CS210
Discussion

Week 4

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Attendance

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Today

- Project notes
- Buffer
- Josephus
- Finish through exercise 5
  - Show us passing Gradescope tests to leave early

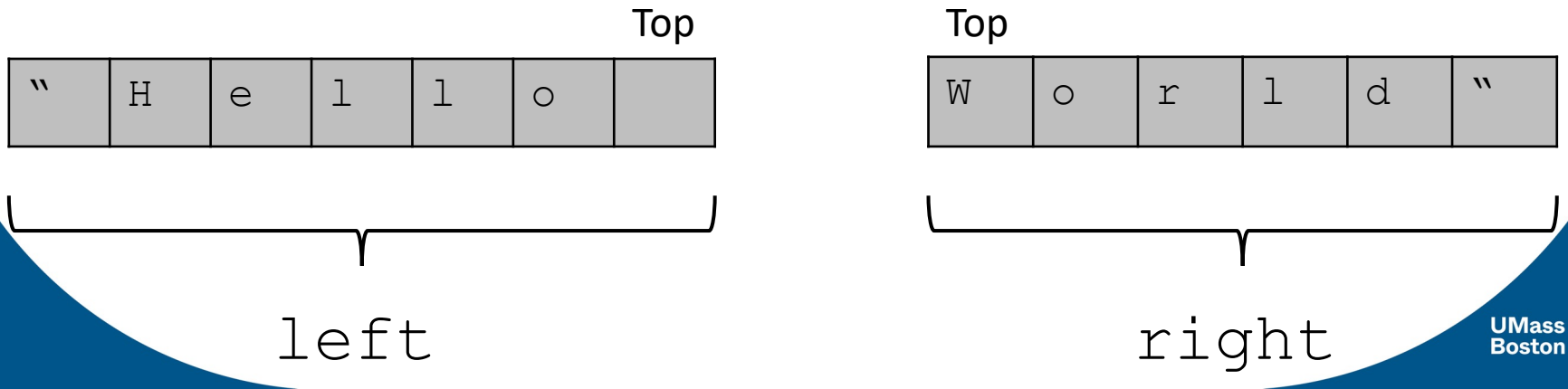
Some Project Notes

- You don’t need a lot of comments
  - But not none
- Double check your performance requirements
- Be consistent with your style
  - Spacing
- Remove commented code
- Indent your code blocks

Buffer

- Represent a text editor with two stacks
  - Implicit cursor (between the stacks)

```
protected LinkedStack<Character> left;  // chars left of cursor
protected LinkedStack<Character> right; // chars right of cursor
```



Buffer

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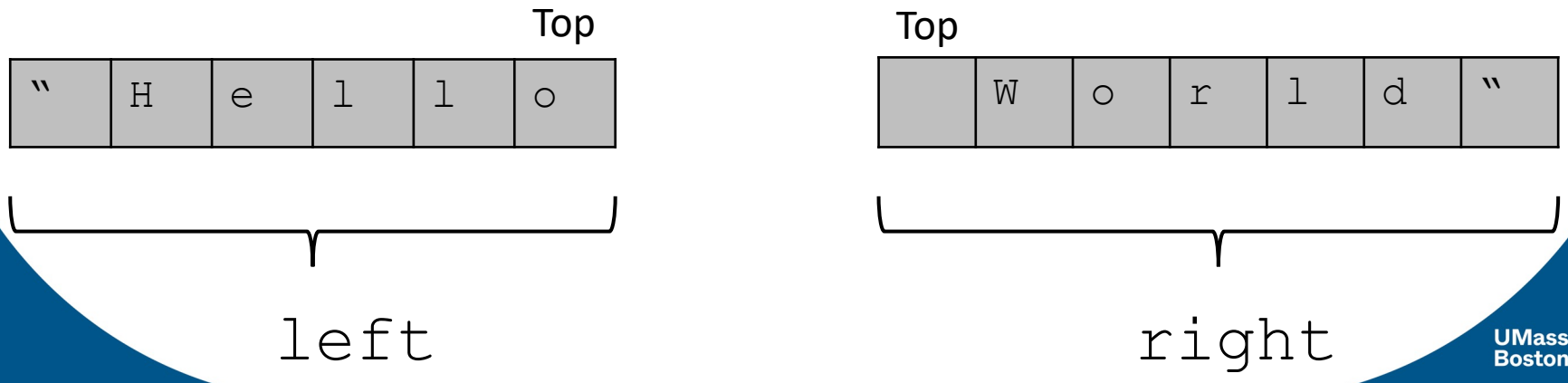


