

# [320] Queue Structures

Department of Computer Sciences  
University of Wisconsin-Madison

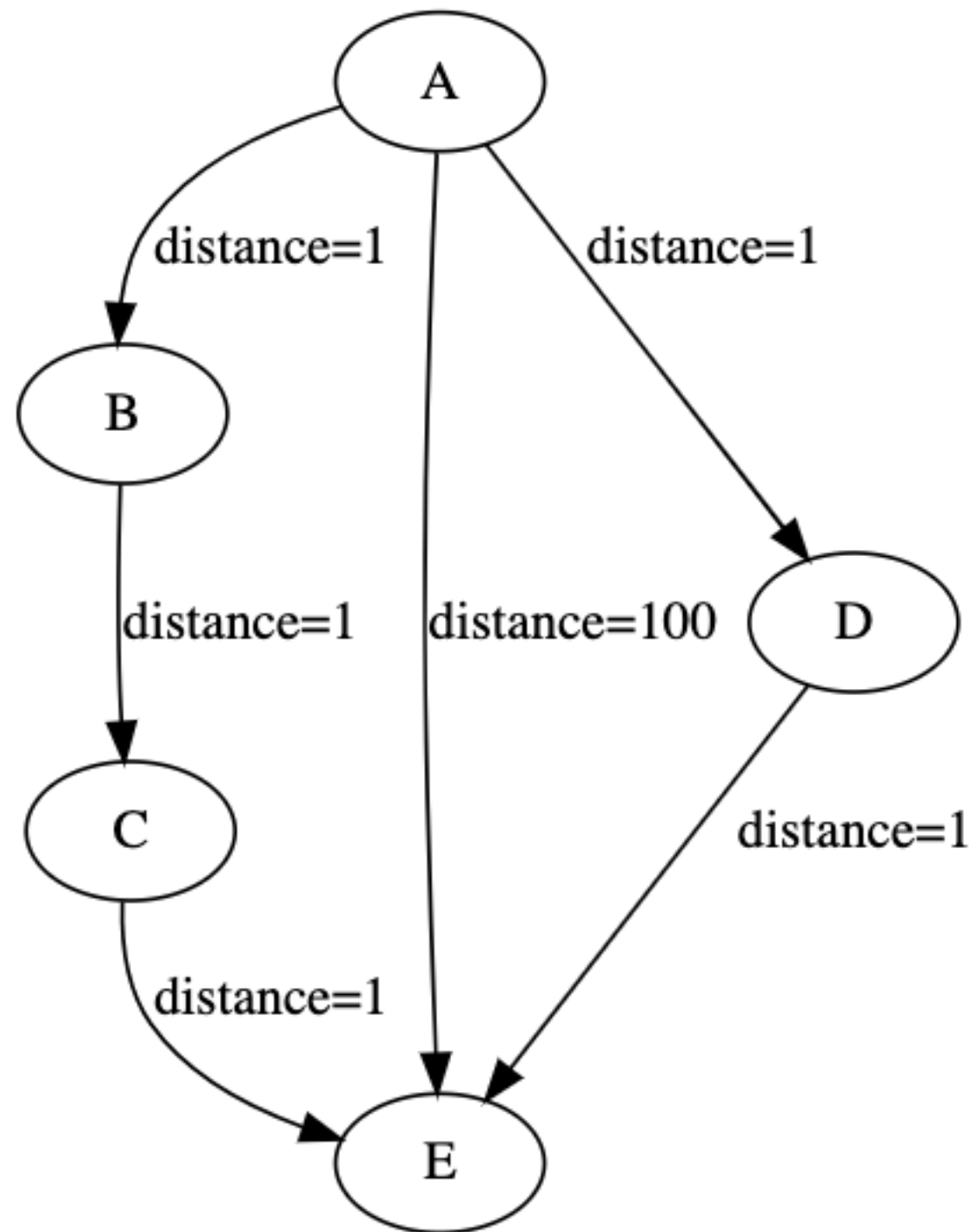
# Queueing Structures

# Shortest Weighted Path

What path will DFS choose?

What path will BFS choose?

What path would you choose?

