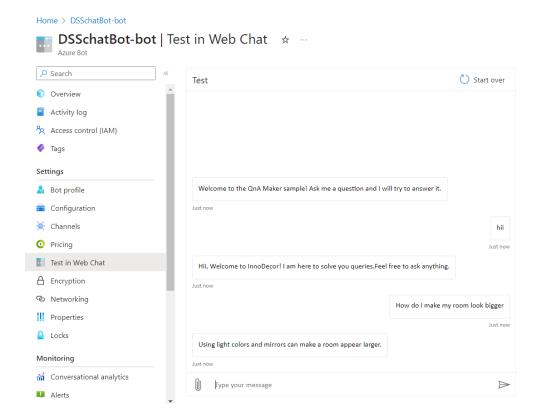
After Clicking on Create a Bot -> In Azure Portal Fill Custom Deployment Section

In Web App for language resources key you can go to chatbot (language) In key and endpoint, you will get a key copy it and paste it in Custom Deployment Web App Part.



# After filling all details click on Review + Create Chatbot Resource Group Will Look like this





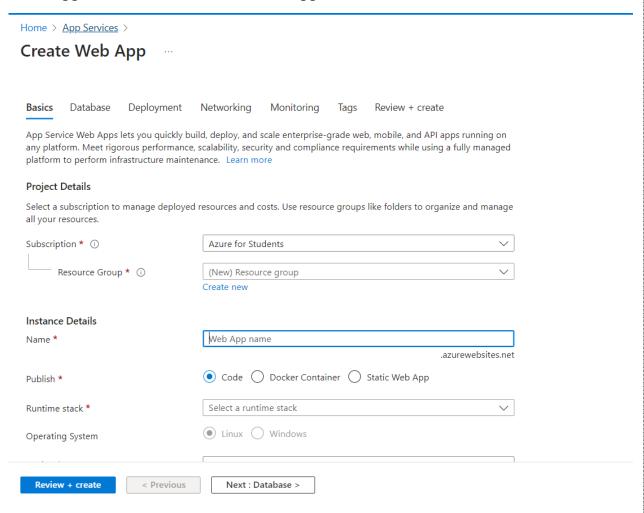
We can also test our Chatbot

Now Let's make Our Web App For Creating WebApp we have two options

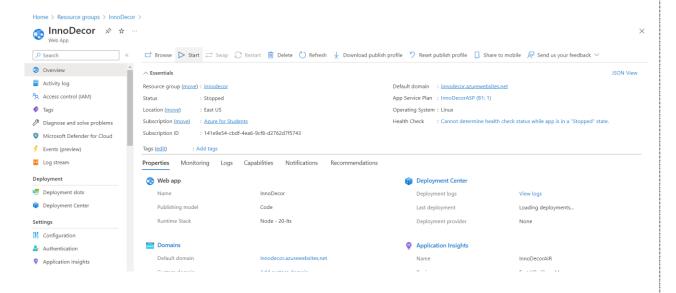
- 1) Azure Portal
- 2) Visual Studio Code

