



**DATA STRUCTURE AND ALGORITHM (CSC2734)**  
**SESSION 3 2021/2022**  
**PROJECT**

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Student Name:	Assessment No: 4	
Student ID No.:	Assessment Type: Assignment [ ] / Practical [ ] /Test [ ] / End of unit test [ ] /Project [X]	
Mentor's Name:	Assessor Name: Suriana binti Supaan Nur Akmal Hafizan bt Kamal Iqbal, Siti Farhana binti Johari	
Date Out: <b>28/01/2022</b>	Overall marks (50):	
Date In: <b>17/02/2022</b>	Weightage (40%):	

*CLO 3: Construct a program using data structure techniques to perform computational task (P3,PLO3)*

**INSTRUCTIONS TO STUDENTS:**

1. Late submissions after given due date will not be accepted.
2. Report should be written in using:  
Font type: Arial  
Size: 11 pts  
Line Spacing: 1.5
3. Please attach hardcopy coding (Font: Consolas, 10 pts and single spacing)

## **Question**

Theme Park is one of most attractive places to be visited especially during the school holiday in Malaysia. Desa Park is a theme park that will open early next year in Selangor. Desa Park offers many water activities, indoor games and rides in which all of them are all scattered in different locations in the park. In addition, the ticket fee is charged at each activity, games or rides chooses by visitors.

To streamline the Desa Park management and operation process, JustCode Software House has been appointed to provide an application that support the ticket purchasing process and information of the theme park. As a programmer at JustCode Software House, you need to develop an application that has the following functionalities so that the visitors can planned their activities well. The functionalities are:

- i. Store the information of ticket fee for each activity, games or ride using linked list and calculate the total payment for tickets
- ii. Calculate the distance travelled by a visitor using graph. Visitors need to mention the sequence of locations to be visited in the theme park.

## **Task:**

1. Provide overview and objective of your application development.
2. Draw a visual map of theme park with locations of activities and distances among all the locations using graph.
3. Produce adjacency matrix and adjacency list that represents locations and distances for a graph in Task 2.
4. Develop an application that fulfill the requirements below:
  - a) Implement linked list to calculate the tickets fee and display the fee for each location and total ticket fee.
  - b) Implement graph that represent locations (vertices) and distances (edges) that map your design in Task 2 and Task 3.
5. Apply good programming practices in terms of:
  - a) Flow of the system (appropriate menu)
  - b) Comments
  - c) Output layout
6. Include print screen of the output and the coding of your application in your report.

7. Present your application which include:
- a) Content
  - b) Visual aids
  - c) Verbal communication
  - d) Fluency and clarity
  - e) Non-verbal communication
  - f) Understand and respond to questions

### Report and Application Rubric:

Task	Mark	Mark obtained
1) Provide overview and objective of your application development.	<input type="checkbox"/> Complete overview and objective of the application (2 marks).	
2) Draw a visual map of theme park with locations of activities and distances among all the locations using graph.	<input type="checkbox"/> Visual map consist all the labelled locations (2 marks) <input type="checkbox"/> Visual map consist all the labelled distance (2 marks)	
3) Produce adjacency matrix and adjacency list that represents locations and distances for a graph in Task 2.	<input type="checkbox"/> Correct mapping the information in Task 2 into adjacency matrix (2 marks) <input type="checkbox"/> Correct mapping the information in Task 2 into adjacency list (2 marks)	
4) Develop an application that fulfil the requirements. below:	<i>Requirement 1: Implement linked list to calculate the tickets fee.</i>  <input type="checkbox"/> Enter ticket price for each activity into a linked list (2 marks) <input type="checkbox"/> Correctly calculate the tickets fee based on the chosen activities entered by user (2 marks) <input type="checkbox"/> Display the fee for each location visited and total ticket fee. (2 marks)	

