FIT 3182 Assignment 2
Marking Guide

Marked By : Marker(template)			
Tasks	**Sub Task**	**Criteria** **Note:** **1) Each criteria has requirements to obtain either a P, C, D, HD or HD+ grade.** **2) To obtain a specific grade, you need to meet the requirements of the specific grade and the requirements of the grades(s) below it.** **3) For instance, if you are aiming for HD in Task 1.1, you need to also meet the requirements for P, C and D in this task.** **4) The percentage of the obtained grade will be multiplied with the maximum marks of a criteria to obtain the actual marks.** **5) Demo and interview in Week 12 will apply scale between 0 and 1 that will be multiplied with the obtained marks.**	**Maximum Marks**
Part 1.Mongodb Data Model (5 marks)	1.1	**Collection Design** **a) Pass** - Significant aspects are unclear. - Significant spelling and grammatical errors. **b) Credit** - Provide justifications with limited descriptions. - Few spelling errors present. **c) Distinction** - Good detail on justification with clear argument. - Quality of writing is at high standard. **d) High Distinction** - High-level of justification with clear argument and excellent description. - Excellent standard and quality of writing. No spelling and grammatical errors present.	1
	1.2	**Collection Relationship** **a) Pass** - Significant aspects are unclear. - Significant spelling and grammatical errors. **b) Credit** - Provide justifications with limited descriptions. - Few spelling errors present. **c) Distinction** - Good detail on justification with clear argument. - Quality of writing is at high standard. **d) High Distinction** - High-level of justification with clear argument and excellent description. - Excellent standard and quality of writing. No spelling and grammatical errors present.	2
	1.3	**Discussion** **a) Pass** - Significant aspects are unclear. - Significant spelling and grammatical errors. **b) Credit** - Provide justifications with limited descriptions. - A few spelling errors present. **c) Distinction** - Good detail on justification withaclear argument. - Quality of writing is at high standard. **d) High Distinction** - High level of justification with clear argument and excellent description. - Excellent standard and quality of writing. No spelling and grammatical errors present.	2
	2.1.1	**Producer Implementation** **a) Pass** - Implement Producers A and B. - Batching works every n seconds on matching batch IDs. - Minimal or no metadata provided. **b) Credit** - Implement Producers A, B and C. - Correct metadata (producer_id) is provided. **c) Distinction and High Distinction** - Metadata and timestamps are provided.	2
	2.1.2	**Streaming Application - Join Logic & State Management** **a) Pass** - Simple join on matching batch_id from A and B. - Drop records where batch_id mismatches. - Use basic in-memory state to hold one batch per stream. **b) Credit** - Join on matching batch_id from producers A, B and C. **c) Distinction** - Join on records from producers A, B and C even when batch_id differ by a fixed offset. - Log dropped pairs. **d) High Distinction** - Semi-stream join across all 3 producers. - Clear documentation of state cleanup policies. **e) High Distinction+** - Online join across all 3 producers.	8
	2.1.3	**Streaming Application - Sink Integration (MongoDB)** **a) Pass** - Writes violation record to the MongoDB collection. - Basic Connectivity. **b) Credit** - Handle write failures with a simple retry. **c) Distinction** - Bulk writes for efficiency. - Indexes for violation record. **d) High Distinction** - Idempotent writes.	2

Part 2.Streaming Application (20 marks)	2.1.4	**Violation Detection** **a) Pass** - Implement instantaneous speed check against camera limit. **b) Credit** - Add average speed check for ending camera. - Both rules trigger violations correctly. **c) Distinction and High Distinction** - Parameterizable speed-limit thresholds per camera.	2
	2.2.1	**Data Visualisation - Correctness of Data Processing, Plot Design and Clarity** **a) Pass** Plots runs but with some errors. - Two separate line charts produced. - Labelled axes. **b) Credit** - Plots run without error. - Title, axis labels, and legends present. - Different line styles or markers for clarity. **c) Distinction** - Dual-axis or subplots arranged side-by-side comparison. - Annotates on interesting points. **d) High Distinction** - Consistent styling and high quality visualisation.	2
	2.2.2	**Data Visualisation - Interesting Point Annotation** **a) Pass** - Marks one extreme point. **b) Credit** - Create interesting points based on the specification. **c) Distinction** - Highlights additional insights (sudden spikes or drops). - Uses callouts or shaded regions for periods of interest. **d) High Distinction** - Dynamically computes and labels percentiles.	2
	2.2.3	**Data Visualisation - Justification** **a) Pass** - Brief captions below each plot. **b) Credit** - Paragraph explaining why interesting points are important. **c) Distinction** - Discusses implications. - Connect patterns across both plots. **d) High Distinction** - Propose follow-up analytics (e.g., future work). - Critically evaluate whether visual cues would support operational decisions or trigger alerts.	2
Part 3: Documentation (5 marks)	3.1	**Code Quality, Style & Comments** **a) Pass** - Code runs without error. - inconsistent naming and formatting. - Sparse comments. **b) Credit** - Consistent naming and formatting. - PEP8-style conventions applied to majority of the code. - Comments explain most non-obvious steps. - Functions have brief docstrings describing input and output. **c) Distinction** - Clear, descriptive naming. - Functions are modularized. - Minimal repetition. - Comments clearly explain algorithmic intent. - All functions/methods have full docstring. **d) High Distinction** - Exemplary style (PEP8-compliant, Type Hints, Docstrings). - Docstrings follow standard format. - Inline notes for edge-cases or performance considerations. - Comments and Docstring should not affect code readability.	3
	3.2	**Narrative Markdown and Explanation** **a) Pass** - Minimal Markdown (only includes section). - No diagrams or trivial screenshots of code. **b) Credit** - Markdown structure outlines workflow. - Simple flowchart or sequence diagram to describe the implemented algorithms. **c) Distinction** - A sufficient explanation of the algorithms or methods used in the assignment, in the form of written or illustration. - References to external concepts or docs where helpful. **d) High Distinction** - Detailed or comprehensive explanation the end-to-end algorithm both in written and illustration. - Contextual links to Spark docs, MongoDB specs, etc. - A table summarizing key parameters (e.g., window size for join).	2
Part 4: Code Demo & Interview		Invididual assessment: A scale between 0 and 1 to assess: Algorithm, design and code comprehension. The interview will also assess understanding or spark, kafka, mongodb and releavent Python libraries used in the assignment.	
Penalty (Deduction)		Late submission penalty	
		Final Grade	
		Contribution to Final Marks	