

Sample Problems



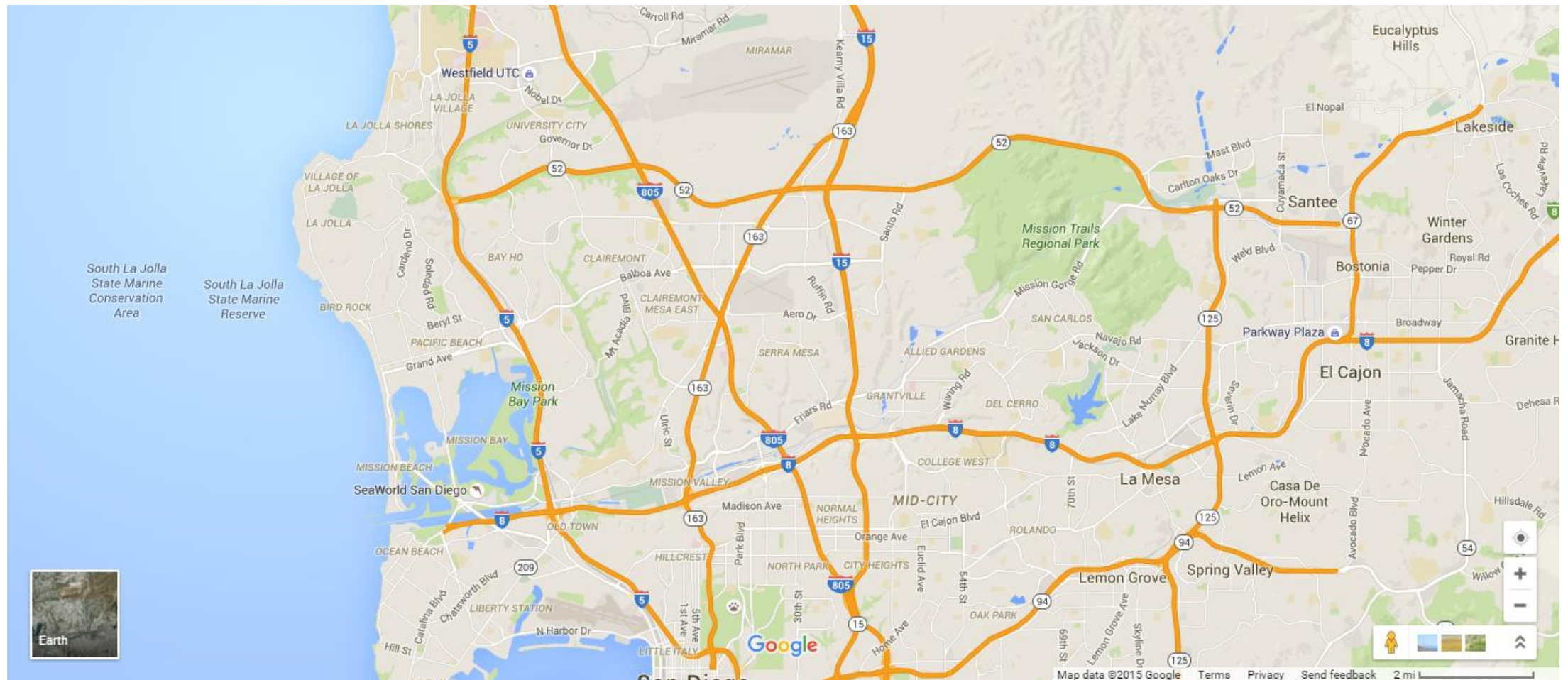
Testing Your Code



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by Christine Alvarado, Mia Minnes, and Leo Porter, 2015.**

By the end of this video you will be able to...

- Devise small examples to test your code



← from University of California San Diego, 9500 Gilman ...
to San Diego Zoo, 2920 Zoo Drive, San Diego, CA 92101

22 min (15.2 miles)

