**Task**: Put a Machine Learning Model into Production

We want you to build a machine learning model and put it into production. Please put it into production with a Python CLI tool that integrates **Databricks Jobs**, **Tracking Tool, and Github Actions**.

**Set up**:

You will need a free tier Databricks account/workspace and a free tier Github account.

**Requirements**:

* Write a python based cli tool that is to be called with a Github action. The cli tool should create two separate Databricks jobs.
* Use Object Oriented Design for all python code. There may be circumstances where OOP isn’t required. If so, be ready to explain why OOP wasn’t used.
* Job 1 should train a simple classification model. This job should be scheduled to run every 30 days. Please include a notebook that:
  + Ingests a data set and performs some feature engineering
  + executes a **simple classification model** training script.
  + Logs parameters and metrics using tool of your choice.
  + Registers the resulting model using the tool of your choice.
* Job 2 should load the model and run inference with it. This job should run daily. Include a notebook that:
  + Loads data and model
  + Performs inference
  + Saves inference results
* Set up a **GitHub Actions** workflow that:
  + Runs your CLI tool and integrates with databricks
* Merge code to main to put this project into Production. Hint: Use workspace folders and naming conventions for env separation.

**Deliverables**:

* A github repo with:
  + your code, documentation, and tests
  + links to your production databricks jobs, experiments, and model registry

**Evaluation**:

* **Correctness**: Are all requirements met? For example, does the code properly create and run a Databricks job? Is model registry and other traceability tools used?
* **Code Design**: Are you designing your code using best practices?
* **GitHub Actions**: Proper usage of secrets, environment setup.
* **Documentation** and clarity: Is it easy to understand and run?
* **Testing**: Is your code properly covered?

**You will not be evaluated on**:

* The complexity or accuracy/recall/precision of your machine learning model that is trained
* Feature engineering skills
* Other machine learning model optimization techniques