DOUGLAS COLLEGE

COMMERCE & BUSINESS ADMINISTRATION
COMPUTING STUDIES & INFORMATION SYSTEMS
COMPUTER AND INFORMATION SYSTEMS (PBD)

CSIS 4495-050: APPLIED RESEARCH PROJECT

Progress Report 3:
End-to-End Data Engineering Solution for HR Analytics

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Instructor: Dr. Bambang Sarif

NEW WESTMINSTER/BC
FALL/2025

1.0 Work Hours

Date	Number of Hours	Description of Work Done
10/10/2025	2	• Continue learning about Dash from Udemy Course (Sections 6)
10/10/2025	3	Create initial dashboards: • Bar Chart of Turnover Rate by Department • Line Chart Average Salary by Department\ • Scatterplot of Experience vs Performance
10/13/2025	2.5	Continue learning about Dash from Udemy Course (Sections 7)
10/18/2025	2	Update dashboard design to be interactive
10/19/2025	2	Learn Databricks from a YouTube video, crash courses, and Databricks documentation
10/22/2025	1.5	Set up Databricks workspace and initial attempt to connect Databricks to Notebook
10/22/2025	2	Add and update Web Application parts in the Midterm Report
10/23/2025	2	Double-check and finalize the Midterm documentation for submission

2.0 Description of Work Done

From October 10 to October 23, 2025, I focused on enhancing my data visualization proficiency and refining the documentation for the HR Analytics project. On October 10, I continued my training through the Udemy course *"Python Dashboards with Plotly Dash"*, completing Section 6 to strengthen my understanding of Dash layouts, components, and callback interactivity. Applying these lessons, I developed the project's initial dashboards, which featured a bar chart illustrating turnover rates by department, a line chart comparing average salaries, and a scatterplot examining the relationship between employee experience and performance. On October 13, I advanced to Section 7 of the same course to explore more advanced techniques for interactivity and layout optimization. By October 18, I successfully integrated these features into the dashboard, transforming it into an interactive web application where users can dynamically filter and analyze HR data.

On October 19, I shifted my focus to Databricks, studying its documentation and learning materials from YouTube tutorials and crash courses to understand its workspace structure, data processing features, and integration with analytical tools. On October 22, I set up a Databricks workspace and conducted an initial connection test between Databricks and my notebook environment. Later that day, I updated the Web Application section of the midterm report to reflect the improved architecture and visualization design.

Finally, on October 23, I reviewed our midterm documentation, ensuring that all technical and descriptive components follow the midterm report requirements posted on Blackboard.