via I-5 S

21 min without traffic

University of California San Diego

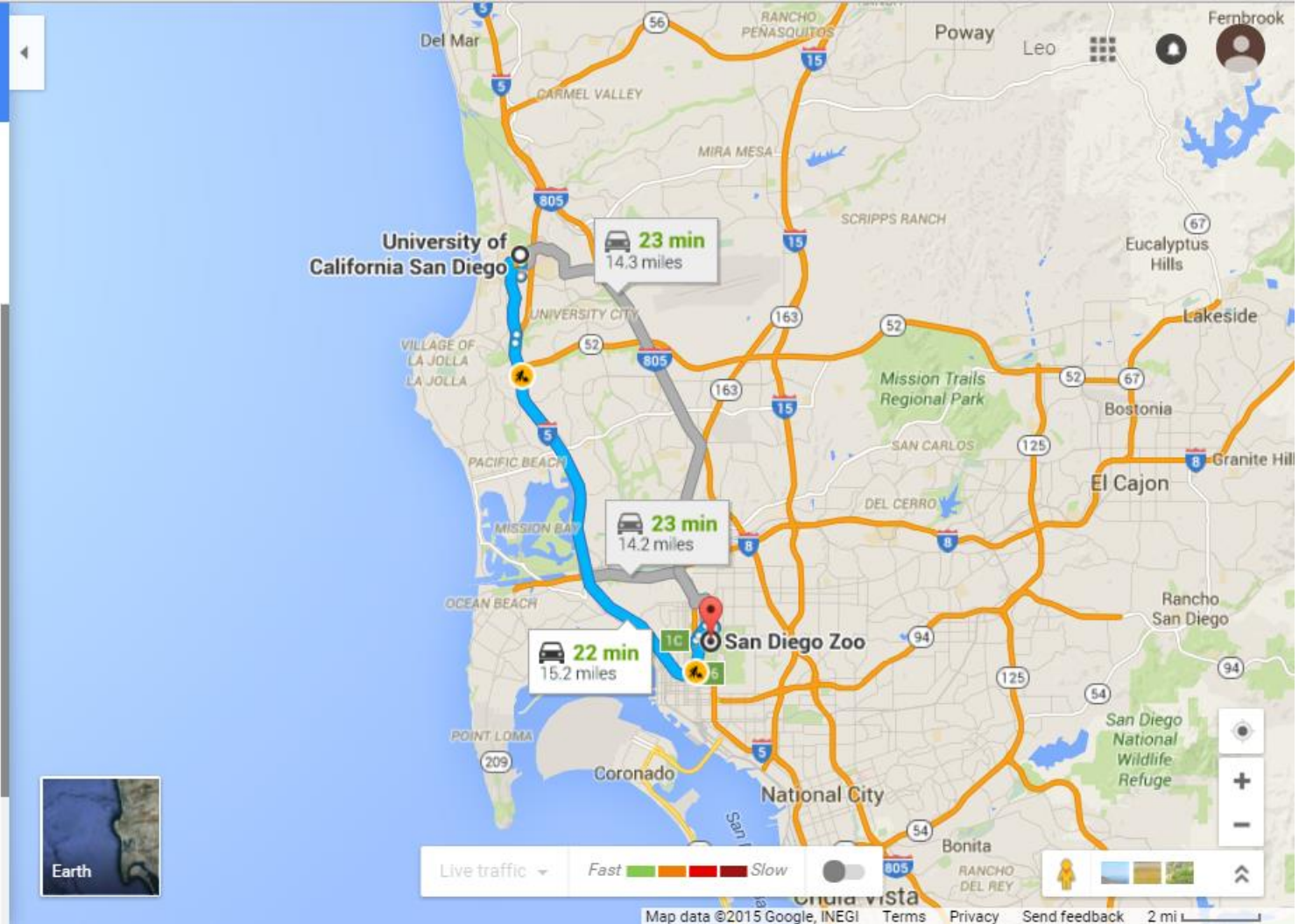
9500 Gilman Drive, La Jolla, CA 92093

- Get on I-5 S
8 min (2.8 mi)
- Continue on I-5 S to Richmond St. Take exit 1C from CA-163 N
12 min (11.6 mi)
- Continue on Richmond St. Take Upas St to Zoo Dr
2 min (0.8 mi)