#### **Azure Portal**

Go to App Services -> Create -> Web App ->

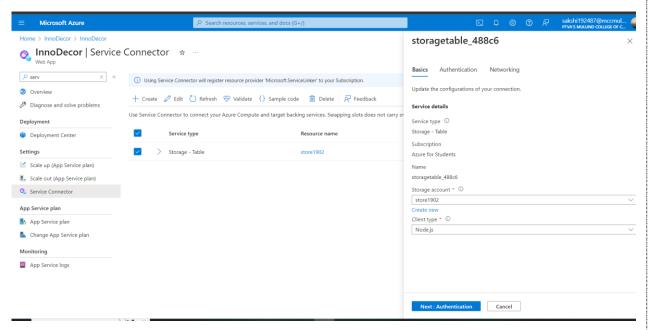


#### Fill the details and Click on Review + Create -> Go to resource



# Connect storage account to web app by using Service Connector in App Services

App Service -> Service Connector (Left Panel) -> Create



#### Connect storage account to web app by using Azure CLI

```
webapp app-insights secret(auto)

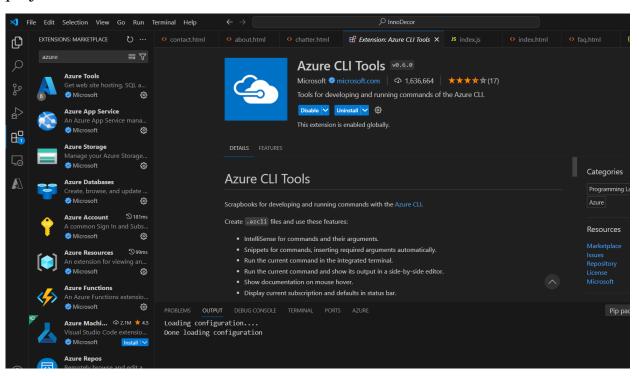
SC:\Users\ADMIN> az webapp connection create storage-table
Connection name is not specified, use generated one: --connection storagetable_h2xmq
Auth info is not specified, use default one: --system-identity
The resource group which contains the webapp (--resource-group/-g): Innodecor
Name of the webapp (--name/-n):
Name of the webapp (--name/-n):
Name of the webapp (--name/-n) should not be blank

SC:\Users\ADMIN> az webapp connection create storage-table
Connection name is not specified, use generated one: --connection storagetable_r43ci
Auth info is not specified, use default one: --system-identity
The resource group which contains the webapp (--resource-group/-g): Innodecor
Name of the webapp (--name/-n): Innobecor
The resource group which contains the storage account (--target-resource-group/-tg): Innodecor
Name of the storage account (--account): store1902
Apply interactive input arguments: --resource-group Innodecor --target-resource-group Innodecor --account store1902
Client type is not specified, use detected one: --client-type nodejs

{
```

We Can also create web App using Visual Studio Code

First Download All the Azure Extension which will be required for the project

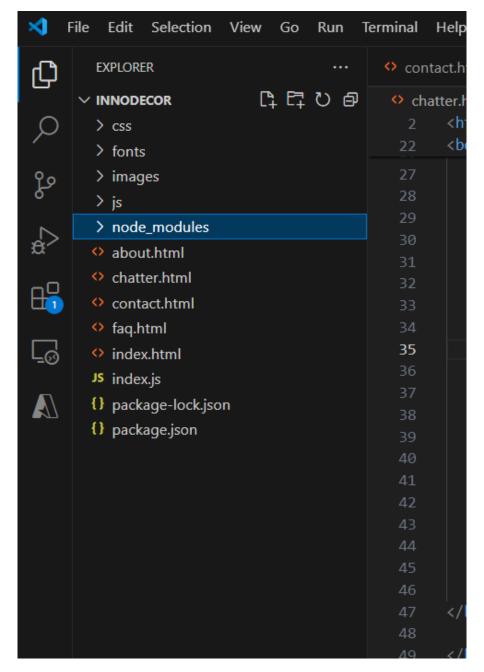


Such as Azure Account, Azure tools, Azure App Service, Azure Cli, Azure resources etc.

My Project is based on Node.js so I had installed Node.js in my pc and I had also installed nodes.js packages in the folder where I have my website files and folders.

