

EE3980 Algorithms

Homework 12. Longest Path Problem

Due: June 3, 2018

Given n cities and the distances between different cities, please find the longest path to travel each city only once. The path needs to be a Hamiltonian cycle, of course. Again, six data files are provided to test your program. The file format is the same as the last homework, and the starting city of the path needs to be the first city in the data file.

The example of program execution and the output is shown below.

```
$ ./a.out < t1.dat
```

The longest path:

```
Ann Arbor -> Manhattan
```

```
Manhattan -> Corvallis
```

```
Corvallis -> Charlottesville
```

```
Charlottesville -> Iowa City
```

```
Iowa City -> Ann Arbor
```

```
Total distance: 75
```

Notes.

1. One executable and error-free **C** source file should be turned in. This source file should be named as `hw12.c`. Execution of the program is invoked by

```
$ ./a.out < t1.dat
```

And the output of the program is listed above.

2. A `pdf` file is also needed. This report file should be named as `hw12a.pdf`.
3. Submit your `hw12.c` and `hw12a.pdf` on EE workstations using the following command:

```
$ ~ee3980/bin/submit hw12 hw12.c hw12a.pdf
```

where `hw12` indicates homework 12.

4. Your report should be clearly written such that I can understand it. The writing, including English grammar, is part of the grading criteria.