

## Compilation

To make the README.md into a README.pdf, just run the following in a Linux terminal.

```
make README
```

A .pdf version of the README is created for easier readability. Make sure Pandoc and Tex is installed before you do this.

## Serial code

**Compilation and execution** To compile, link and execute the serial part of the test program, run the following in a Linux terminal:

```
make serial
```

**Output** The prescription above will test all functions and produce output that should look something like this:

```
-----  
Testing read_graph_from_file1:  
-----
```

```
Nodes = 50000
```

```
Edges = 146823
```

```
Timeused by read_graph_from_file1 = 0.174965 seconds  
-----
```

```
Testing count_mutual_links1:  
-----
```

```
Total mutual web linkages = 13165067
```

```
Timeused by count_mutual_links1 = 1.747335 seconds  
-----
```

```
Testing top_n_webpages:  
-----
```

Ranking	Involvements	Web page number
1	26262	7138
2	9674	246
3	7892	7687
4	7856	1660
5	7820	7604
6	7820	7605
7	7820	7607
8	7773	7606
9	7045	18266
10	6821	11

```
-----
```

```
Timeused by top_n_webpages = 0.002166 seconds
```

```

-----
Testing read_graph_from_file2:
-----
Nodes = 50000
Edges = 146823
Timeused by read_graph_from_file2 = 0.030421 seconds
-----
Testing count_mutual_links2:
-----
Total mutual web linkages = 13165067
Timeused by count_mutual_links2 = 0.000296 seconds
-----
Testing top_n_webpages:
-----

```

Ranking	Involvements	Web page number
1	26262	7138
2	9674	246
3	7892	7687
4	7856	1660
5	7820	7604
6	7820	7605
7	7820	7607
8	7773	7606
9	7045	18266
10	6821	11

```

-----
Timeused by top_n_webpages = 0.002233 seconds

```

## Parallel code

**Important note!** The parallelized version of the codes use a feature from OpenMP 4.5 or later (array reduction, to be specific), so it's necessary to have a gcc compiler which is compatible with this.

**Compilation and execution** To compile, link and execute the parallel part of the test program, run the following in a Linux terminal:

```
make parallel
```

This should produce similar output to that of the serial codes, however it will do this for several number of threads and thus will print the same tables several times so one can check for consistency of output as well as the corresponding execution time. More detailed analysis of the time measurements and speedup is found in the report.