San Diego Zoo

2920 Zoo Drive, San Diego, CA 92101

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



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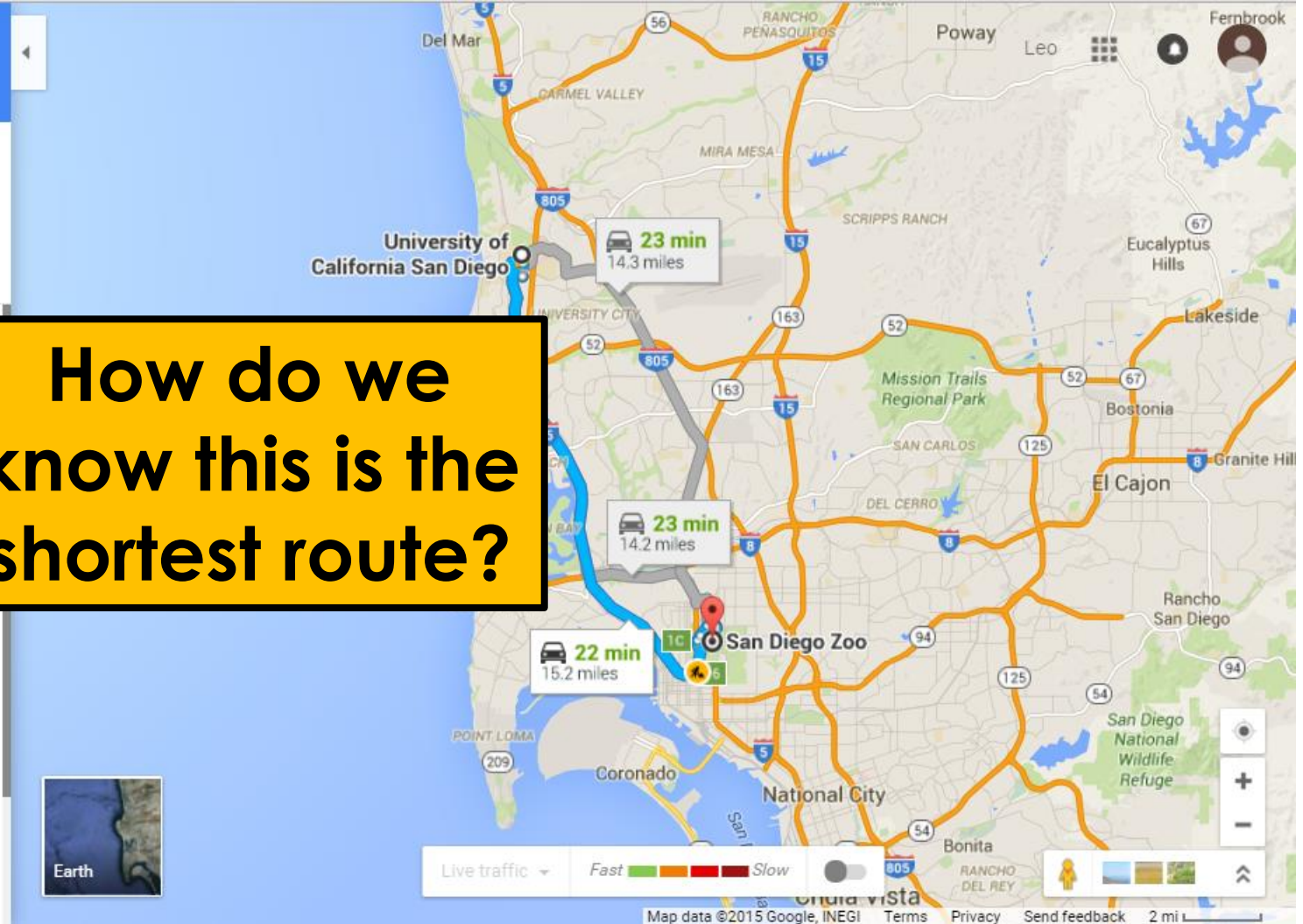
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San Diego Zoo

