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CPSC 441 Assignment 3 -

I have 2 files, one has 3 algorithms and the other has 1. I tried to merge both files, but it would print only the averages for some reason, so I had to split into 2 files and the reason why this written summary is submitted late. All algorithms should work

How to compile: 2 files

The lord of the ring (lotr.c) file has the SHP, SDP and STP algorithm

- Compile: gcc -o lotr lotr.c
- SHP: ./lotr <map file>.txt <house file>.txt SHP
- SDP: ./lotr <map file>.txt <house file>.txt SDP
- STP: ./lotr <map file>.txt <house file>.txt STP
- EX: ./lotr canadamap.txt canadahomes.txt SHP   ./lotr bilbomap.txt bilbohomes.txt SDP
- Compile: gcc -o FTP FTP.c
- FTP: ./FTP bilbomap.txt bilbohomes.txt FTP

SHP results:

```
bash-4.4$ gcc lotr.c
bash-4.4$ ./a.out bilbomap.txt bilbohomes.txt SHP


Routing algorithm input: SHP
Destination is always Bilbo's home at node: B

//////////////////////////////////////////////////////////

DWARF - HOME - HOPS - - DIST  - TIME - GOLD - TROLLS - PATH
Balin   L       2       800    110    13     6        L G B
Bifur   F       2       200    80     5      7        F A B
Bofur   U       5       1400   150    16     19       U P K F A B
Bombur  M       3       900    130    14     11       M H C B
Dori    D       2       700    90     13     9        D C B
Dwalin  W       5       1700   170    30     17       W R M H C B
Fili    I       3       1000   140    25     13       I D C B
Gloin   G       1       500    30     12     3        G B
Kili    K       3       900    100    6      10       K F A B
Nori    O       5       1600   240    31     17       O J E D C B
Oin     N       4       1100   180    32     21       N I D C B
Ori     R       4       1500   140    24     15       R M H C B
Thorin  H       2       600    110    10     8        H C B

AVERAGE         3.15    992.3  128.5  17.8   12.0

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bash-4.4$ 
```

SDP results:

```
bash-4.4$ gcc lotr.c
bash-4.4$ ./a.out bilbomap.txt bilbohomes.txt SDP


Routing algorithm input: SDP
Destination is always Bilbo's home at node: B

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DWARF - HOME - HOPS - - DIST  - TIME - GOLD - TROLLS - PATH
Balin   L       2       800     110    13      6         L G B
Bifur   F       2       200     80     5       7         F A B
Bofur   U       5       1400    220    25      17        U P K L G B
Bombur  M       3       900     130    14      11        M H C B
Dori    D       2       700     90     13      9         D C B
Dwalin  W       5       1300    200    34      20        W R Q L G B
Fili    I       3       800     180    15      10        I H C B
Gloin   G       1       500     30     12      3         G B
Kili    K       3       900     170    15      8         K L G B
Nori    O       5       1000    240    26      20        O N I H C B
Oin     N       4       900     220    22      18        N I H C B
Ori     R       4       1100    170    28      18        R Q L G B
Thorin  H       2       600     110    10      8         H C B

AVERAGE         3.15    853.8   150.0  17.8    11.9

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bash-4.4$ 
```

STP results:

```
bash-4.4$ gcc lotr.c
bash-4.4$ ./a.out bilbomap.txt bilbohomes.txt STP


Routing algorithm input: STP
Destination is always Bilbo's home at node: B

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DWARF - HOME - HOPS - - DIST  - TIME - GOLD - TROLLS - PATH
Balin   L       2       800     110    13      6         L G B
Bifur   F       2       200     80     5       7         F A B
Bofur   U       5       1400    150    16      19        U P K F A B
Bombur  M       3       900     130    14      11        M H C B
Dori    D       2       700     90     13      9         D C B
Dwalin  W       5       1700    170    30      17        W R M H C B
Fili    I       3       1000    140    25      13        I D C B
Gloin   G       1       500     30     12      3         G B
Kili    K       3       900     100    6       10        K F A B
Nori    O       5       1200    200    24      21        O N M H C B
Oin     N       4       1100    180    20      19        N M H C B
Ori     R       4       1500    140    24      15        R M H C B
Thorin  H       2       600     110    10      8         H C B

AVERAGE         3.15    961.5   125.4  16.3    12.2

/////////////////////////////////////////////////////////



bash-4.4$ 
```

FTP results:

```
bash-4.4$ gcc FTP.c
bash-4.4$ ./a.out bilbomap.txt bilbohomes.txt FTP


Routing algorithm input: FTP
Destination is always Bilbo's home at node: B

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DWARF - HOME - HOPS - - DIST  - TIME - GOLD - TROLLS - PATH
Balin   L       2       800     110    13      6         L G B
Bifur   F       2       800     120    15      4         F G B
Bofur   U       5       2000    190    26      16        U P K F G B
Bombur  M       3       1400    150    18      7         M L G B
Dori    D       2       700     90     13      9         D C B
Dwalin  W       5       2200    190    34      13        W R M L G B
Fili    I       3       1100    220    26      8         I H G B
Gloin   G       1       500     30     12      3         G B
Kili    K       3       1500    140    16      7         K F G B
Nori    O       5       1700    380    40      14        O J I H G B
Oin     N       4       1600    200    24      15        N M L G B
Ori     R       4       2000    160    28      11        R M L G B
Thorin  H       2       900     150    21      6         H G B

AVERAGE         3.15    1323.1  163.8  22.0    9.2

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bash-4.4$ 
```