OUTPUTS 1A

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop
\Codes\DSPD Practicals\" ; if ($?) { gcc Lab_01A.c -o Lab_01A } ; if ($?) {
 .\Lab_01A }
Enter number of elements: 4
Enter 4 numbers:
1
2
3
4

Sum of numbers at odd positions: 4
Sum of numbers at even positions: 6
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

1B

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop
\Codes\DSPD Practicals\" ; if ($?) { gcc Lab_01B.c -o Lab_01B } ; if ($?) {
 .\Lab_01B }
Enter number of elements: 6
Enter 6 sorted elements:
1
2
3
4
5
6
Enter value to search: 4
Examining value: 3
Target greater than midpoint, adjusting start to index: 3
Examining value: 5
Target less than midpoint, adjusting end to index: 3
Examining value: 4
Found value at index: 3
Result: Found at index 3
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

1C

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop
\Codes\DSPD Practicals\" ; if ($?) { gcc Lab_01C.c -o Lab_01C } ; if ($?) {
 .\Lab_01C }
Enter number of students: 2

Enter details for student 1
Roll No: 31
Name: raj
Age: 16
Average Marks: 59

Enter details for student 2
Roll No: 51
Name: veer
Age: 19
Average Marks: 65

Students sorted in descending order of Average Marks:
51      veer    19      65.00
31      raj     16      59.00
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

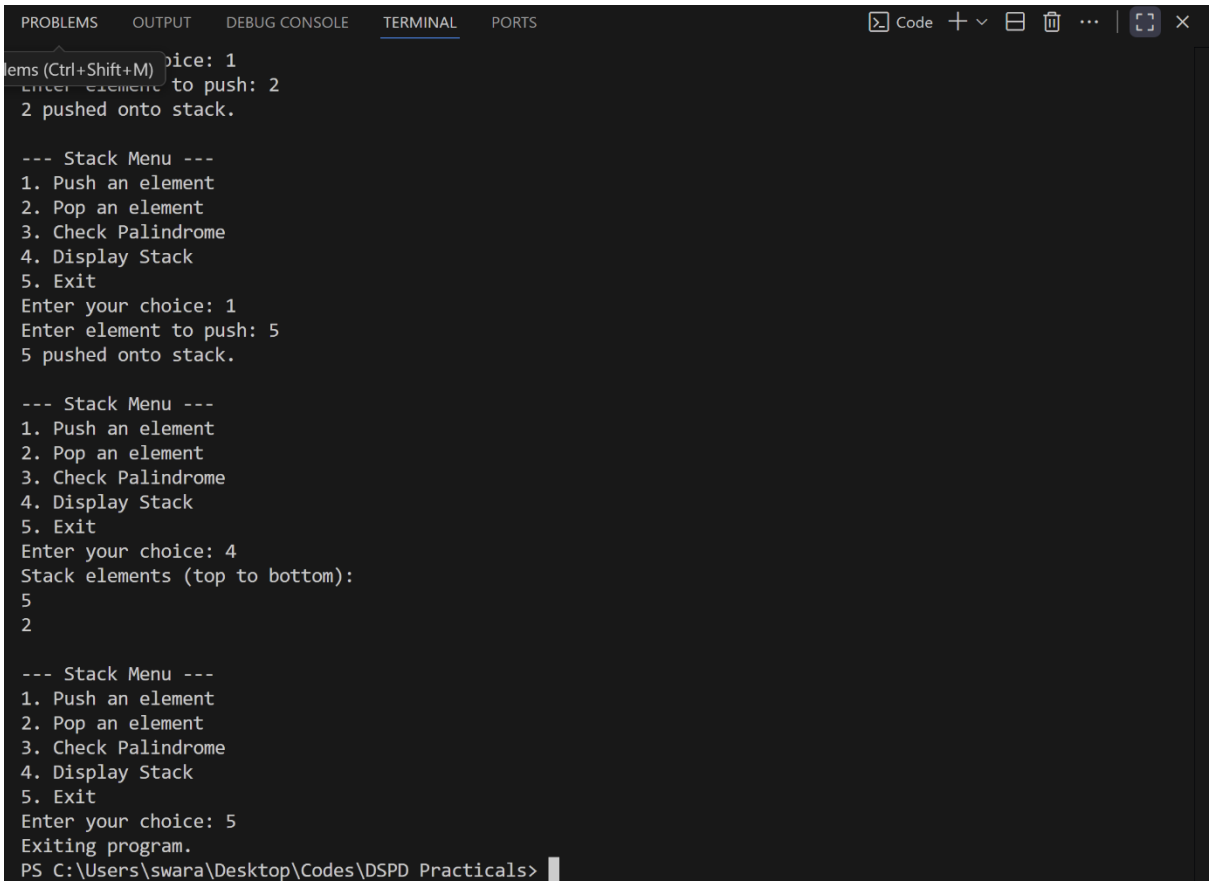
2

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_02.c -o Lab_02 } ; if ($?) { .\Lab_02 }

--- Stack Menu ---
1. Push an element
2. Pop an element
3. Check Palindrome
4. Display Stack
5. Exit
Enter your choice: 1
Enter element to push: 2
2 pushed onto stack.

