

Algorithms and Data Structures for Data Science

lab_dynamic

CS 277

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Learning Objectives

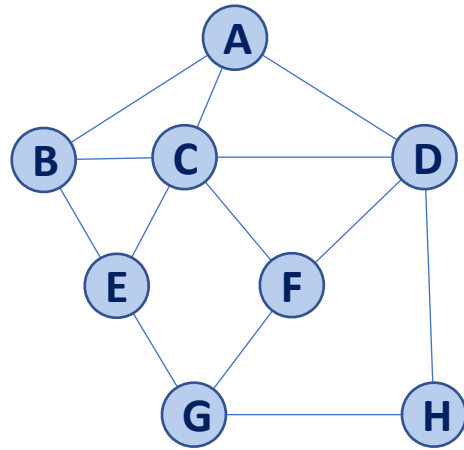
Use and modify an adjacency list

Implement BFS traversal

Solve real-world contact tracing using data structures

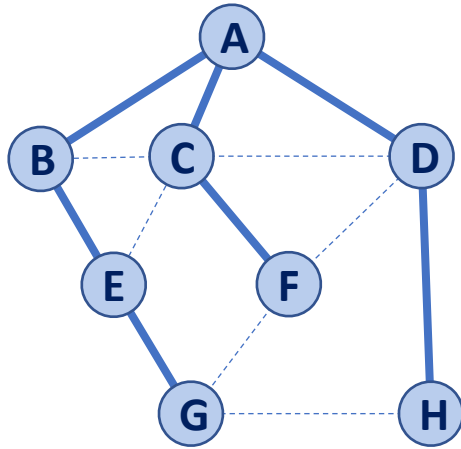
```
1 class vertObj():
2     def __init__(self, v):
3         self.val = v
4         self.eList = []
5
6         # Added for BFS
7         self.visited = 0
8         self.pred = None
9         self.dist = -1
10
11
12
```

```
1 class edgeObj():
2     def __init__(self, e):
3         self.v2 = e
4         self.parallel = None
5
6         # Added for BFS
7         self.label = 0
8
9
10
11
12
```



v	d	P	Adjacent Edges
A			B C D
B			A C E
C			A B D E F
D			A C F H
E			B C G
F			C D G
G			E F H
H			D G





v	d	P	Adjacent Edges
A	0	-	B C D
B	1	A	A C E
C	1	A	A B D E F
D	1	A	A C F H
E	2	B	B C G
F	2	C	C D G
G	3	E	E F H
H	2	D	D G

~~G H F E D C B A~~