CSC248 – Data Structure
Group Project (20%)

The assessment is designed to attain the followings:

Course Outcomes:

CLO3 - Demonstrate lifelong learning skills through the development of data structures application using data structure programming tool (A3).

Requirements:

This Group Project must be completed in THREE phases, and first you need to form a group of 2-3 students for this project.

Phase 1: Proposal

Based on the theme (industry) decided by your instructor: (Example- list of industries in Malaysia : https://www.sfconsulting.com.my/list-of-industries-in-malaysia/)

No.	Group	Theme (industry)
1	JCS1103A	Medicine/Medical
2	JCS1103B	Transportation and Logistics
3	JCS1103C	Food
4	JCS1103D	Textiles and Mineral
5	JCS1103E	Agriculture: Commodity Crops
6	JCS1103F	Digital service
7	JCS1103G	Entertainment
8	JCS1103H	Agriculture: Farming (Livestock/Fishery)
9	JCS1105A	Tourism

a) Propose a collection of data from the industry chosen by defining the object's class related to your proposal that consists of the object's attributes and necessary methods. State the processes to be fulfilled at the end of the development.

b) Propose at least five processing (should include: removal, searching, update and traversing the list). Insertion is compulsory processing other than the 5 processing. The processing should be logical and applicable to your chosen class of objects.

Phase 2: Development & Implementation

Students need to solve each of processing proposed in Linked List and Queue data structure. The development of each processing will be in both data structure (Linked List and Queue).

a) Define a class of objects that consists of the object's attributes and necessary methods.

b) Define a linked list ADT and node class that would be able to do the following processing:
   i) insert node at front and at the back of the list.
   ii) remove node anywhere in the list.
   iii) provide traversal from head until the last node in the list. (getHead() and getNext()).
   iv) determine the size of the list.
   v) status of whether the list is empty or has element(s).
   vi) a method to display details of all elements in the list.

c) Define a queue (ADT) data structure with all the necessary methods.
   i) add data at the end of the list (enqueue).
   ii) Removes data at the beginning of a list (dequeue).
   iii) Determine size of the list.
   iv) Determine whether the list is empty.

d) Define TWO application classes:
   i) First is to implement the 5 processing in Linked List data structure.
   ii) Second is to implement the 5 processing in Queue data structure.

*The data for processing should be stored and read from an input File (.txt).

Phase 3: Report and Presentation (Week 14)

Present your work as scheduled by your lecturer and submit a report that consists of:
a. Front page
b. Table of contents.
c. Introduction of project and group members.
d. Distribution of works between team members
e. Complete coding of all classes.
f. Sample input and output.
g. Conclusions of your finding: which of the data structure best applied in your case study

Timeline

Activities	**Timeline**	**Status (complete OR not complete)**
Phase 1	Week 8 (4th December 2022)	
Phase 2 (a)	Week 8 (4th December 2022)	
Phase 2 (Create input file)	Week 8 (4th December 2022)	
Phase 2 (b)	Week 9 (15th December 2022)	
Phase 2 (d)(i)	Week 10 (22th December 2022)	
Phase 2 (c)	Week 11 (1st January 2023)	
Phase 2 (d)(ii)	Week 12(8th January 2023)	
Phase 3	Week 14	

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PROPOSAL

List of group members:

Name	Matric No.

Class of objects with attributes and methods:

List of processing:

1. 2. 3. 4. 5.

Name: Group Class:
ID:

GROUP PROJECT'S EVALUATION (Final Calculated Marks: 20%)

According to the problem given by instructor solve the problem in full program as per requirement.

Total Marks:

Project's proposal (10%)

Tasks	0	1	2	Weight	Total
Object's class	The class propose could not be implemented and not relevant	Lack in some area, can be improved but relevant.	Well defined, can be easily implemented and relevant.	5	/10
Processing 1	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	/10
Processing 2	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	/10
Processing 3	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	/10
Processing 4	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	/10
Processing 5	Not achievable or below expectation.	Achievable but level of complexity is below expectation.	Achievable and acceptable level of complexity.	5	/10
Data in input file	less than 10 records	less than 20 records	Sufficient with more than 20 records	5	/10
TOTAL (70)					

Name: Group Class:
ID:

Project's implementation (60%)

Tasks		0	1	2	Weight	Total
		not exist	Exist			
			Incorrect/ incomplete	Complete		
Linked List class	Class definition				3	/6
Queue	Class definition				2	/4
Object Class	Class definition				2	/4
Main Class 1 (Linked List)	Data Structure object's declaration				2	/4
	Data insertion into the data structure involved				2	/4
	Processing 1				3	/6
	Processing 2				3	/6
	Processing 3				3	/6
	Processing 4				3	/6
	Processing 5				3	/6
Main Class 2 (Queue)	Data Structure object's declaration				2	/4
	Data insertion into the data structure involved				2	/4
	Processing 1				3	/6
	Processing 2				3	/6
	Processing 3				3	/6
	Processing 4				3	/6
	Processing 5				3	/6

Tasks	1	2	3	Weight	Total
	Poor	Moderate	Executed perfectly		
Overall execution – program run smoothly				2	/6

Name: Group Class:
ID:

Tasks	0	1	2	Weight	Total
	not exist	Exist			
		Incorrect/ incomplete	Complete		
Logic on data structure				3	/6
Data Casting ability				2	/4

Tasks	0	1	2	3	Weight	Total
	None of the problem Solved	Poor problem-solving skills	Able to solve some problem	All problems Solved		
Problem Solving					3	/9
TOTAL (115)						

Name: Group Class:
ID:

Report and Presentation (30%)

Tasks		1 Poor	2 Moderate	3 Very Good	Weight	Total
Verbal Communication (Individual)	Clear delivery of ideas (content)				3	/9
	Confident and articulate delivery of ideas (Communicative ability)				2	/6
	Understand and respond to questions				2	/6
Written Communication (report)	Clarity and accuracy written academic discourse (Content)				2	/6
	Coherently written academic discourse (Communicative ability)				3	/9
	Systematically written academic discourse (Technicality)				3	/9
TOTAL (45)						

Teamwork (Individual evaluation)

Goal	1 point	2 points	3 points	4 points	Total
Equal work	Did little or no work	Did almost as much work as others	Did an equal share of work	Did a full share of work or more	/4
Cooperation	Did not cooperate	Could be persuaded to cooperate	Work agreeably with others	Took an initiative to get the group organized	/4
Participation	Not participated in discussions and made no suggestion.	Listen to others but made few suggestions	Participated in discussions and made some suggestions	Provided many ideas	/4
Support	Took little interest in the project	Seemed pre-occupied with other projects	Offered encouragement to other partners	Assisted other partners	/4
Communication	Never expressed ideas	Rarely expressed ideas	Usually shares ideas	Clearly communicated ideas	/4
TOTAL (20)					

Name: Group Class:
ID:

Team member 1:

Evaluation	Total Marks	Percentage counted	Marks calculated
Proposal	70	10%	
Project's implementation	115	60%	
Report and presentation	45	20%	
Teamwork	20	10%	
Total			/100

Team member 2:

Evaluation	Total Marks	Percentage counted	Marks calculated
Proposal	70	10%	
Project's implementation	115	60%	
Report and presentation	45	20%	
Teamwork	20	10%	
Total			/100

Team member 3:

Evaluation	Total Marks	Percentage counted	Marks calculated
Proposal	70	10%	
Project's implementation	115	60%	
Report and presentation	45	20%	
Teamwork	20	10%	
Total			/100