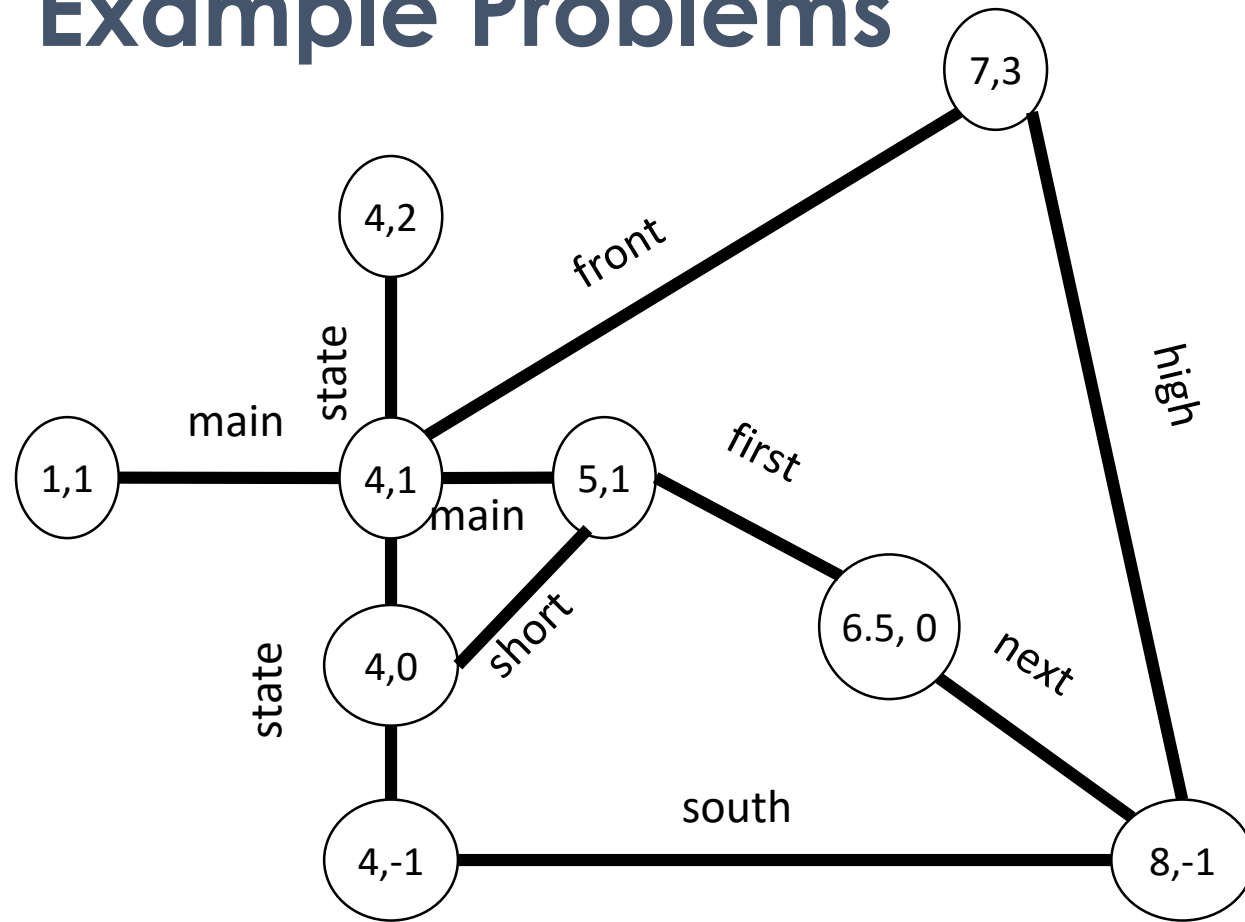
2920 Zoo Drive, San Diego, CA 92101

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How do we
know this is the
shortest route?