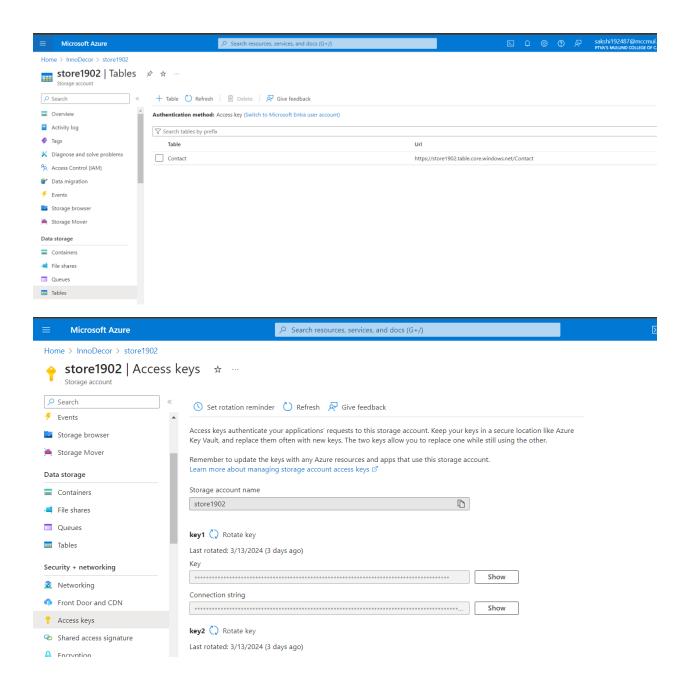
for that I have run this command

npm install express ejs body-parser azure-storage



Node.js packages had been installed in node\_modules

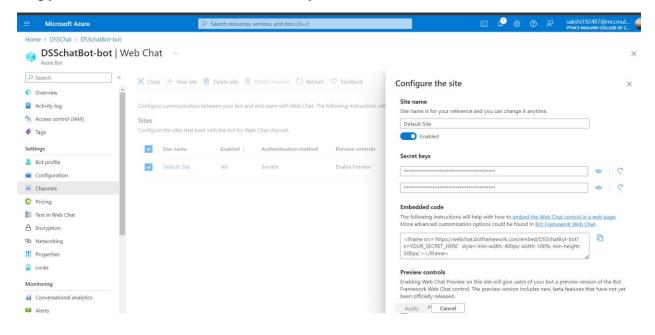
Make Connection of **Azure Storage Table** with **Azure Web App** via Connection String of Azure Storage Table.



Copy Table Name, URL and Key from Access Key Paste it in Index.js for Connection

```
| File | Edit | Selection | View | Go | Run | Terminal | Help | C -> | PlanoDecor | PlanoBecor |
```

For Connection of Azure AI Language 'QnA Maker' and Azure Web App Copy the embedded code and secret key

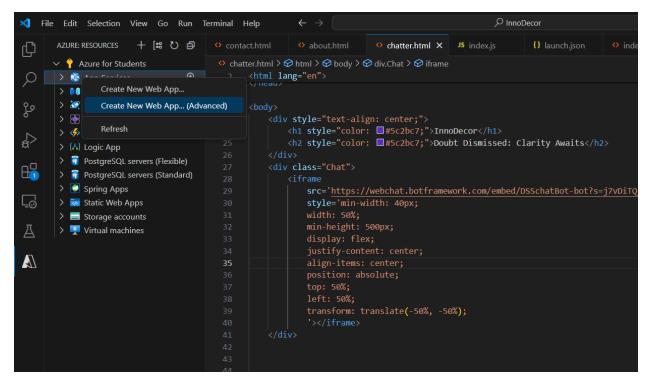


Replace 'YOUR SECRET HERE' of Embedded Code with Secret Keys.

Paste updated Embedded Code in your html page where we want our chatbot work.

Here we are done with Coding and all Lets create Web App using Visual Studio Code

Azure for Students -> App Service(Right Click) -> Create New Web App .. (Advanced)



Enter Web App Name click on Enter and fill the detail and click on Enter

```
X File Edit Selection View Go Run Terminal Help
     AZURE: RESOURCES + [≌ ひ ⑤ ◆ contact.html
     Azure for Students
                           Q 2 <html lang="€
      V 👶 App Services
       > 📀 DSSchatBot Stopped
       > 📀 InnoDecor Stopped
                                           > 😝 Azure Arc-enabled machines
       > Z Azure Cosmos DB
       > Container Apps
       Function App
      > {Å} Logic App
        PostgreSQL servers (Flexible)
                                                  src='https://webchat.botframework.com/embed/DSSchatBot-bot?s=j7vDiTQ_qnM._wCAhVbQOHn18BMsOvlmOyPyHtu8CzDGif4lauci
style='min-width: 40px;
        PostgreSQL servers (Standard)
```

