```
File: /src/DSA/01-SparseMatrix.c
Original Matrix:
0 0 1 0 0
0 0 6 7 0
0 1 0 0 0
0 1 8 0 2

Sparse Matrix Representation
(row, column, value):
(1, 3) = 1
(2, 3) = 6
(2, 4) = 7
(3, 2) = 1
(4, 2) = 1
(4, 3) = 8
(4, 5) = 2

Samir Dumre
Section: A, Roll: 22
---------------------------------------
File: /src/DSA/02-RecursiveFactorial.c
n = 5
Factorial of 5 is 120

Samir Dumre
Section: A, Roll: 22
---------------------------------------
File: /src/DSA/03-Stack.c
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
1
Enter the value to push: 10
Pushed: 10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
1
Enter the value to push: 20
Pushed: 20
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
3
Current Stack:
20 -> 10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
2
Popped: 20
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
3
Current Stack:
10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
4
Exiting...

Samir Dumre
Section: A, Roll: 22
```

```
File: /src/DSA/01-SparseMatrix.c
Original Matrix:
0 0 1 0 0
0 0 6 7 0
0 1 0 0 0
0 1 8 0 2

Sparse Matrix Representation
(row, column, value):
(1, 3) = 1
(2, 3) = 6
(2, 4) = 7
(3, 2) = 1
(4, 2) = 1
(4, 3) = 8
(4, 5) = 2

Saurav Khatiwada
Section: A, Roll: 01
---------------------------------------
File: /src/DSA/02-RecursiveFactorial.c
n = 5
Factorial of 5 is 120

Saurav Khatiwada
Section: A, Roll: 01
---------------------------------------
File: /src/DSA/03-Stack.c
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
1
Enter the value to push: 10
Pushed: 10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
1
Enter the value to push: 20
Pushed: 20
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
3
Current Stack:
20 -> 10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
2
Popped: 20
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
3
Current Stack:
10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
4
Exiting...

Saurav Khatiwada
Section: A, Roll: 01
```

```
File: /src/DSA/04-Queue.c
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 10
Queued: 10
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 20
Queued: 20
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
3
Current Queue:
10 <- 20
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
2
Dequeued: 10
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
3
Current Queue:
20
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
4
Exiting...

Saurav Khatiwada
Section: A, Roll: 01
```

```
File: /src/DSA/05-CircularQueue.c
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 1
Queued: 1
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 2
Queued: 2
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 3
Queued: 3
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 4
Queued: 4
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 5
Queued: 5
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
3
Current Queue:
1 2 3 4 5
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
2
Dequeued: 1
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
2
Dequeued: 2
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
3
Current Queue:
3 4 5
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 6
Queued: 6
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 7
Queued: 7
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
3
Current Queue:
3 4 5 6 7
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 8
Queue Overflow
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
4
Exiting...

Saurav Khatiwada
Section: A, Roll: 01
```

```
File: /src/DSA/06-i-SequentialSearch.c
{ 10, 20, 30, 40, 50 }

Search for: 30
Found at index 2

Saurav Khatiwada
Section: A, Roll: 01
----------------------------------------
File: /src/DSA/06-ii-BinarySearch.c
{ 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 }
Search for: 12
Found at index 5

Saurav Khatiwada
Section: A, Roll: 01
----------------------------------------
File: /src/DSA/08-BubbleSort.c
Size of Array: 4
Enter 4 elements:
5
1
4
2
{ 1, 5, 4, 2 }
{ 1, 4, 5, 2 }
{ 1, 4, 2, 5 }
{ 1, 4, 2, 5 }
{ 1, 2, 4, 5 }
{ 1, 2, 4, 5 }
Sorted array:
{ 1, 2, 4, 5 }

Saurav Khatiwada
Section: A, Roll: 01
----------------------------------------
File: /src/DSA/09-SelectionSort.c
Size of Array: 4
Enter 4 elements:
5
1
4
2
{ 1, 5, 4, 2 }
{ 1, 2, 4, 5 }
{ 1, 2, 4, 5 }
Sorted array:
{ 1, 2, 4, 5 }

Saurav Khatiwada
Section: A, Roll: 01
```

```
File: /src/DSA/10-InsertionSort.c
Size of Array: 4
Enter 4 elements:
5
1
4
2
{ 1, 5, 4, 2 }
{ 1, 4, 5, 2 }
{ 1, 2, 4, 5 }
Sorted array:
{ 1, 2, 4, 5 }

Saurav Khatiwada
Section: A, Roll: 01
---------------------------------
File: /src/DSA/11-QuickSort.c
Size of Array: 5
Enter 5 elements:
5
1
9
3
7
Sorted array:
{ 1, 3, 5, 7, 9 }

Saurav Khatiwada
Section: A, Roll: 01
---------------------------------
File: /src/DSA/12-MergeSort.c
Size of Array: 4
Enter 4 elements:
5
1
4
2

[2] Left subarray:
{ 5 }
Right subarray:
{ 1 }
[Merged]: { 1, 5 }

[2] Left subarray:
{ 4 }
Right subarray:
{ 2 }
[Merged]: { 2, 4 }

[1] Left subarray:
{ 1, 5 }
Right subarray:
{ 2, 4 }
[Merged]: { 1, 2, 4, 5 }
Sorted array:
{ 1, 2, 4, 5 }

Saurav Khatiwada
Section: A, Roll: 01
```

```
File: /src/DSA/13-Stack-LinkedList.c
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
1
Enter the value to push: 10
Pushed: 10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
1
Enter the value to push: 20
Pushed: 20
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
3
Current Stack:
20 -> 10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
2
Popped: 20
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
3
Current Stack:
10
Menu: 1.PUSH 2.POP 3.PRINT 4.EXIT
4
Exiting...

Saurav Khatiwada
Section: A, Roll: 01
-----------------------------------------
File: /src/DSA/14-Queue-LinkedList.c
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 10
Queued: 10
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
1
Enter the value to enqueue: 20
Queued: 20
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
3
Current Queue:
10 <- 20
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
2
Dequeued: 10
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
3
Current Queue:
20
Menu: 1.ENQUEUE 2.DEQUEUE 3.PRINT 4.EXIT
4
Exiting...

Saurav Khatiwada
Section: A, Roll: 01
```

```
File: /src/DSA/15-SinglyLinkedList.c
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
1
Enter the value to add: 10
Added: 10
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
1
Enter the value to add: 20
Added: 20
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
1
Enter the value to add: 30
Added: 30
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
3
Current List:
10 -> 20 -> 30 -> NULL
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
2
(Prints list first) Enter the value to delete: 20
Deleted: 20
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
3
Current List:
10 -> 30 -> NULL
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
2
(Prints list first) Enter the value to delete: 5
Value not found in the list
Menu: 1.ADD NODE 2.DELETE NODE 3.PRINT 4.EXIT
4
Exiting...

Saurav Khatiwada
Section: A, Roll: 01
--------------------------------------------------
```