Buffer

- Difference between pop and peek?
- Note that LinkedStacks are Iterable
  - For each loop can be used

```
for (Character c : left) {
    StdOut.println(c);
}
```

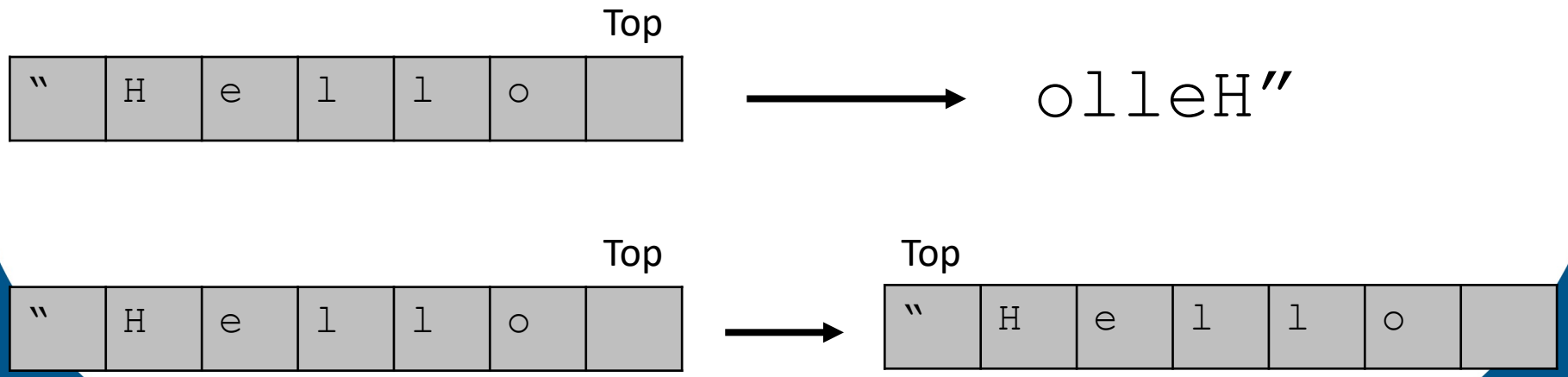
  - Doesn't change the contents of the stack!!

Buffer

- `StringBuilder` is used to build strings
- `sb.append()`
  - Can take `chars`

```
public String toString() {
    // A buffer to store the string representation.
    StringBuilder sb = new StringBuilder();

    // Push chars from left into a temporary stack.
    ....
```



Josephus

- Go through a circle of elements and keep removing the ’mth’ element
- Elements are numbers 1 to n

```
>_ ~/workspace/exercise2

$ java Josephus 7 2
2
4
6
1
5
3
7
```

dsa.Queue<Item> extends java

```
boolean isEmpty()
int size()
void enqueue(Item item)
Item peek()
Item dequeue()
Iterator<Item> iterator()
```

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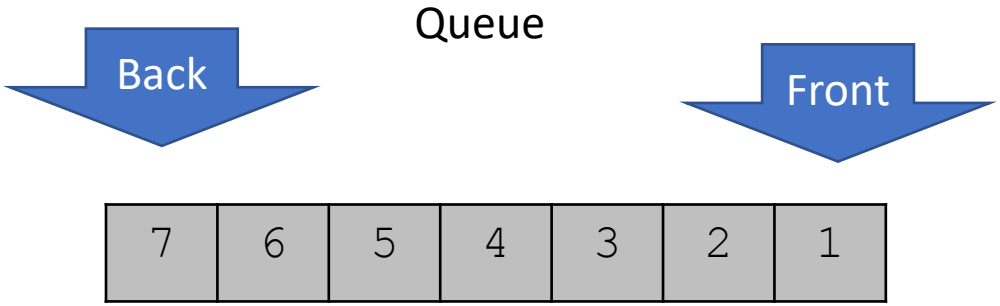
Josephus

```
>_ ~/workspace/exercise2
$ java Josephus 7 2
2
4
6
1
5
3
7
```



