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Subject :
Data Structure and algorithms

Assignment 2

Question 1

time complexity = O(i*j) where i and j is rows and columns of matrix respectively

space complexity = O(i*j) where i and j is rows and columns of matrix respectively

```
PS C:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo> cd "c:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo\Assignment 2\" ; if ($?) { gcc S20230010193-Q1.c
S20230010193-Q1 } ; if ($?) { .\S20230010193-Q1 }
Enter the order of matrix in i*j:
2
4
Enter the matrix:
2
4
1
3
56
8
9
99
your enter matrix is:
2 4 1 3
56 8 9 99

After transposing the matrix:
order of matrix is 4*2
the matrix is:
2 56
4 8
1 9
3 99
PS C:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo\Assignment 2>
```

Question 2

time complexity: O(n) where n is size of string

space complexity: O(1) it is constant as we need constant amount of space which is 26 element matrix to store frequency

```
25  int main()
26  {
27      char a[] = "mmaad";
28      printf("%d",palindromeparmutation(a));
29  }
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS                                                    Code

PS C:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo> cd "c:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo\Assignment 2\" ; if ($?) { gcc S20230010193-Q2.c -o
S20230010193-Q2 } ; if ($?) { .\S20230010193-Q2 }
1
PS C:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo\Assignment 2>
```

Question 3

recursive relation: F[n] = F[n-1] + F[n-2] + F[n-3]

```
18  int main(){
19      printf("%d",way(10));
20  }
```

Debug Console (Ctrl+Shift+Y)

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS                                                    Code

PS C:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo> cd "c:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo\" ; if ($?) { gcc S20230010193-Q3.c -o S20230010193-
Q3 } ; if ($?) { .\S20230010193-Q3 }
274
PS C:\IIITS ASSIGNMENTS\Sem 2\Data Structure And Algo>
```