Once Web App is created we can deploy our website by 2 ways

- 1) VS Code
- 2) File Zilla

#### **VS** Code

Right Click on Web App Name -> Deploy to Web App

```
🔀 File Edit Selection View Go Run Terminal Help
                                AZURE: RESOURCES
                                                                                                   + [≌ ひ 卣 ⇔ contact.html
                                                                                                                                                                                                                                                                                                                                       {} launch.json
                              ♦ chatter.html > ♦ html > ♦ body > ♦ div.Chat > ♦ iframe
                                                                                                                                                                                                                  <html lang="en">
  Q

✓ Services

App Services

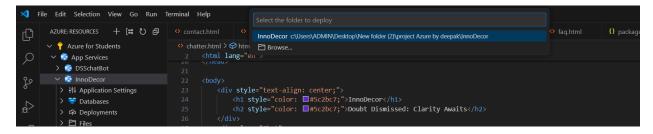
App Services

Output

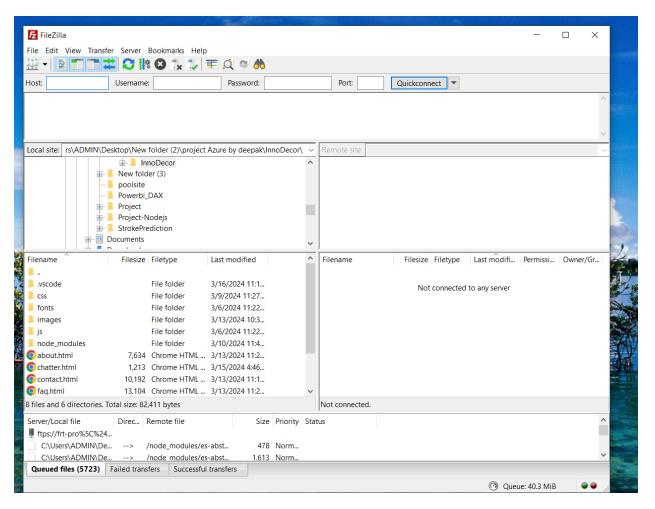
Description

Desc
                                      > 📀 DSSchatBot
                                       V 🍪 InnoDr
                                                                                                     Browse Website
                                                                                                                                                                                                                                      > tt Appl
                                             > 💗 Data
                                                                                                     Deploy to Web App...
                                                                                                                                                                                                                                                        <h2 style="color: \_#5c2bc7;">Doubt Dismissed: Clarity Awaits</h2>
                                             > 🗘 Depl
                                                                                                   Configure Deployment Source...
                                            > 🛅 Files
                                                                                                                                                                                                                                       <div class="Chat">
                                            > 🔁 Logs
                                                                                                     Start
                                             > 🦬 Web.
                                                                                                      Stop
                                                                                                                                                                                                                                                                            style='min-width: 40px;
```

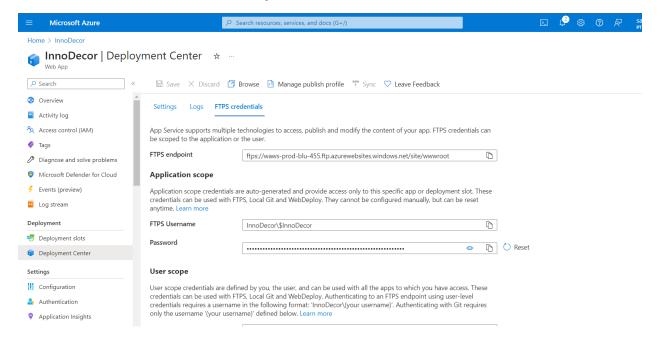
Choose the folder which contains files and folder related to website and Click on Enter