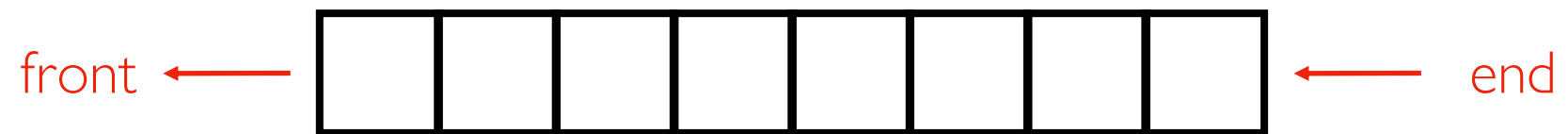


# Work queues ("to do" list)

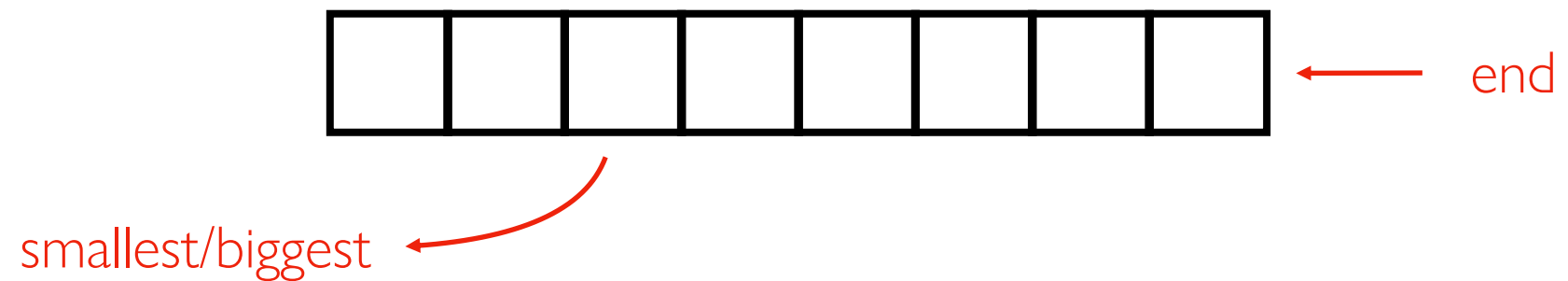
Stack  
(FILO)



Queue  
(FIFO)

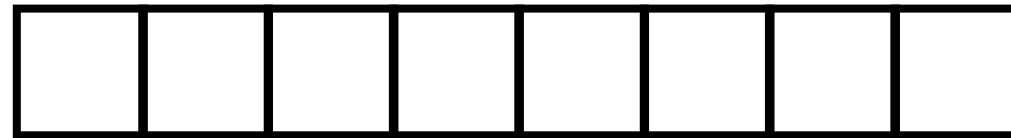


Priority Queue



# Work queues ("to do" list)

Stack  
(FILO)



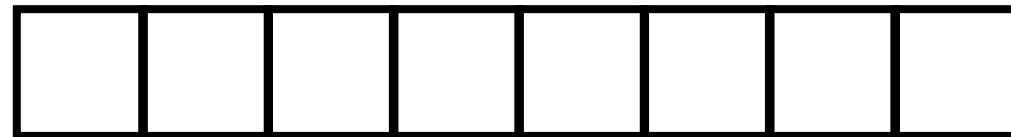
```
L.append(x)
```

← end  
→ end

```
x = L.pop(-1)
```

Queue  
(FIFO)

front ←



```
x = L.pop(0)
```

← end

```
L.append(x)
```

Priority Queue



smallest/biggest ←

```
L.sort()  
x = L.pop(-1)
```

← end

```
L.append(x)
```

*what operations are slow?*

# Work queues ("to do" list)

Stack  
(FILO)



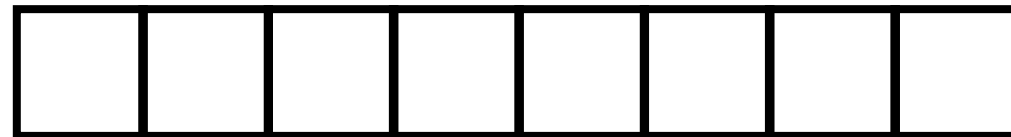
```
L.append(x)
```

← end  
→ end

```
x = L.pop(-1)
```

Queue  
(FIFO)

front ←



← end

!

```
x = L.pop(0)
```

```
L.append(x)
```

Priority Queue



← end

```
L.append(x)
```

smallest/biggest ←

!

```
L.sort()  
x = L.pop(-1)
```

*what operations are slow?*