**Azure Portfolio Projects**

**Overview**

Each project in this 5 project portfolio is designed to demonstrate my hands-on experience with Azure and cloud technologies. The projects cover core aspects such as compute and identity management, networking and storage, monitoring, backup, and recovery, identity integration, and app service deployment.

# Project 5: Azure App Service Deployment and Scaling

Topics Covered: App Service, Deployment Slots, Autoscaling, Backup, Monitoring

Summary

This project focuses on deploying a web application using Azure App Service, utilizing deployment slots for testing, configuring autoscaling based on metrics, and setting up backups.

## Scenario

A company wants to deploy a web application using Azure App Service, set up deployment slots for testing, enable autoscaling based on demand, and configure backups for disaster recovery.

## Steps

* Step: Create an App Service

1. Navigate to App Services > Create.
2. Select the subscription, resource group, and enter a name for the app.
3. Choose a Runtime Stack (e.g., .NET, Node.js, Python) and select a pricing tier.
4. Review and create the App Service.

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* Step: Deploy the Web Application

1. Use Azure DevOps or GitHub Actions to set up a CI/CD pipeline.
2. Deploy the sample web application to the App Service.
3. Verify the deployment by accessing the application URL.

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Under the Project settings you can add Different service Connections the one im using is Azure Resource Manager   
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Connect your GitHub Account if you want to post it there

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* Step: Set Up Deployment Slots

1. Navigate to the App Service > Deployment Slots > Add Slot.
2. Create a slot named 'Staging'.
3. Deploy a new version of the application to the Staging slot.
4. Swap slots to promote the staging version to production after testing.

The Free trial does not allow you to have Additional deployment slots but if your not on a free trial then you can Alternate between a staging slot to a production slot when your done testing

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* Step: Configure Autoscaling

1. Navigate to the App Service Plan > Scale Out (App Service Plan).
2. Set up autoscaling based on metrics such as CPU usage or request count.
3. Define rules (e.g., scale out by 1 instance if CPU > 70% for 10 minutes).

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Since I am on the Free version using my student account it does not allow me to create a scale out plan as there is not allow scale out instances   
But if you do then you would just need to create a scale out for CPU usage and define the rule to limit CPU power

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* Step: Backup and Restore

1. Navigate to the App Service > Backups > Configure.
2. Set up a backup schedule to back up the app and its associated database.
3. Perform a manual backup and verify it by restoring it to a new App Service.

You will need a upgraded plan to set up back up

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* Step: Monitor and Configure Alerts

1. Navigate to App Service > Monitoring > Metrics.
2. Set up metrics to monitor app performance (e.g., CPU usage, response time).

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