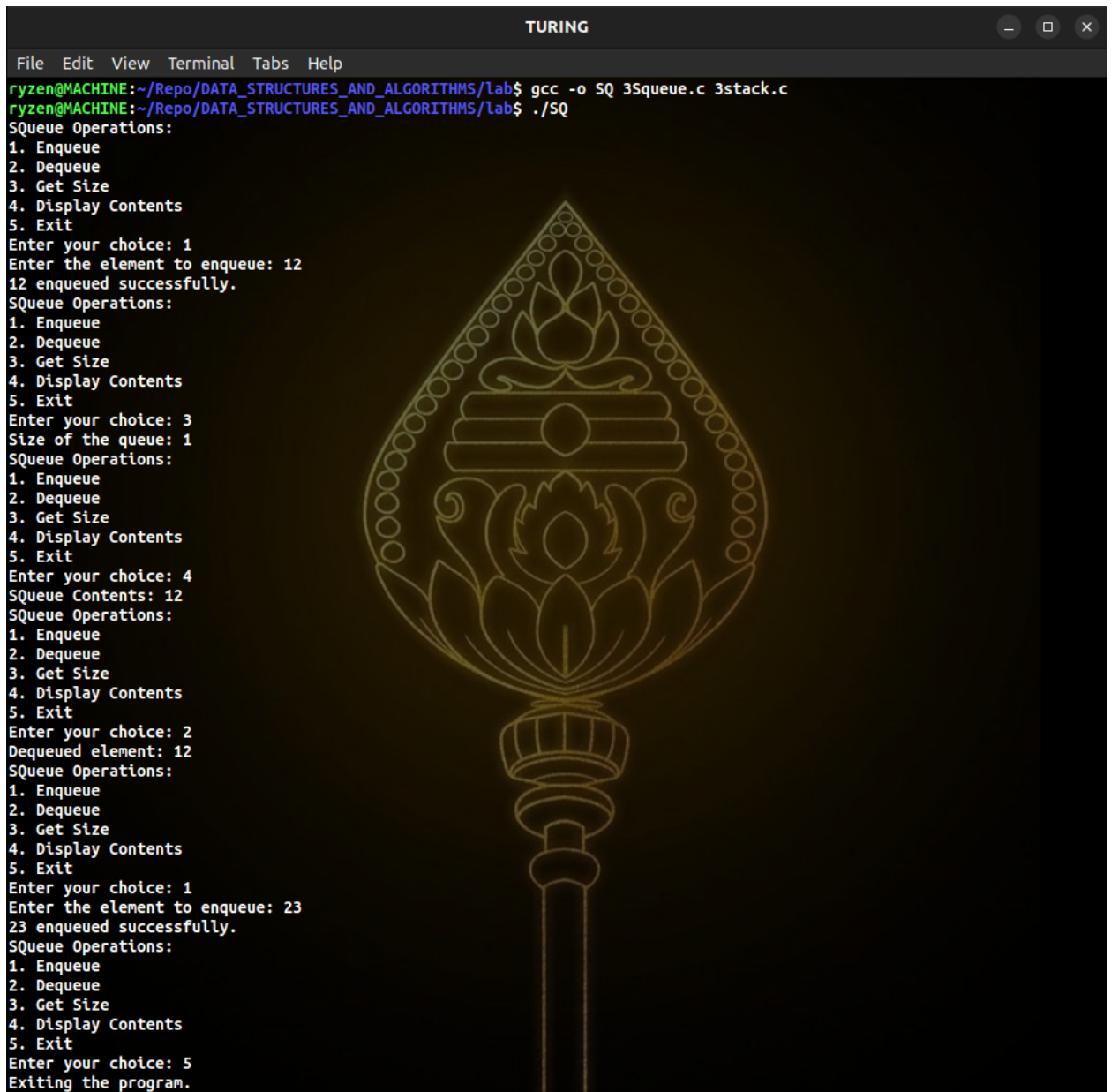


Data Structures and Algorithms

Assignment - III

1. Implement Queue Data Structure Called SQueue Using Stack



```
TURING
File Edit View Terminal Tabs Help
ryzen@MACHINE:~/Repo/DATA_STRUCTURES_AND_ALGORITHMS/lab$ gcc -o SQ 3Squeue.c 3stack.c
ryzen@MACHINE:~/Repo/DATA_STRUCTURES_AND_ALGORITHMS/lab$ ./SQ
SQueue Operations:
1. Enqueue
2. Dequeue
3. Get Size
4. Display Contents
5. Exit
Enter your choice: 1
Enter the element to enqueue: 12
12 enqueued successfully.
SQueue Operations:
1. Enqueue
2. Dequeue
3. Get Size
4. Display Contents
5. Exit
Enter your choice: 3
Size of the queue: 1
SQueue Operations:
1. Enqueue
2. Dequeue
3. Get Size
4. Display Contents
5. Exit
Enter your choice: 4
SQueue Contents: 12
SQueue Operations:
1. Enqueue
2. Dequeue
3. Get Size
4. Display Contents
5. Exit
Enter your choice: 2
Dequeued element: 12
SQueue Operations:
1. Enqueue
2. Dequeue
3. Get Size
4. Display Contents
5. Exit
Enter your choice: 1
Enter the element to enqueue: 23
23 enqueued successfully.
SQueue Operations:
1. Enqueue
2. Dequeue
3. Get Size
4. Display Contents
5. Exit
Enter your choice: 5
Exiting the program.
```

2. Implement Stack Data Structure Called QStack Using Queue

```
TURING
File Edit View Terminal Tabs Help
ryzen@MACHINE:~/Repo/DATA_STRUCTURES_AND_ALGORITHMS/Lab$ gcc 4QStack.c -o QS
ryzen@MACHINE:~/Repo/DATA_STRUCTURES_AND_ALGORITHMS/Lab$ ./QS

QStack Operations:
1. Push
2. Pop
3. Top
4. Is Empty
5. Get Size
6. Clear
7. Quit
Enter your choice: 1
Enter data to push: 12

QStack Operations:
1. Push
2. Pop
3. Top
4. Is Empty
5. Get Size
6. Clear
7. Quit
Enter your choice: 3
Top item: 12

QStack Operations:
1. Push
2. Pop
3. Top
4. Is Empty
5. Get Size
6. Clear
7. Quit
Enter your choice: 4
QStack is not empty.

QStack Operations:
1. Push
2. Pop
3. Top
4. Is Empty
5. Get Size
6. Clear
7. Quit
Enter your choice: 5
QStack Size: 1

QStack Operations:
1. Push
2. Pop
3. Top
4. Is Empty
5. Get Size
6. Clear
7. Quit
Enter your choice: 7
ryzen@MACHINE:~/Repo/DATA_STRUCTURES_AND_ALGORITHMS/Lab$ _
```

