Development Doc

The CICD pipeline is how we manage version control as well as run the whole process. It is based in Azure DevOps from where it branches out to Github and other parts of the pipeline from the backend to the frontend. This pipeline also updates automatically every Friday which helps greatly with version control and allows us to focus just on coding.

Azure is our main repo and where the pipeline is started from as Github wouldn't allow us to connect the pipeline from there, but it would work the other way around. As mentioned, Azure acts as our repo where the data is held in the cloud for use throughout the pipeline. Azure is also where Microsoft Fabric is based which grants us access to PowerBI and LakeOne with the former being used for the frontend and the latter the backend. Because of how the pipeline is set up, we can do all our coding here and the pipeline will implement the code when it comes time to update.

The Lambda workstation is what connects the backend to the frontend and allows them to communicate. They primarily do this through GET calls and the like with Lambda ferrying the call between the two sides. API modules were also created to make the calls easier to communicate with the backend.

CICD Pipeline-Continuous Integration Continuous Deployment

     Azure DevOps is where this is based.

     All Yaml files

     Automates the process, updates every Friday

Azure

     Main Repo

     Where the pipeline begins, connects to Github as it didn't work the other way around

     Microsoft Fabric

          PowerBI

               Frontend

          Where the AI will be built

          Data Warehouse/LakeOne

               Allows data manipulation and storage

     Can do everything in here

Cloud software

Lambda Workstation

Bridges between the frontend and backend

API Modules

Dataset

Retrieved from Kaggle

Terrorism analytics from 1970 to 2018

Steps to Set up

- Find a good dataset to use for data mining.
- Create an Azure Cloud account (we used our school account.
- Set up Azure DevOps for the CICD pipeline.
- Link Azure to Github via the pipeline.
- After linking to Github, create the pipeline that will automatically back up Azure DevOps to Github.
- Create Machine Learning Ops repository.
- Set up Microsoft Fabric and PowerBI backend.
- Set up Lambda Workstation.
- Create API modules within Lambda Workstation.
- Create the Frontend on Github Pages using Jekyll.