	<p><i>Requirement 1: Implement graph that represent locations (vertices) and distances (edges) that map your design in Task 2 and Task 3.</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Set the locations of activities in the map as vertices in graph (2 marks)</li> <li><input type="checkbox"/> Set the distance in the map as edges in graph (2 marks)</li> <li><input type="checkbox"/> The location and distance are tally with the visual map in Task 2. (1 mark)</li> <li><input type="checkbox"/> Correctly calculate the distance travelled by a visitor. (2 marks)</li> </ul>	
5) Apply good programming practices	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provide an easy system menu with clear terms. (2 marks)</li> <li><input type="checkbox"/> Provide comprehensive comments in the developed code (1 mark)</li> <li><input type="checkbox"/> Appealing layout for input/output of the application (2 marks)</li> </ul>	
6) Include print screen of the output and the coding of your application in your report.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provide complete print screen of the output. (2 marks)</li> <li><input type="checkbox"/> Provide complete coding of your application. (2 marks)</li> </ul>	
<b>Total Marks Earned</b>		<b>/32</b>

**Presentation rubrics:**

Task	Mark			Mark Obtained
	1	2	3	
7. Present your application which include:				
a) Content	<ul style="list-style-type: none"> <li>• Unorganized content.</li> <li>• There did not appear to be any sequence nor order to the information presented.</li> </ul>	<ul style="list-style-type: none"> <li>• The presenter was organized in the delivery of this presentation.</li> <li>• The flow of the presentation was unclear and confusing.</li> </ul>	<ul style="list-style-type: none"> <li>• The presenter was organized in the delivery of this presentation.</li> <li>• The flow of the presentation was clear.</li> </ul>	
b) Visual aids	<ul style="list-style-type: none"> <li>• Schematics or visual aids did not improve the explanation, were difficult to read, or were inadequately produced.</li> </ul>	<ul style="list-style-type: none"> <li>• The visual aids contributed little to the presentation and it is not clear why they were chosen.</li> </ul>	<ul style="list-style-type: none"> <li>• Visual aids were helpful in the presentation</li> </ul>	
c) Verbal communication	<ul style="list-style-type: none"> <li>• Information is lacking and unclear.</li> </ul>	<ul style="list-style-type: none"> <li>• Information is not presented in a clear manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Information is presented in a clear manner.</li> </ul>	
d) Fluency and clarity	<ul style="list-style-type: none"> <li>• Presenter is not fluent and voice is not clear</li> </ul>	<ul style="list-style-type: none"> <li>• Presenter is not fluent and voice is slightly not clear</li> </ul>	<ul style="list-style-type: none"> <li>• Presenter is fluent and voice is easy to be heard clearly</li> </ul>	

Task	Mark			Mark Obtained
	1	2	3	
e) Non-verbal communication	<ul style="list-style-type: none"> <li>• Presenter is unable to use body language (eye contact and gestures) towards the audience</li> <li>• Presenter does not seem at all prepared to present</li> <li>• Inappropriate attire</li> </ul>	<ul style="list-style-type: none"> <li>• Presenter makes minimum body language (eye contact and gestures) toward the audience but happens only a few times.</li> <li>• Presenter is somewhat prepared, but it is clear that rehearsal was lacking</li> <li>• Casual attire</li> </ul>	<ul style="list-style-type: none"> <li>• Presenter makes suitable body language (eye contact and gestures) may focus on audience.</li> <li>• Presenter completely prepared and has obviously rehearsals</li> <li>• Wear pieces of formal attire</li> </ul>	
f) Understand and respond to questions	<ul style="list-style-type: none"> <li>• Not able to understand and respond to a question</li> </ul>	<ul style="list-style-type: none"> <li>• Able to understand and answer questions but not able to accurately answer the question</li> </ul>	<ul style="list-style-type: none"> <li>• Able to understand and answer questions very well</li> </ul>	
<b>Total Marks Earned</b>				<b>/18</b>
<b>Grand Total</b>				<b>/50</b>
<b>Total Percentage (40%)</b>				