1

7 2

6 3

5 4

Josephus

```
>_ ~/workspace/exercise2
$ java Josephus 7 2
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1
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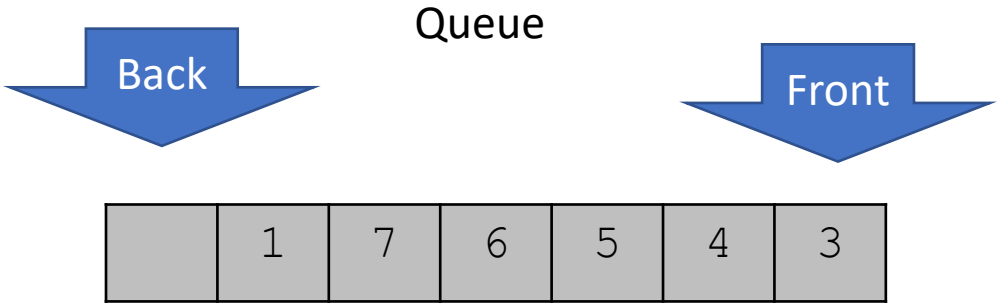
```



1

7

6 3

5 4

2

Josephus

```
>_ ~/workspace/exercise2
$ java Josephus 7 2
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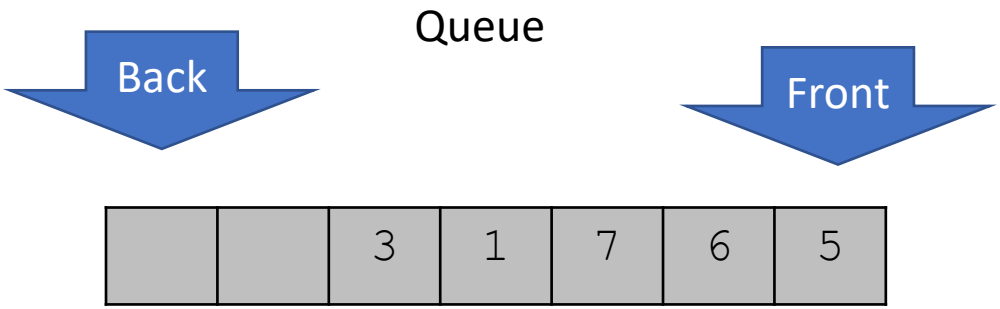

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Josephus

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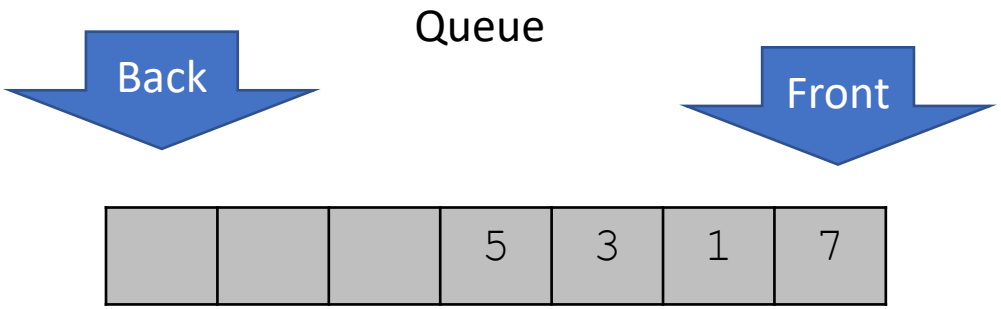

1

7

3

5

2 4 6

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Josephus

