Parallel Programming Assignment
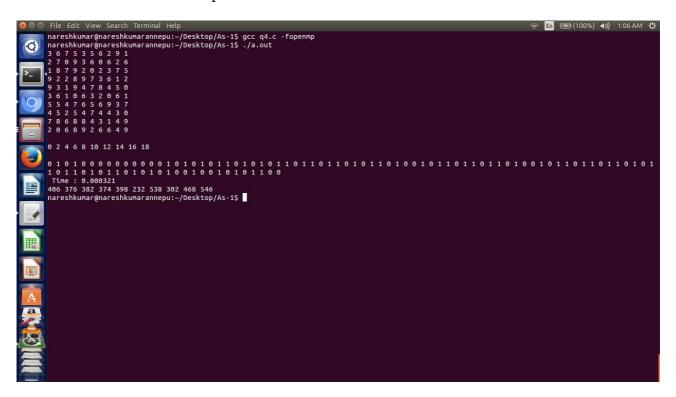
1.Parallel Addition with at least 100 numbers.

2.Parallel Matrix Transpose.

3. Parallel Prefix-Sum.

```
nareshkumar@nareshkumarannepu:~/Desktop/As-1$ gcc q3.c -lm -fopenmp
nareshkumar@nareshkumarannepu:~/Desktop/As-1$ ./a.out

 Time :0.000276
1 1 1 1 1 1 1 1
nareshkumar@nareshkumarannepu:~/Desktop/As-1$
```

4.Parallel Matrix-Vector Multiplication

```
nareshkumar@nareshkumarannepu:~/Desktop/As-1$ gcc q4.c -fopenmp
nareshkumar@nareshkumarannepu:~/Desktop/As-1$ ./a.out
3 6 7 5 3 5 6 2 9 1
2 7 0 9 3 6 0 6 2 6
1 8 7 9 2 0 2 3 7 5
9 2 2 8 9 7 3 6 1 2
9 3 1 9 4 7 8 4 5 0
3 6 1 0 6 3 2 0 6 1
5 5 4 7 6 5 6 9 3 7
4 5 2 5 4 7 4 4 3 0
7 8 6 8 8 4 3 1 4 9
2 0 6 8 9 2 6 6 4 9

0 2 4 6 8 10 12 14 16 18

0 1 0 1 0 0 0 0 0 0 0 0 0 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 1 0 1 1 0 1 0 1 1 0 1 0 1 0 0 0 1 0 1 1 0 1 1 0 1 1 0 1 0 0 1 0 1 1 0 1 1 0 1 1 0 1 0 1
1 0 1 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 0 0 0 1 0 1 0 1 1 0 0
 Time : 0.000321
406 376 382 374 398 232 538 302 468 546
nareshkumar@nareshkumarannepu:~/Desktop/As-1$
```

5.Parallel Pointer Doubling to find roots of a graph.

```
nareshkumar@nareshkumarannepu:~/Desktop/As-1$ gcc q5.c -fopenmp
nareshkumar@nareshkumarannepu:~/Desktop/As-1$ ./a.out

0 1 2 3 4 5 6 7 8 9
3 6 7 5 3 5 6 2 9 1
0 1 2 3 4 5 6 7 8 9
5 6 2 5 5 5 6 2 1 6
0 1 2 3 4 5 6 7 8 9
5 6 2 5 5 5 6 2 6 6
0 1 2 3 4 5 6 7 8 9
5 6 2 5 5 5 6 2 6 5
0 1 2 3 4 5 6 7 8 9
5 6 2 5 5 5 6 2 6 5

  Time : 0.000397

0 1 2 3 4 5 6 7 8 9
5 6 2 5 5 5 6 2 6 5
nareshkumar@nareshkumarannepu:~/Desktop/As-1$
```