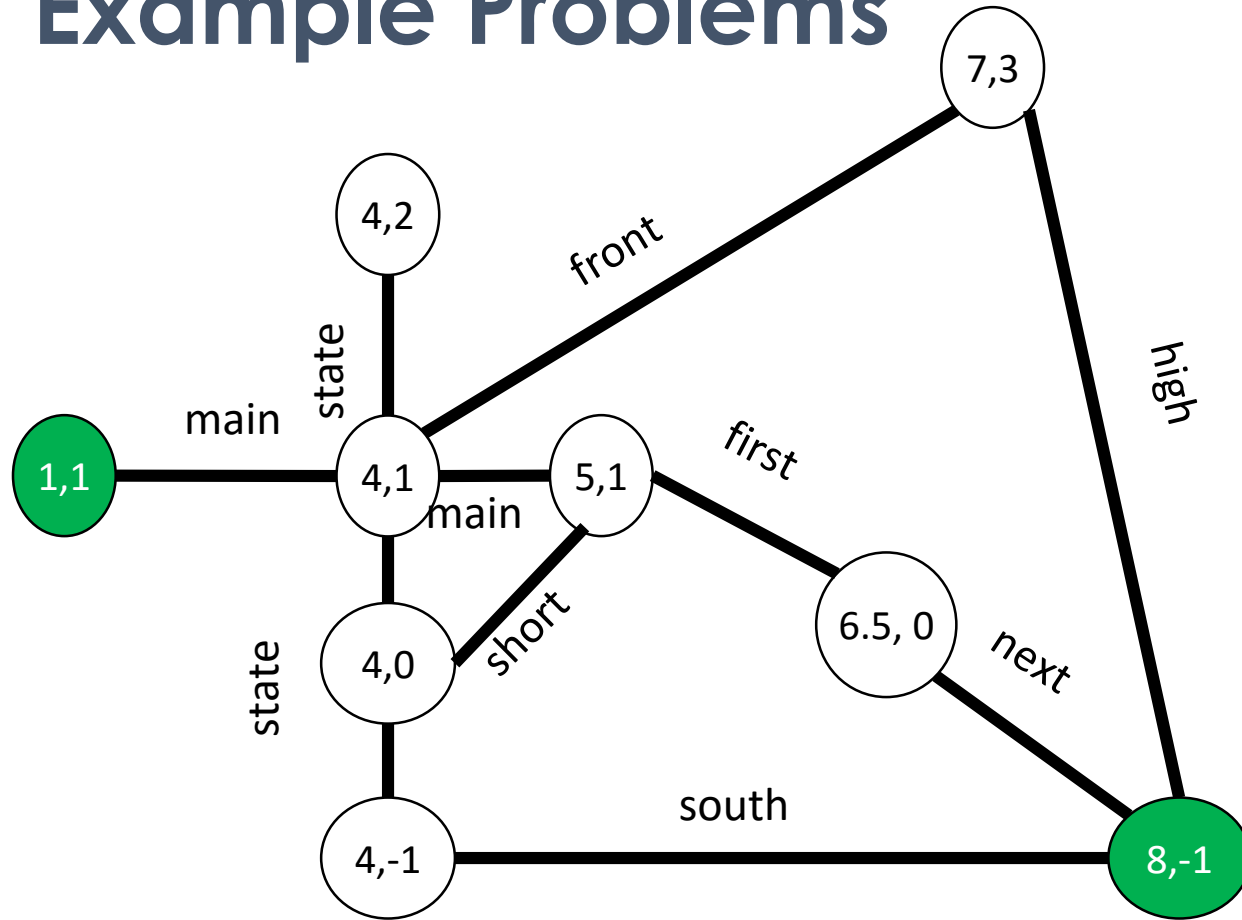


Example Problems



Example Problems

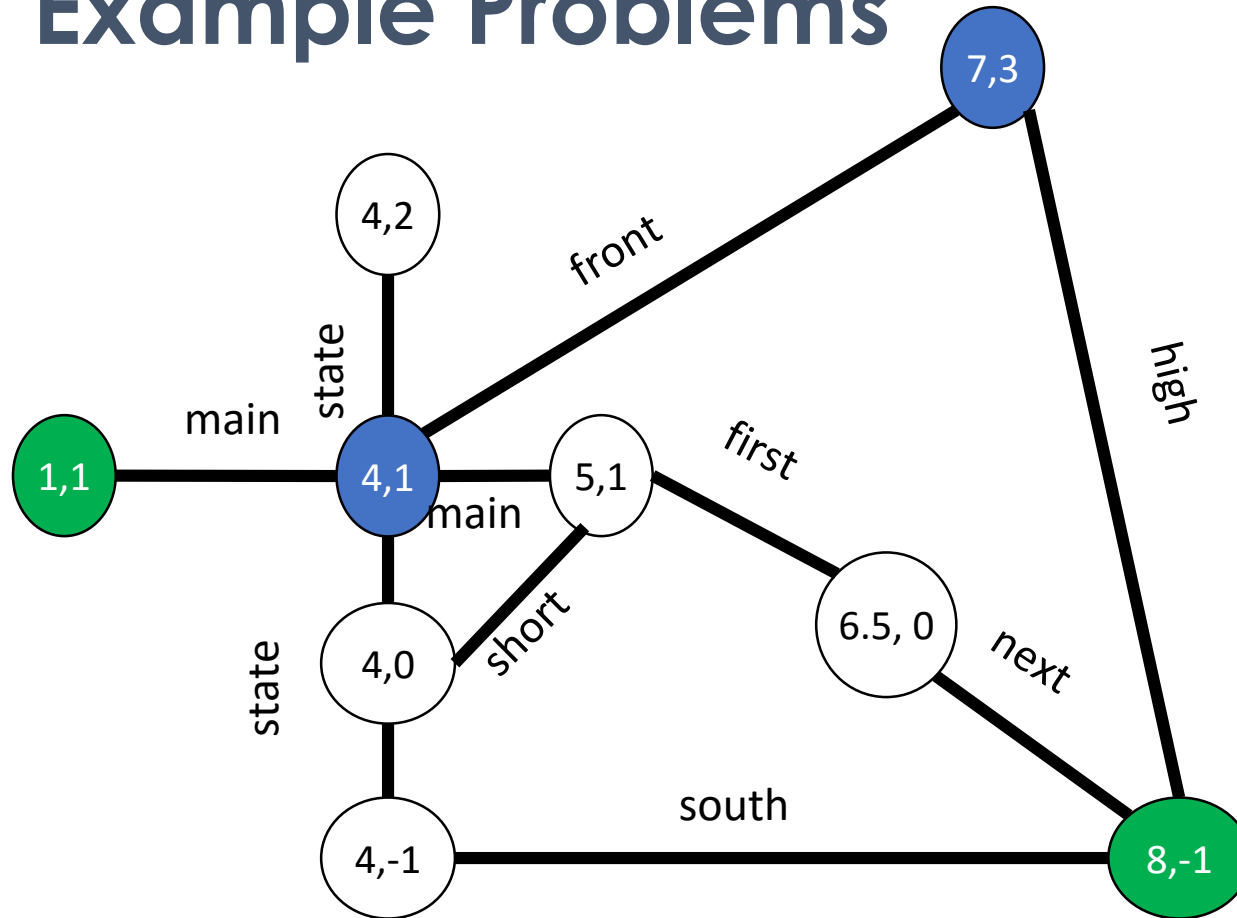
Fewest stops (BFS)