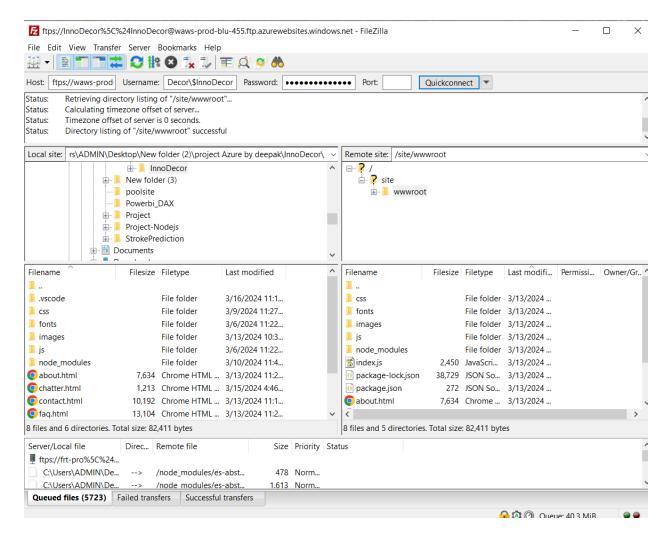


#### **FileZilla**



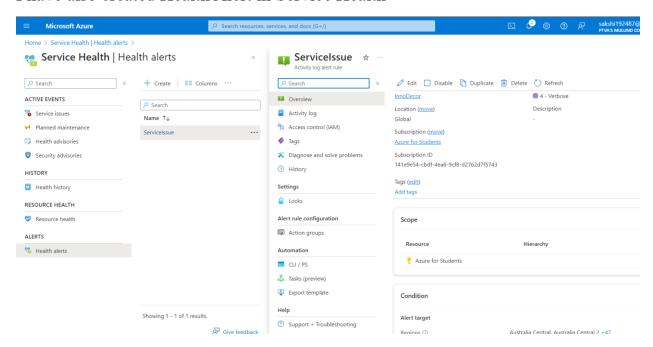
# Web App -> Deployment Center -> copy FTPS endpoints, Username, Password Paste in FileZilla and Click on Quickconnect



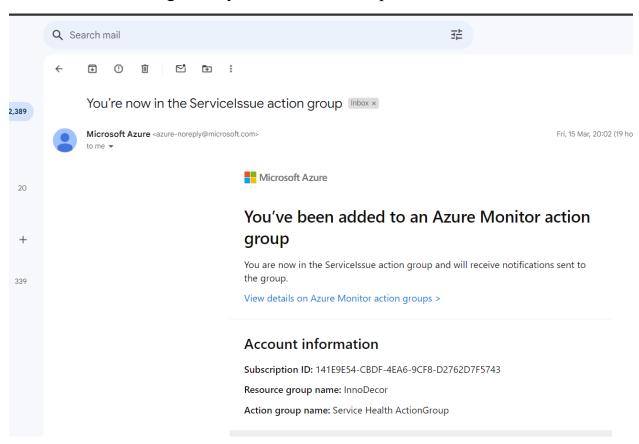


Drag files and folder from left of 'Local Site' to Right of 'Remote Site' Now it is completed we can host our website.

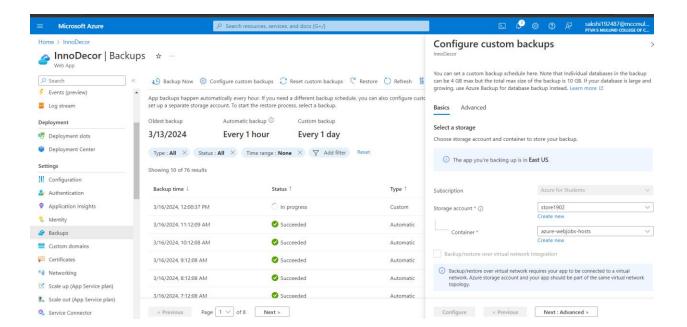
#### I have also created Health Alert in Service Health



