SDT TEST - 1

Total points 13/15

The respondent's email (**jayedkn64@gmail.com**) was recorded on submission of this form.

C & C++

5 of 5 points

1) What will be the output of the program? *

1/1

```c
#include <stdio.h>

int main() {
    int a = 5;
    int b = a++;
    printf("%d %d\n", a, b);
    return 0;
}
```

- 5 6
- 5 5
- 6 5
- Error

2) What will be the output of the program? * 1/1

```c
#include <stdio.h>

int main() {
    printf("%lu", sizeof(int));
    return 0;
}
```

- ○ 16
- ◉ 4
- ○ 32
- ○ 2

3) What will be the output of the program? * 1/1

```c
#include <stdio.h>
#include <string.h>

int main() {
    char str[] = "Hello";
    printf("%d", strlen(str));
    return 0;
}
```

- ○ 4
- ◉ 5
- ○ 6
- ○ Error

4) Suppose x = 10, y = 5. What is the result of x % y? * 1/1

- ○ 2
- ○ 5
- ◉ 0
- ○ 1

5) Which operator is used to access members of a dynamically allocated object? *1/1

- . (Dot Operator)
- -> (Arrow Operator)
- * (Dereference Operator)
- :: (Scope Resolution Operator)

Data Structure 5 of 5 points

1) What is the time complexity of inserting at the tail of a singly linked list? (Optimized Version) *1/1

- O(N)
- O(N*N)
- O(1)
- None of them

2) Binary search algorithm time complexity when the array is not sorted? * 1/1

- O(logN)
- O(N*logN)
- O(N*N)
- O(N)

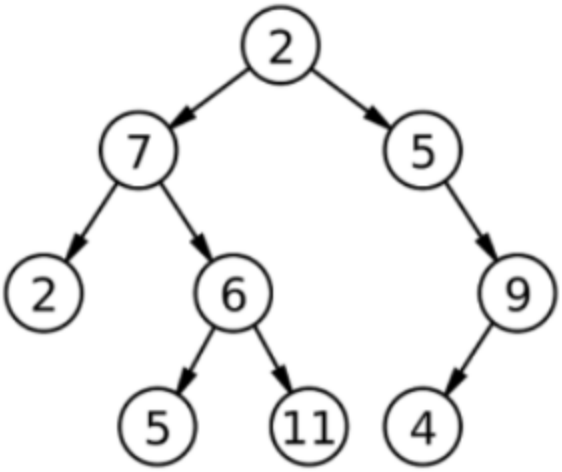
3) What type of heap is commonly used to manage the leaderboards in a gaming system where the highest scores must be accessed quickly? *1/1

- ○ Min Heap
- ◉ Max Heap
- ○ Binary Search Tree
- ○ None of the above

4) Which of the following is a real-life application of a priority queue implemented using a heap? *1/1

- ○ Undo feature in a text editor
- ○ Managing web browser tabs
- ◉ Task scheduling in an operating system
- ○ None of the above
- ○ Redo feature in a text editor

5) What will be the In-order traversal of this binary tree? * 1/1



- 2 7 2 6 5 11 5 9 4
- 2 7 5 6 11 2 5 4 9
- 2 7 5 6 2 5 4 11 9
- 2 7 6 5 11 2 4 5 9

Algorithm 3 of 5 points

1) What data structure is used to implement Dijkstra's algorithm? * 0/1

- Stack
- Priority Queue
- Queue
- Linked List

*1/1

2) Which traversal visits all neighbors of a node before moving to the next level?

- (●) BFS
- ( ) DFS
- ( ) In-Order
- ( ) Pre-Order

*1/1

3) What is the worst-case time complexity of BFS and DFS in terms of vertices (V) and edges (E)?

