**CAPSTONE PROJECT**

**ONLINE COURSE ENROLLMENT AND PROGRESS TRACKER**

**WEEK 5**

**1. Objective**

The goal of this task is to automate a weekly reporting pipeline in Azure DevOps that generates a list of students whose course progress is below 50%. The system should automatically run once per week, filter student data, and produce a structured report for follow-up by instructors or administrators.

**2. Scope of Work**

**a) Automate Weekly Reporting Pipeline**

* Create an Azure DevOps YAML pipeline configured to run on a weekly schedule (e.g., every Monday at 9:00 AM).
* The pipeline will:
  1. Checkout the repository that contains the reporting scripts.
  2. Run a Python (or PowerShell) script that processes student data.
  3. Store and publish the generated report for stakeholders.

**b) Script to Identify Students with <50% Progress**

* A Python script will be used to:
  1. Connect to the data source (CSV file, SQL database, or API).
  2. Read the student progress dataset.
  3. Apply filtering logic: select all students where progress < 50.
  4. Format results into a report file (CSV or Excel).
  5. Mark these students with a status = *“Follow-up Required”*.

**c) Output Report / Log for Follow-up**

* Once the report is generated, the pipeline will:
  + Save the report in the pipeline artifacts for auditing.
  + Optionally upload it to a shared location (Azure Blob Storage, SharePoint, or Teams).
  + Send an automated email notification to stakeholders with the report attached or linked.
  + Maintain logs for every run to confirm whether the job succeeded or failed.

**3. Deliverables**

1. **Azure DevOps YAML Pipeline**
   * Configured with a scheduled trigger (cron job).
   * Defines stages for installing dependencies, running scripts, and publishing reports.
   * Ensures repeatable, automated execution every week without manual intervention.
2. **Weekly Progress Report Output**
   * Example report file: weekly\_progress\_report.csv
   * Columns:
     + Student ID
     + Student Name
     + Course Name
     + Progress Percentage
     + Status (e.g., *“Follow-up Required”*)
   * Available in pipeline artifacts and shared with the teaching staff.