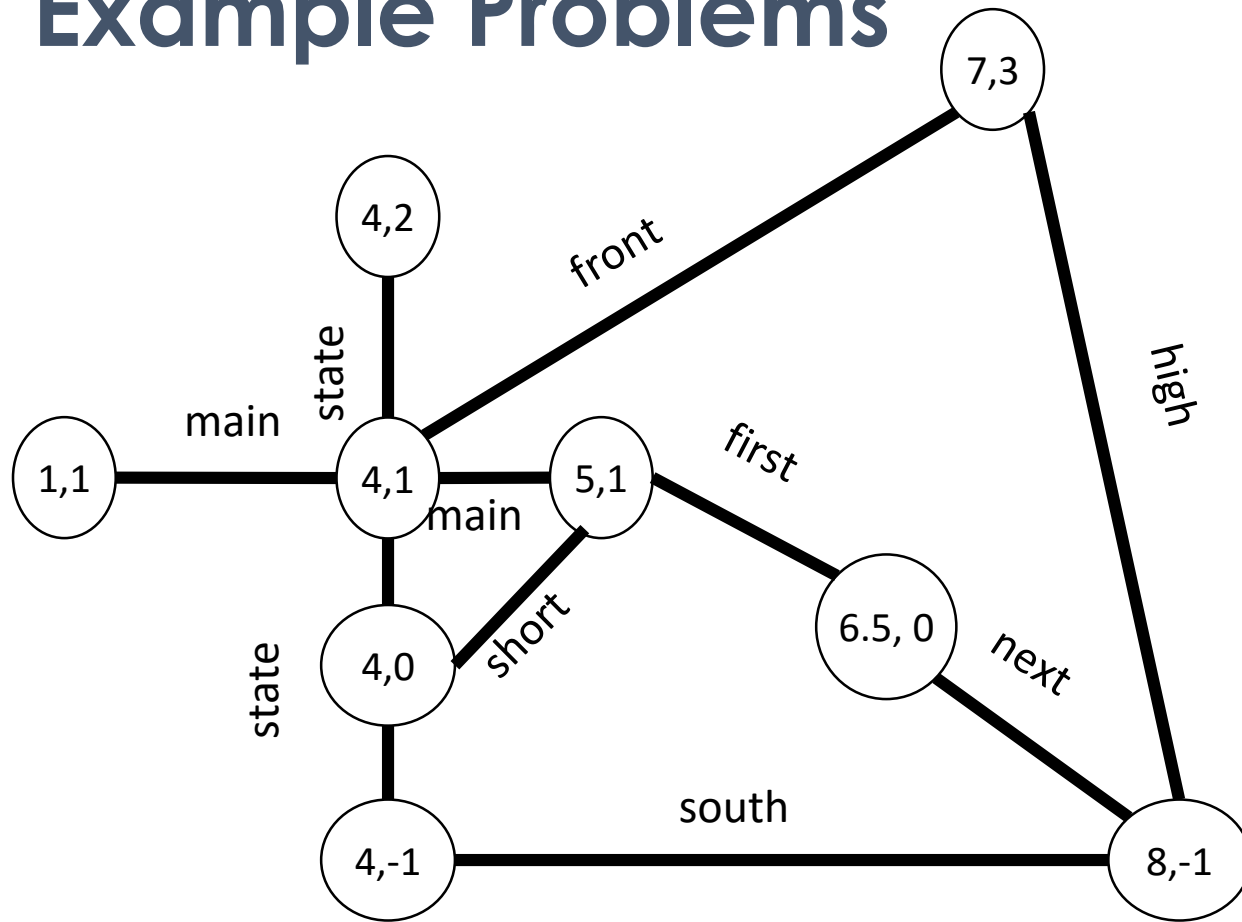
Example Problems

Fewest stops (BFS)