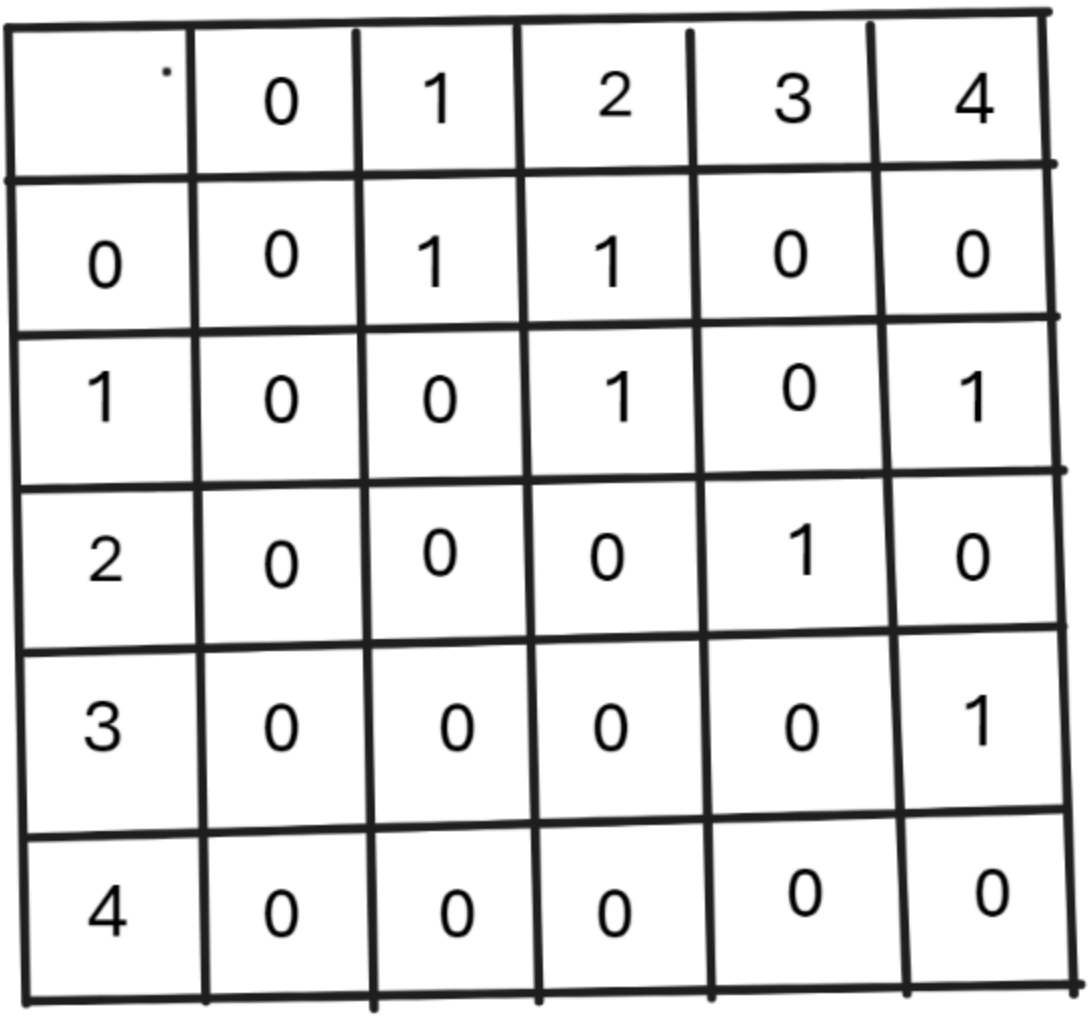
- ( ) O(V)
- ( ) O(V^2)
- (●) O(V + E)
- ( ) O(E log V)

1/1

4) How do you handle cycles in a graph when using DFS? *

- ( ) By stopping at the first repeated node.
- (●) By checking a visited array to avoid re-visiting nodes.
- ( ) By allowing DFS to continue through the cycle.
- ( ) By using a queue instead of a stack.

5) Choose the type of graph from the options below: * 0/1



	0	1	2	3	4
0	0	1	1	0	0
1	0	0	1	0	1
2	0	0	0	1	0
3	0	0	0	0	1
4	0	0	0	0	0

- (●) Undirected Graph
- ( ) Directed Graph
- ( ) Directed Cyclic Graph
- ( ) Bidirectional Graph

Do not edit this field, click on SUBMIT 0 of 0 points

The field below is needed by Form Timer and must NOT be modified. If you modify this key your answer will not be recorded.

Fingerprint - DO NOT EDIT *

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