Marking Criteria for Individual Project

Item	Sub-Item	Details	Max Marks*
Proposal (5 marks)	Introduction (2 marks)	Give background information about this project: What is this project about?	0.5
		Explain the motivation of this project: Why is this project important?	0.5
		Describe the overall objective and features of the project: What features does this project have?	0.5
		Explain the limitations of traditional computing solutions: Why doesn't traditional computing solve the problem well?	0.25
		Explain the benefits brought by cloud computing: How does cloud computing fit in this project?	0.25
	Technical Solutions (2 marks)	Describe what cloud technologies you've used in this project.	1.5
		Provide a monthly cost estimation of all the cloud resources used in this project.	0.5
	Architecture Design (1 mark)	Depict the workflow or framework of the project in a figure.	1
Implementation (15 marks)	**Type I Project: Highly scalable and available application in the cloud (15 marks)**	Frontend - Interactive UI (e.g., CSS, HTML, JavaScript, etc.)	1
		Backend - Database design and usage (Relational/Non-relational databases)	1
		Basic Frontend and Backend Functionalities - e.g. login, logout, data retrieval and display, etc.	1
		Micro-service architecture and Containerisation	4
		Scalability and Reliability	1
		Orchestration (Swarm or Kubernetes)	3
		Implementation Originality, Innovation, Difficulty, and Completeness: the work is original, innovative, complete, and functional or correct according to the proposal	4
	Type II Project: Big Data Focused - Big Data Queries (15 marks)	Data size and complexity	1
		Data storage: store big data using either a database (e.g. MySQL or Redis) or the distributed file system (e.g. HDFS)	1
		Data Exploration and Preprocessing: Understanding data with visualisation; Cleansing data (deal with missing data, noises, outliers, etc.)	2

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		Complex big data queries using Spark SQL (At least **THREE** insights, e.g., trends, and patterns, from the queries)	4
		Query result visualisation (diagram or table) and conclusion	3
		Implementation Originality, Innovation, Difficulty, and Completeness: the work is original, innovative, complete, and functional or correct according to the proposal	4
	Type II Project: Big Data Focused - Big Data Analytics (15 marks)	Data size and complexity	1
		Data storage: store big data using either a database (e.g. MySQL or Redis) or the distributed file system (e.g. HDFS)	1
		Data Exploration and Preprocessing: Understanding data with visualisation; Cleansing data (deal with missing data, noises, outliers, etc.)	2
		Machine learning or data mining algorithms (At least **THREE** analytical tasks, including classification, regression, clustering, association rule mining, etc.) using Spark MLlib	4
		Model evaluation (testing) and outcome visualisation (diagram or table)	3
		Implementation Originality, Innovation, Difficulty, and Completeness: the work is original, innovative, complete, and functional or correct according to the proposal	4

* Please note that the points of each sub-item are the full mark. The actual mark will be awarded based on the assessment of each sub-item.

All the excellent projects will be selected by the teaching team for the student project competition. Also, self-nomination is welcome. The winners of the competition will receive a certificate.

Student project competition (100%)			
Proposal (30%)	Implementation Completeness (30%)	Excellence and Innovation (30%)	New Technologies (10%)
Excellent structure, uncluttered, appropriate text and diagrams best convey information. Clearly defined topic and scope. Appropriate background materials (excellent motivation and significance) and utilization of cloud tools/technologies/services. Clearly designed architecture/workflow.	From the exposition of the work, it should be self-evident that the work is complete and functional or correct. The effort required to complete the work is impressive.	Work is of the highest quality demonstrating outstanding engineering/scientific practice and showing substantial creativity and innovation.	Demonstration of excellent knowledge in learning new tools and technologies for project completion.