$(1,1) \rightarrow (4,1) \rightarrow (7,3) \rightarrow (8,-1)$



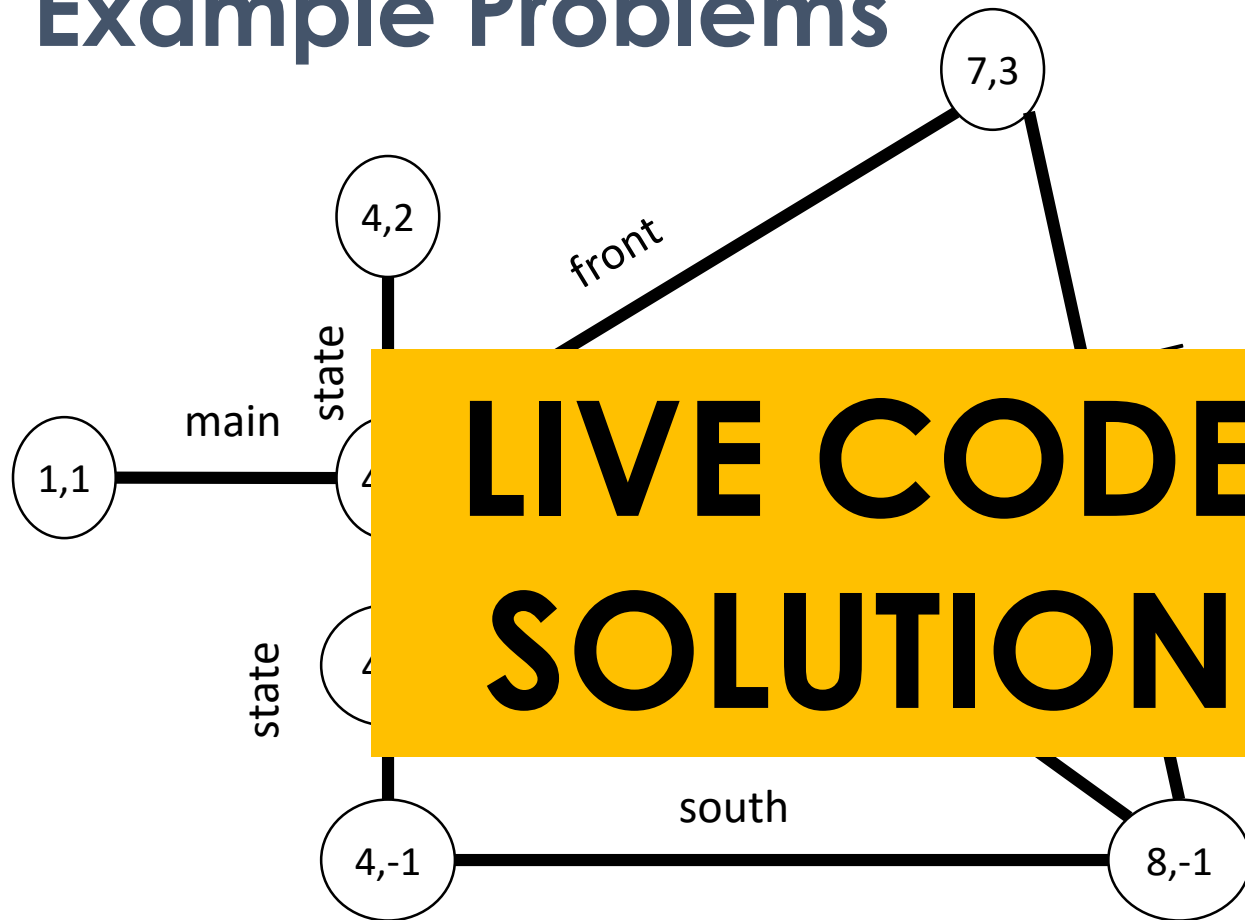
Example Problems



data/simpletest.map

```
1.0 1.0 4.0 1.0 "main" "city street"  
4.0 1.0 4.0 2.0 "state" "city street"  
4.0 1.0 4.0 0.0 "state" "city street"  
4.0 1.0 5.0 1.0 "main" "city street"  
4.0 1.0 7.0 3.0 "front" "city street"  
4.0 0.0 4.0 -1.0 "state" "city street"  
4.0 0.0 5.0 1.0 "short" "connector"  
7.0 3.0 8.0 -1.0 "high" "residential"  
8.0 -1.0 4.0 -1.0 "south" "residential"  
5.0 1.0 6.5 0.0 "first" "residential"  
6.5 0.0 8.0 -1.0 "next" "residential"
```

