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**Weekly Coding Assessment – 5**

**Azure Devops**

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**Explain process of Azure Devops cicd pipeline**

**Devops: Development (Dev) + Ops (operations)**

DevOps is a set of practices that combines software development (Dev) and IT operations (Ops). It aims to shorten the systems development life cycle and provide continuous delivery with high software quality.

**Azure Devops:** Microsoft offers a full set of development tools called Azure DevOps, which is a component of the Microsoft Azure cloud platform. The software development lifecycle is supported by a variety of services that enable teams to plan, work together on code development, build and test applications, and deploy them effectively. Azure DevOps is a comprehensive platform designed to streamline the development lifecycle through automation. It encompasses tools for version control, continuous integration (CI), and continuous delivery (CD).

**Azure Pipelines:**

Azure Pipelines automatically builds and tests code projects. It supports all major languages and project types and combines [continuous integration](https://learn.microsoft.com/en-us/azure/devops/pipelines/get-started/what-is-azure-pipelines?view=azure-devops#continuous-integration), [continuous delivery](https://learn.microsoft.com/en-us/azure/devops/pipelines/get-started/what-is-azure-pipelines?view=azure-devops#continuous-delivery), and [continuous testing](https://learn.microsoft.com/en-us/azure/devops/pipelines/get-started/what-is-azure-pipelines?view=azure-devops#continuous-testing) to build, test, and deliver your code to any destination.

**CI/CD:**

Azure DevOps CI/CD functions as a well-coordinated transportation system for our code. Continuous Integration (CI) serves as a checkpoint, ensuring our code is thoroughly examined before embarking on its journey. Continuous Delivery/Deployment (CD) functions as a reliable guide, effortlessly escorting our code from the development stage to its intended destination. In essence, it's a streamlined system that guarantees your software travels seamlessly from creation to deployment without encountering any hitches along the way.

**Process of Creating Azure Devops cicd pipeline**

* Create a new project in Azure DevOps.
* Set up a version control repository (like Git) for your code.
* Build Pipeline:
* Create a build pipeline to compile and validate your code.
* Define tasks like restoring dependencies and compiling the source code.
* **Continuous Integration (CI):**
* Enable CI to automatically trigger builds when code changes.
* Ensure your code compiles successfully and passes basic tests.
* Artifact Storage:
* Save build artifacts (compiled code) in Azure DevOps artifacts.
* Release Pipeline:
* Develop a release pipeline for managing deployments.
* Deployment Tasks:
* Specify deployment tasks for each environment

**Explain azure sql server pool integration with azure synapse.**

**Azure Synapse:**

Azure Synapse is a cloud-based analytics service provided by Microsoft Azure. In simple words, it's a platform that allows organizations to analyze and derive insights from large volumes of data.

Synapse allows us to:

1. Data Integration.
2. Big Data And Data Warehousing.
3. Analytics.
4. Real-Time Analytics.
5. Data Exploration.
6. Integration with Power BI.
7. Security and Compliance.
8. Scalability.

**Azure sql server pool integration with azure synapse.**

Step-1:

First we need to search for azure synapse analytics in azure portal then we need to create a Sql workspace account.

Step-2:

While creating the workspace we need to create a data lake gen2 storage account and container in that storage account.

Step-3:

After creating workspace we need to launch that workspace then we will see a dashboard. In that we need to open Data navigator and we need to open linked data there we can find our storage account and container which is created in step-2. In that we need to upload a file which we need to perform sql pool integration.

Step-4:

And Now we need to open Manage navigator to find SQL pools.

In that we can find a inbuilt sql pool to perform serverless integration.

Step-5:

In that SQL pools we can also create a Dedicated SQL pools to integrate.

Step-6:

After Poll creation We need to open Develop navigator and we can find +Sql Script by clicking on it we can perform Sql Queries Using Serverless and Dedicated pool integrations on the file which we uploaded in our storage container.