



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

CSIS 4495-050: APPLIED RESEARCH PROJECT

**Progress Report 5:  
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

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**Student Name: Bruno do Nascimento Beserra**

Date	Number of Hours	Description of Work Done
11/08/2025	5	Meeting to record the video again with team
11/08/2025	3	Create Slowly Changing Dimensions Type 2 algorithm manually assigning the changing values each interaction
11/09/2025	4	Create Slowly Changing Dimensions Type 2 algorithm creating functions for better coding practices
11/11/2025	3.5	Edit midterm report video
11/15/2025	1.5	Update SCD2 code to add merge and update techniques in it
11/16/2025	1	Update SCD2 code to add merge and update techniques in it
11/20/2025	1	Create Progress Report 5 Document

## 2.0 Description of Work Done

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During Week 11, I focused on tasks related to improving our SCD2 implementation and recording the midterm video report. My team had a meeting to re-record our video presentation, ensuring that the content was clear and aligned with the requirements. Later on the same day, I worked on building the initial version of the Slowly Changing Dimensions Type 2 (SCD2) algorithm by manually assigning the changing values at each interaction.

On the following day, I continued this work by developing a more robust and scalable version of the SCD2 algorithm. I created functions to support cleaner coding practices and make the logic easier to maintain and reuse. I also edited the midterm report video, connecting all snippets of video from all three of us into a single file.

During Week 12, I refined the SCD2 implementation, updating the SCD2 code to incorporate merge and update techniques, making the solution more efficient. Finally, on November 20th, I created the Progress Report 5 document, summarizing the work completed during this period and preparing it for submission.

### 3.0 Repo Check-in of Implementation Completed

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Over these two weeks, I checked in updates related to the enhancements of the SCD2 logic and the documentation associated with the progress report. Tasks such as video editing and team meetings were conducted outside of the repository environment and therefore were not included in version control.