#### In Notification I had given my email address and phone no for alert notification

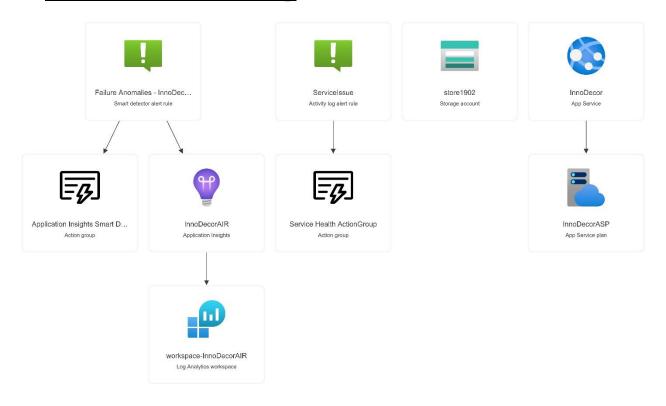


I have also added Customized Backup in Azure App Service

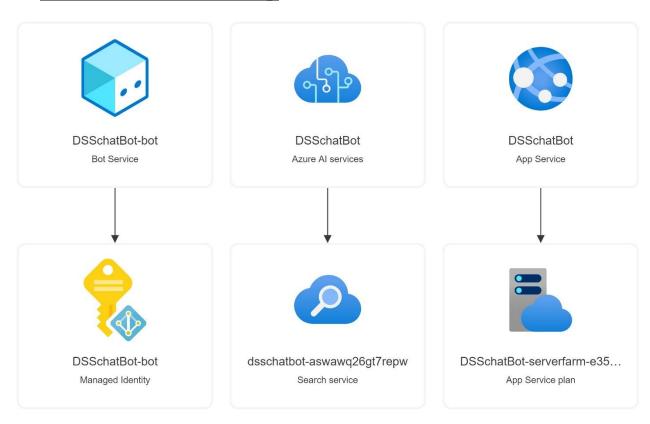


# Resource Visualizer

## **InnoDecor Resource Group**

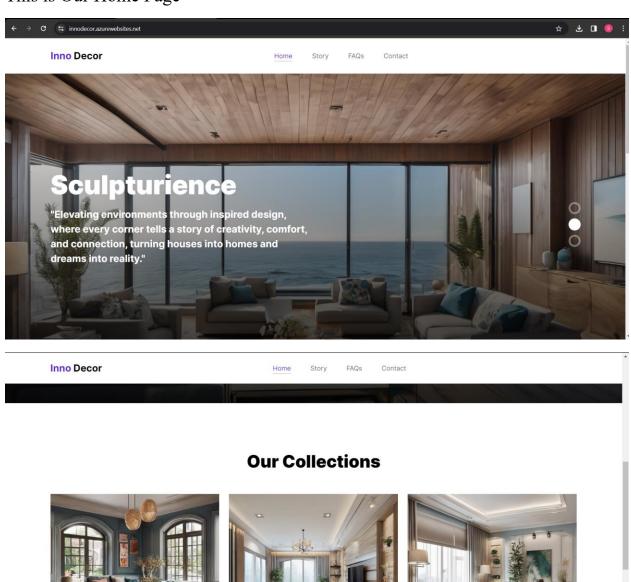


## **DSSChat Resource Group**



# 5. Website Overview

#### This is Our Home Page



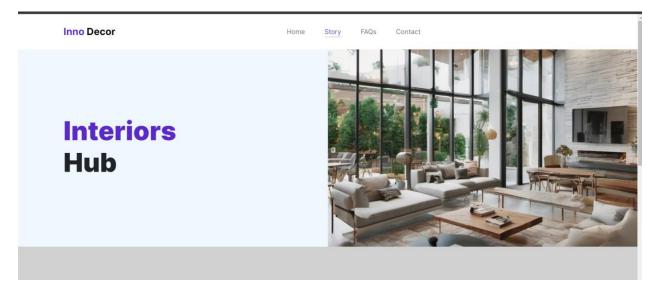


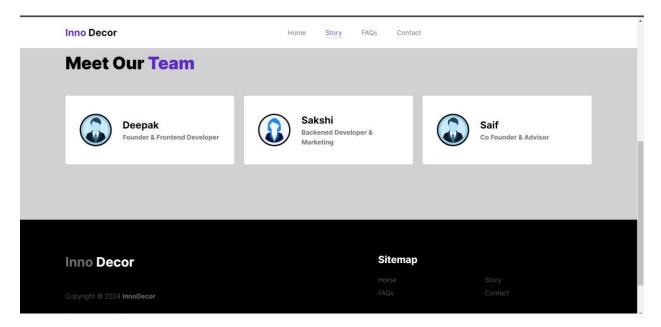






### Our Story Page





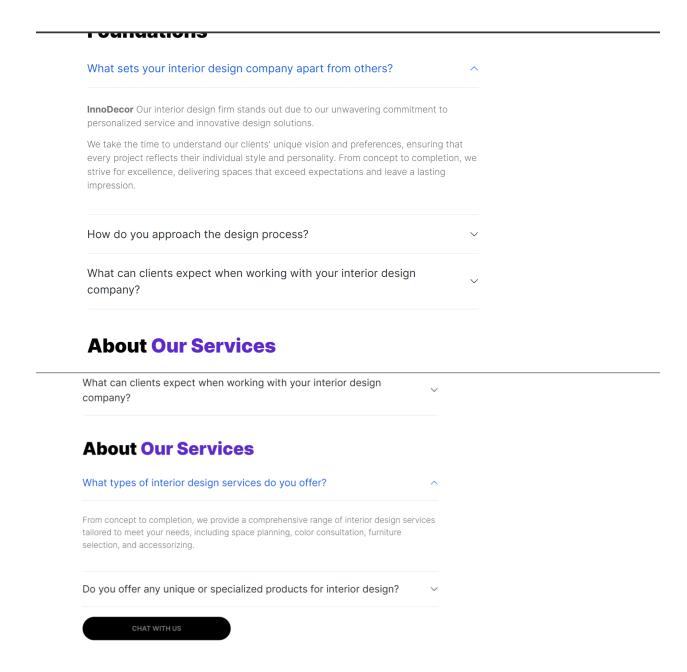
Frequently Asked Question Page

**Inno** Decor

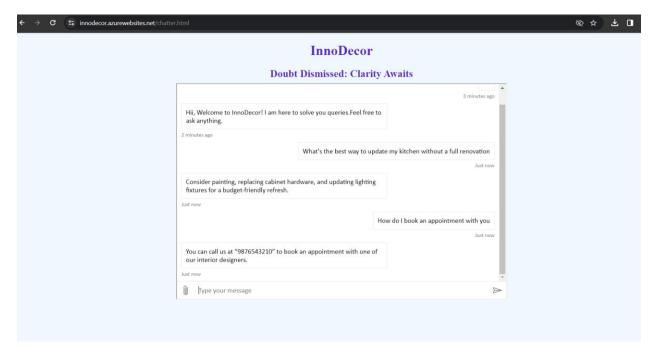
Unlocking Answers:
Your Favorite Questions, Our
Captivating Responses

Home Story FAQs Contact

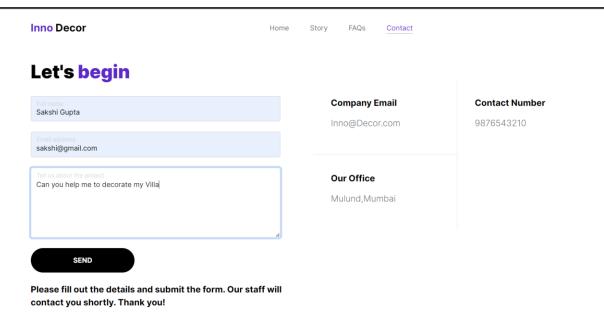
**Foundations** 



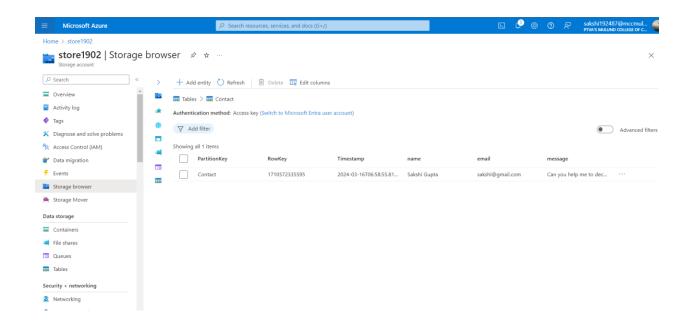
Click on Chat with Us to connect with Azure QnA Maker



#### Contact Us Page



If I fill the details and Click on Send Button data will be stored in Azure Storage Table



# 6. Benefits

- Interactive Assistance: Innodecor offers a unique solution through its "Chat with Us" feature, powered by Azure QnA. This allows users to engage in real-time conversations to receive personalized suggestions for home decoration, answers to queries about services and products, enhancing their browsing experience.
- Inspiration through Collections: Innodecor's curated collections showcase completed projects, providing users with a wealth of inspiration and ideas for their own home decor endeavors. These collections serve as a valuable resource for users seeking guidance and creativity.
- Efficient Communication Channels: In addition to the chat feature, Innodecor provides multiple avenues for communication, including a contact form, email, and phone number. This ensures that users can easily reach out with their queries or feedback, with the assurance of prompt and personalized responses.

# 7. Conclusion

Innodecor sets itself apart from traditional interior decor websites by prioritizing user engagement, assistance, and inspiration. By leveraging innovative technologies like Azure QnA, it offers a seamless and interactive experience, empowering users to make informed decisions about their home decor projects. With its commitment to efficient communication and personalized support, Innodecor aims to redefine the online interior decor experience, making it more accessible and enjoyable for all users.