

# Lecture 3.19

3.8 Limitation of Single Queue, 3.9 Concepts of Circular Queue

# Agenda

- 1. Introduction
- 2. Core Concepts
- 3. Implementation Details
- 4. Advanced Examples

## Concept Detail 3

- Detailed explanation for part 3.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_3(data):  
    # Implementation specific to current context  
    return data
```

## Concept Detail 4

- Detailed explanation for part 4.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_4(data):  
    # Implementation specific to current context  
    return data
```

## Concept Detail 5

- Detailed explanation for part 5.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_5(data):  
    # Implementation specific to current context  
    return data
```

## Concept Detail 6

- Detailed explanation for part 6.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_6(data):  
    # Implementation specific to current context  
    return data
```

# Concept Detail 7

- Detailed explanation for part 7.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_7(data):  
    # Implementation specific to current context  
    return data
```

# Concept Detail 8

- Detailed explanation for part 8.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_8(data):  
    # Implementation specific to current context  
    return data
```

# Concept Detail 9

- Detailed explanation for part 9.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_9(data):  
    # Implementation specific to current context  
    return data
```

# Concept Detail 10

- Detailed explanation for part 10.
- Key property to consider:
  - - Memory complexity is  $O(N)$
  - - Time complexity is  $O(1)$  for ideal operations

```
def demo_func_10(data):  
    # Implementation specific to current context  
    return data
```

# Summary

- Recap of main points:
- - Theoretical foundations
- - Code implementations
- - Complexity analysis

# Next Lecture Preview

- In the next session, we will build on this knowledge.
- Please review the implementation before next class.