Example Problems



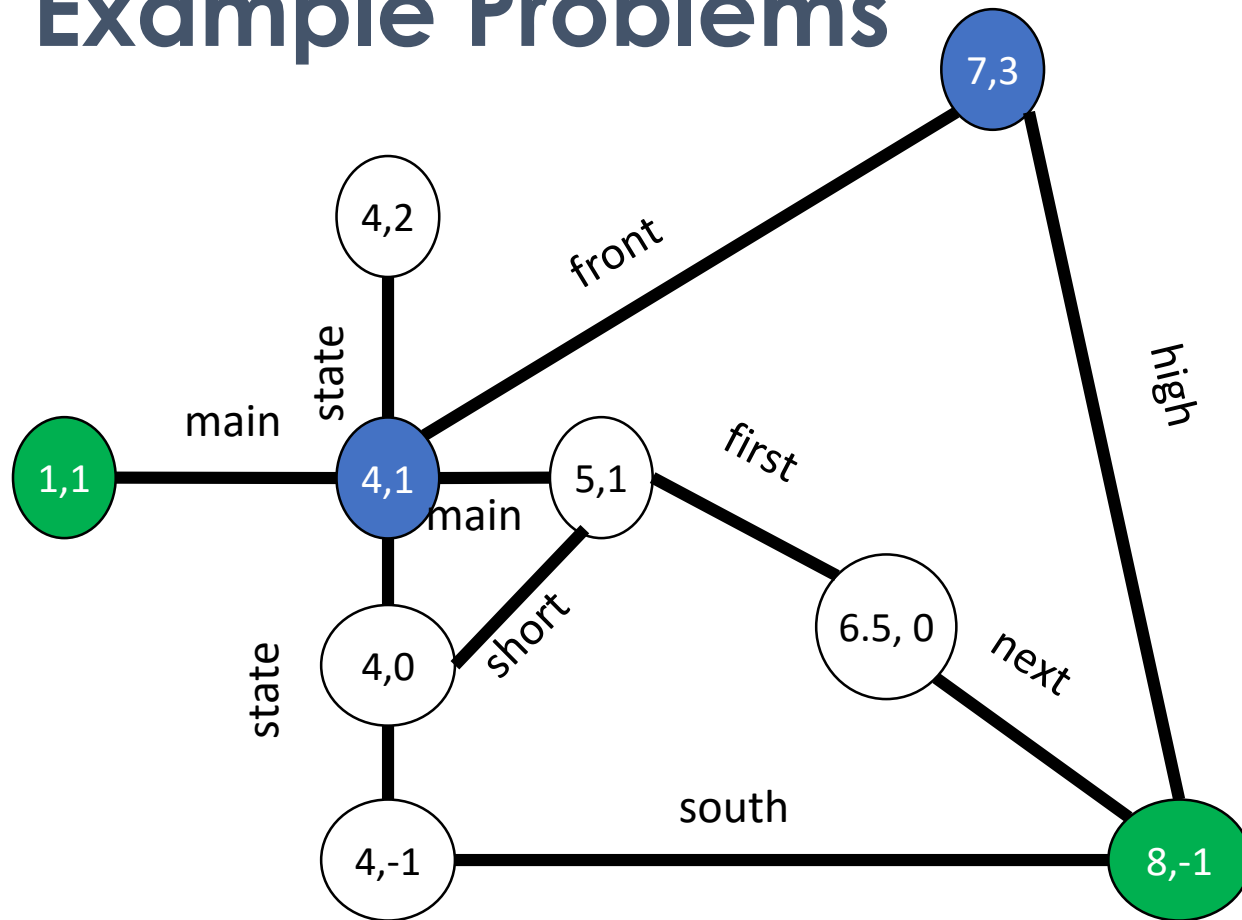
```
1.0 1.0 4.0 1.0 "main" "city street"
4.0 1.0 4.0 2.0 "state" "city street"
4.0 1.0 4.0 0.0 "state" "city street"
4.0 1.0 5.0 1.0 "main" "city street"
4.0 1.0 7.0 3.0 "front" "city street"
4.0 0.0 4.0 -1.0 "state" "city street"
.0 0.0 5.0 1.0 "short" "connector"
.0 3.0 8.0 -1.0 "high" "residential"
.0 -1.0 4.0 -1.0 "south" "residential"
.0 1.0 6.5 0.0 "first" "residential"
.5 0.0 8.0 -1.0 "next" "residential"
```

Example Problems

Fewest stops (BFS)

$(1,1) \rightarrow (4,1) \rightarrow (7,3) \rightarrow (8,-1)$

Run BFS on
simpletest.map
[Lat: 1.0, Lon: 1.0,
Lat: 4.0, Lon: 1.0,
Lat: 7.0, Lon: 3.0,
Lat: 8.0, Lon: -1.0]



Generating Test Cases

start		end		street	
lat	lon	lat	lon	name	streetType

1.0	1.0	4.0	1.0	"main"	"city street"
4.0	1.0	1.0	1.0	"main"	"city street"
...					

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**I encourage you to do
this on your own**