**Deployment Plan for CardanoDataSetEnrichment Solution**

**Introduction:**

This software takes a dataset as input, enriches it by adding data which is fetched from an external Api and outputs the enriched dataset to be available to other colleagues. So we can assume that this endpoint is a part of a bigger project.

**Data Enrichment Process diagram:**

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Description automatically generated

**Development Phase:**

Set up a project in Azure DevOps and configure boards or using current project.

Set up source control using Azure DevOps Git as version control systems.

Create a development branch and implement the required features.

Continuously integrate code changes into the development branch.

**Continuous Integration (CI):**

Configure a CI pipeline in Azure DevOps to build the application.

Use a build agent to compile the code, run tests, and generate artifacts.

Trigger the CI pipeline on every code commit to the development branch.

**Containerization with Docker:**

Create a Dockerfile to define the application's container image.

Build and push the Docker image to a container registry (e.g., Azure Container Registry).

Ensure that the necessary dependencies and configurations are included in the Docker image.

**Deployment Phase:**

Configure a CD pipeline in Azure DevOps to deploy the Docker image to a Kubernetes cluster.

Use Kubernetes manifests (YAML files) to define the deployment, services, and other resources.

Deploy the Docker image to the Kubernetes cluster using Azure Kubernetes Service (AKS).

Enable auto-scaling and load balancing configurations based on application requirements.

**Infrastructure as Code (IaC):**

Use a tool like Azure Resource Manager (ARM) templates or Terraform to define infrastructure as code.

**Continuous Delivery (CD):**

Use Azure DevOps release management features to manage and track releases.

Automate the CD pipeline to deploy changes to staging and production environments.

**Monitoring and Observability:**

Integrate Application Insights into the application to monitor its performance, availability, and exceptions.

**Security and Compliance:**

Implement security measures such as authentication, authorization.