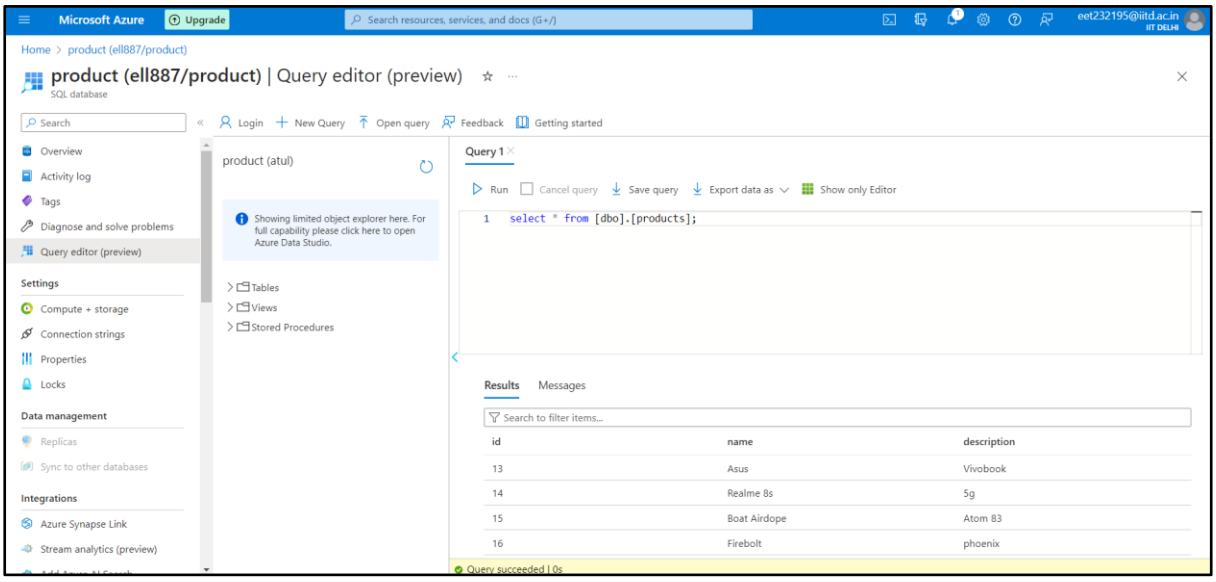
ELL887 Cloud Computing

Assignment 2 – Azure

Name: Atul Kumar Rana

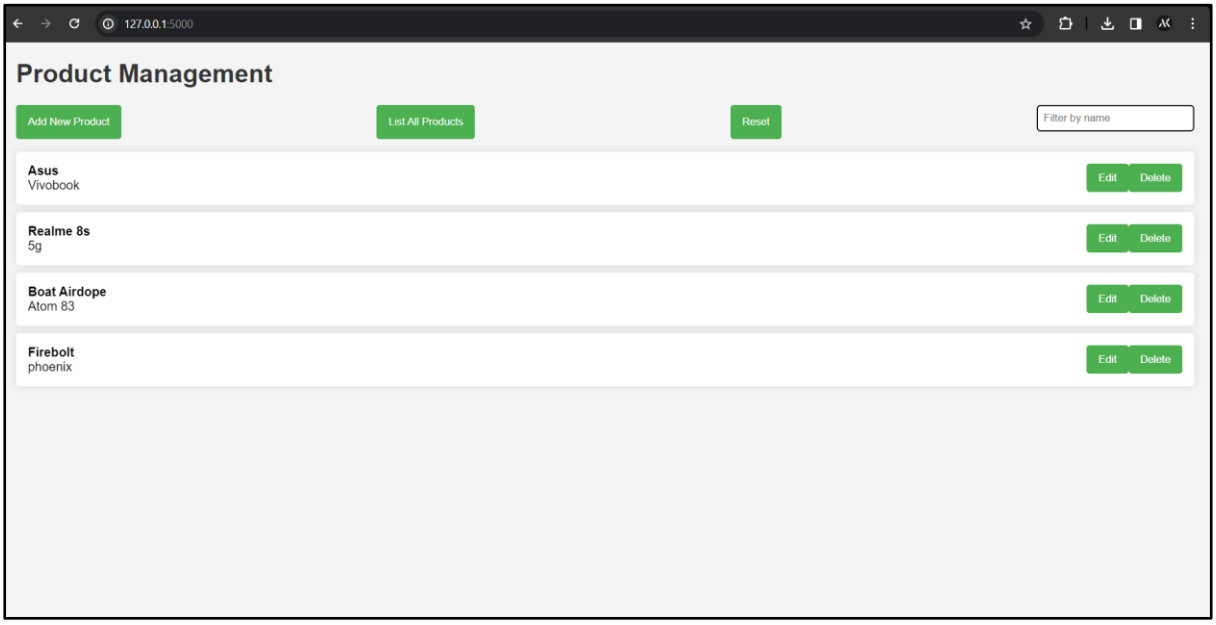
Entry No: 2023EET2195

Create a database to store information about products

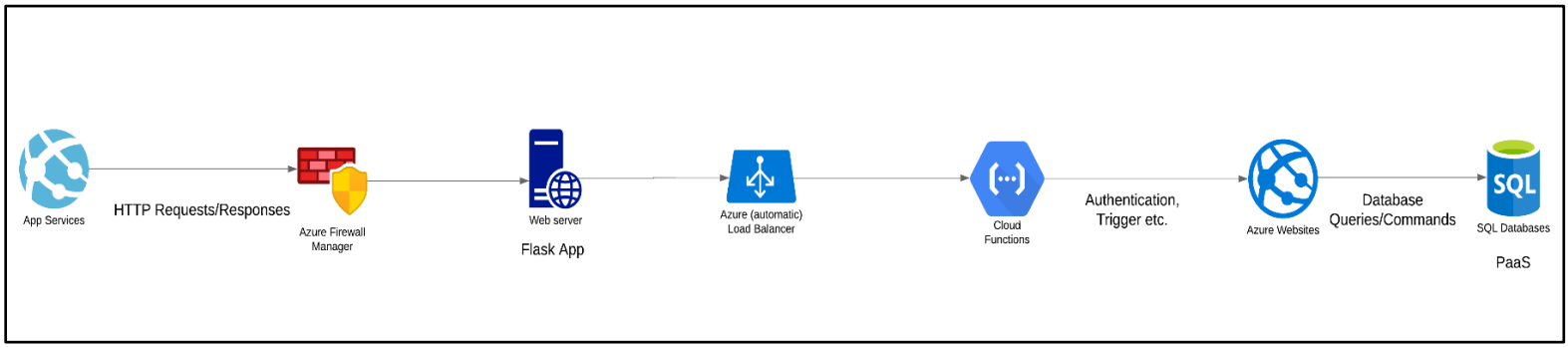


Create a Web app that does the following:

- **Add new products**
- **List all products**



Architecture diagram of the system



The architecture decisions

Architecture	Decision	Rationale
Cloud Deployment (Azure)	Choosing a cloud provider, in this case, Azure, allows for scalable and flexible infrastructure management.	Azure provides a wide range of services, including database solutions, load balancing, and security services, making it suitable for hosting and managing web applications
Azure Load Balancer	Implementing Azure Load Balancer distributes incoming network traffic across multiple web server instances	Load balancing enhances the availability and fault tolerance of the application by ensuring that no single server bears too much load
Web Server (Flask App)	Using a farm of web servers running the Flask application behind the load balancer	Distributing the application across multiple servers allows for horizontal scalability, ensuring efficient handling of increased user traffic
Azure Firewall	Implementing Azure Firewall as a network-level security service	Azure Firewall protects the application and database from unauthorized access, ensuring secure communication and preventing malicious activity

Azure Functions	Utilize Azure Functions	Leverage Azure Active Directory for secure authentication, utilize various triggers based on workload requirements, adopt a serverless design for scalability, manage dependencies efficiently, integrate with Azure Application Insights for robust logging and monitoring, implement retry mechanisms for resilience, and secure environment configurations using Azure Key Vault for a comprehensive and resilient serverless architecture.
Azure SQL Database	Storing application data in Azure SQL Database	Azure SQL Database is a managed relational database service, providing high availability, security, and scalability. It's suitable for storing structured data used by the Flask application

URL to access application:

http://eet232195.azurewebsites.net/

This link may not be working sometimes because Azure app service is needed to deployed and database needed to be active before using the link.