061306T4CSC

COMPUTER SCIENCE LEVEL 6

ICT/OS/CS/CR/09/6/A

Understand Algorithms and Data Structures

Nov/Dec 2024

TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

PRACTICAL ASSESSMENT

OBSERVATION CHECKLIST

INSTRUCTIONS TO ASSESSOR

1. You are required to mark the practical as the candidate performs the task.
2. You are required to take video clips at critical points.
3. Ensure that the candidate has a name tag and a registration code at the back and front.
4. Allocate **10** minutes for the candidate to identify and confirm the availability of the resources.
5. Candidate to perform the task as per the requirements of each question.
6. Marks for each task are given.
7. For shared resources clear the Computer off the previous candidates work

Candidate's name & Registration No.	
Assessor's name & Reg. code	
Venue of Assessment	
Date of assessment	

(Indicate the marks available and marks obtained respectively. Award marks appropriately as guided for in the items for evaluation indicated. Give a brief comment where necessary)

Items to be evaluated:	**Marks allocated**	**Marks obtained**	**Comments**
1. Launched C++ IDE successfully. ***(Award 2 marks or 0 for successful launch)***	2		
Task 1: Enqueue			
2. Defined class and initialized variables successfully - *An array of elements* ***(Award 1 mark for correct syntax declared, 1 mark for the correct initialized variable)***	2		
3. Identified queue condition. ***(Award 1 mark for full condition identification, 2 marks for correct method implementation)***	3		
4. Returned overflow error if queue is full. ***(Award 1 mark for error handling structure, 1 mark for overflow error check, 1 mark for return overflow message)***	3		
5. Incremented rear pointer for non-full queue. ***(Award 1 mark for non-full condition check, 1 mark for rear pointer increment, 1 mark for correct exception error)***	3		
6. Correctly added and updated data elements at rear pointer ***(1 mark for correct increment pointer,1 mark for method to add element at position indicated by updated rear pointer, 1 mark for correct console output when queue is full, 2 marks for correct***	5		

error handling for overflow conditions)			
7. Correctly displayed success message after enqueueing. ***(Award 2 marks or 0 for correct display of success message)***	2		
TOTAL	**20**		
Task 2: Dequeue			
8. Checked if the queue is empty using front and rear pointer. ***(Award 2 marks for correct empty display)***	2		
9. Correctly implemented underflow error code if queue is empty. ***(Award 2 marks or 0 for correct code)*** - Included exit function. ***(Award 2 marks or 0 for correct exit function)***	4		
10. Retrieved data element from the position indicated by the front pointer. ***(Award 2 marks or 0 for correct implementation of data element, 2 marks or 0 for ensuring the data corresponds to the correct queue element)***	4		
11. Incremented front pointer to the next available data element. - Updated front pointer after dequeuing the current element. ***(Award 2 marks or 0 for correct control statement)*** - Reset front and rear pointer appropriately ***(Award 2 marks or 0 for correct reset code)***	4		
12. Dequeued element returned successfully. - Returned the dequeued element from the function. ***(Award 2 marks for correct console output stream)*** - Returned a default value or raised an exception error if queue is empty. ***(Award 2 marks or 0 for using exception error)***	4		
13. Commented code.	2		

(Award 1 mark for each comment used)			
Total	**20**		

Task 3:Linear search			
14. Initialized variable. ***(Award 1mark or 0 for initialization)***	1		
15. Set loop successfully to iterate through each element of the array ***(Award 2 marks or 0 for the loop)***	2		
16. Compared current element with target value ***(Award 1 mark for element comparison or 0)***	1		
17. Loop counter Incremented successfully ***(Award 2 mark, or 0 increment function)***	2		
18. Checked error successfully ***(Award 2 mark for correct error handling statement or 0)***	2		
19. Successfully returned the index of the target element. (Element 80) ***(Award 2 marks, or 0 for returning index element as 8)***	2		
TOTAL	**10**		
Total	**50**		

ASSESSMENT OUTCOMES

The candidate was found to be:

Competent ☐ Not yet competent ☐

(Please tick as appropriate)

(The candidate is competent if s/he gets 50% or higher)

Feedback from candidate:

Feedback to candidate:

Candidate's signature:	**Date:**	

Assessor's signature:	**Date:**	

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