--- Stack Menu ---
1. Push an element
2. Pop an element
3. Check Palindrome
4. Display Stack
5. Exit
Enter your choice: 1
Enter element to push: 5
5 pushed onto stack.

--- Stack Menu ---
1. Push an element
2. Pop an element
3. Check Palindrome
4. Display Stack
5. Exit
Enter your choice: 4
Stack elements (top to bottom):
5
2
```



3

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_03.c -o Lab_03 } ; if ($?) { .\Lab_03 }

--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
4. Exit
Enter your choice: 1
Enter character to insert: A
'A' inserted into queue.

--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
4. Exit
Enter your choice: 1
Enter character to insert: B
'B' inserted into queue.

--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
4. Exit
Enter your choice: 1
Enter character to insert: C
'C' inserted into queue.

--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
```

```
--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
4. Exit
Enter your choice: 1
Enter character to insert: C
'C' inserted into queue.

--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
4. Exit
Enter your choice: 3
Queue elements (front to rear): A B C

--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
4. Exit
Enter your choice: 2
'A' deleted from queue.

--- Queue Menu ---
1. Insert an element
2. Delete an element
3. Display Queue
4. Exit
Enter your choice: 4
Exiting program.
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

4

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_04.c -o Lab_04 } ; if ($?) { .\Lab_04 }
Enter elements to add to the linked list (0 to stop):
10
20
30
0

Linked List Elements:
10 => 20 => 30

Total number of nodes: 3
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

5

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_05.c -o Lab_05 } ; if ($?) { .\Lab_05 }
Enter number of nodes: 5
Enter 5 elements:
50
30
70
20
40

Inorder Traversal: 20 30 40 50 70
Preorder Traversal: 50 30 20 40 70
Postorder Traversal: 20 40 30 70 50

Enter element to search: 40
Found
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

6

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_06.c -o Lab_06 } ; if ($?) { .\Lab_06 }

--- Binary Search Tree Menu ---
1. Search an element in BST
2. Insert an element in BST
3. Delete a leaf element in BST
4. Exit
Enter your choice: 2
Enter element to insert: 50
Element inserted successfully!
Inorder Traversal: 50

--- Binary Search Tree Menu ---
1. Search an element in BST
2. Insert an element in BST
3. Delete a leaf element in BST
4. Exit
Enter your choice: 2
Enter element to insert: 30
Element inserted successfully!
Inorder Traversal: 30 50

--- Binary Search Tree Menu ---
1. Search an element in BST
2. Insert an element in BST
3. Delete a leaf element in BST
4. Exit
Enter your choice: 2
Enter element to insert: 70
Element inserted successfully!
Inorder Traversal: 30 50 70
```

```
--- Binary Search Tree Menu ---
1. Search an element in BST
2. Insert an element in BST
3. Delete a leaf element in BST
4. Exit
Enter your choice: 3
Enter leaf element to delete: 70
Leaf node deleted (if existed)
Inorder Traversal: 30 50

--- Binary Search Tree Menu ---
1. Search an element in BST
2. Insert an element in BST
3. Delete a leaf element in BST
4. Exit
Enter your choice: 4
Exiting program...
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

7

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_07.c -o Lab_07 } ; if ($?) { .\Lab_07 }
3x3 Grid Graph Traversal
========================

BFS Traversal Order: 1 2 4 3 5 7 6 8 9
DFS Traversal Order: 1 2 3 6 5 4 7 8 9
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

8

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_08.c -o Lab_08 } ; if ($?) { .\Lab_08 }
Enter vertices and edges: 4 5
Enter edges (u v w):
0 1 10
0 2 6
0 3 5
1 3 15
2 3 4

Edges in MST:
2 -- 3 == 4
0 -- 3 == 5
0 -- 1 == 10
Minimum Cost = 19
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

9

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_09.c -o Lab_09 } ; if ($?) { .\Lab_09 }
Enter number of keys to insert: 5
Enter the keys:
50
700
76
85
92

Final Hash Table:
Slot 0 : 700
Slot 1 : 50
Slot 2 : 85
Slot 3 : 92
Slot 4 : -1
Slot 5 : -1
Slot 6 : 76
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```

10

```
PS C:\Users\swara\Desktop\Codes\DSPD Practicals> cd "c:\Users\swara\Desktop\Codes\DSPD Practicals\" ; if ($?
) { gcc Lab_10.c -o Lab_10 } ; if ($?) { .\Lab_10 }
Enter the source file name: input.txt
Enter the destination file name: output.txt

File copied successfully from input.txt to output.txt
PS C:\Users\swara\Desktop\Codes\DSPD Practicals>
```