```
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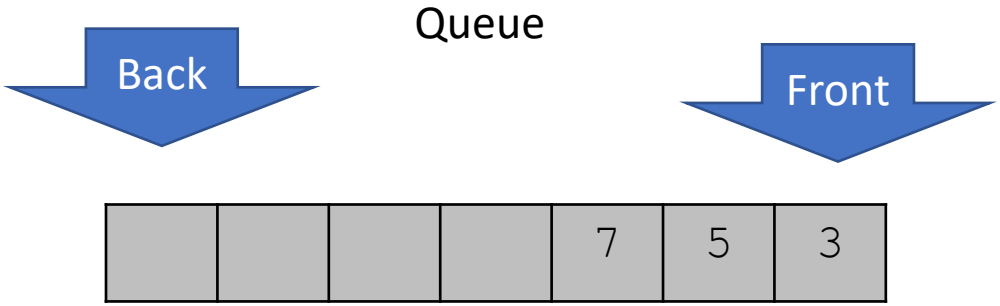
7
```



7

3

5

2 4 6 1

Josephus

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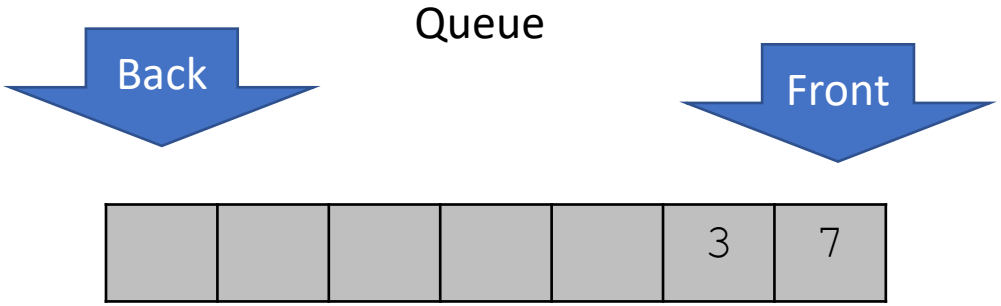

7

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Josephus

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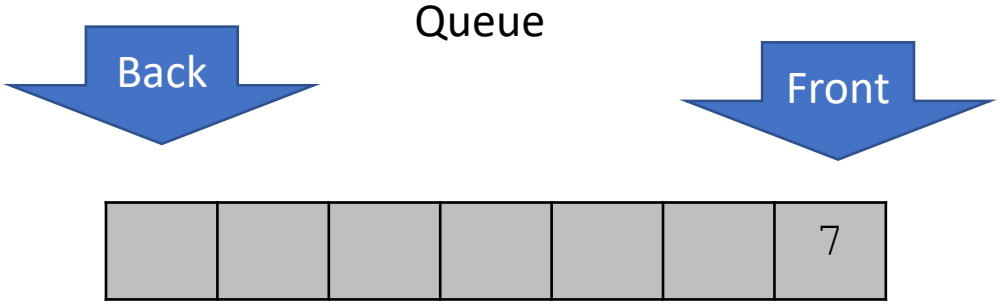

7

2 4 6 1 5 3

Josephus

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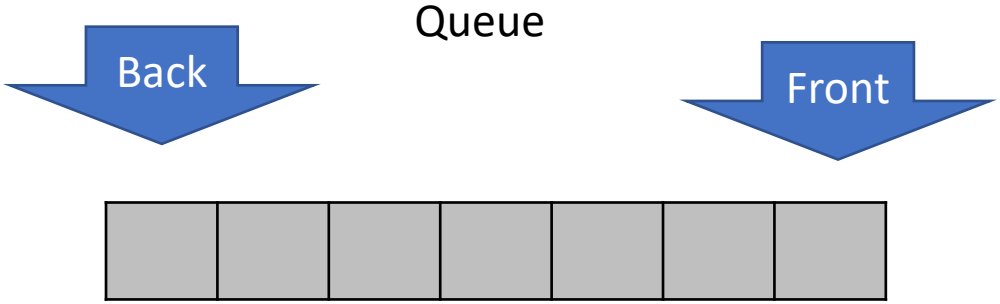

2 4 6 1 5 3 7

Questions?

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