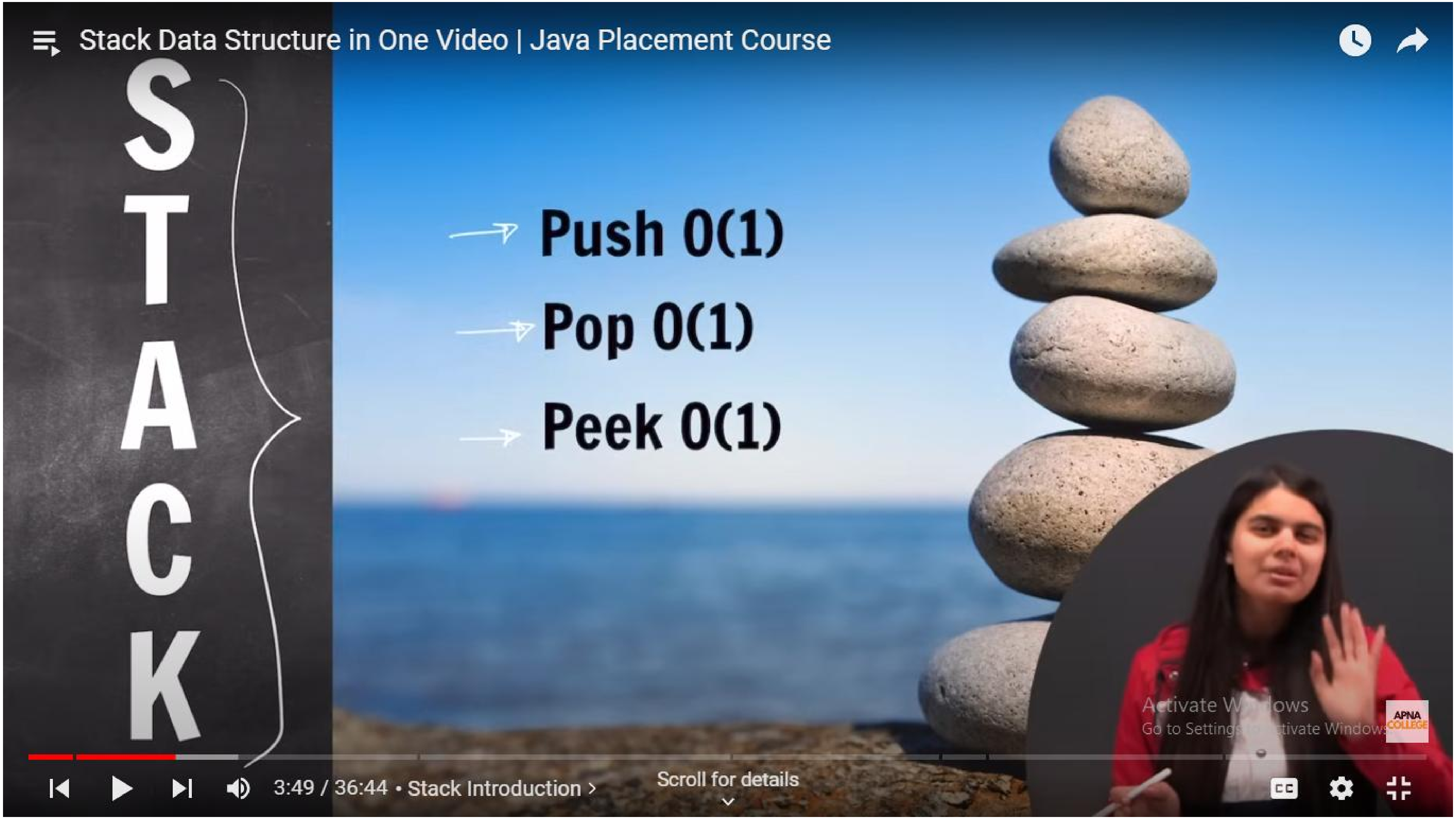

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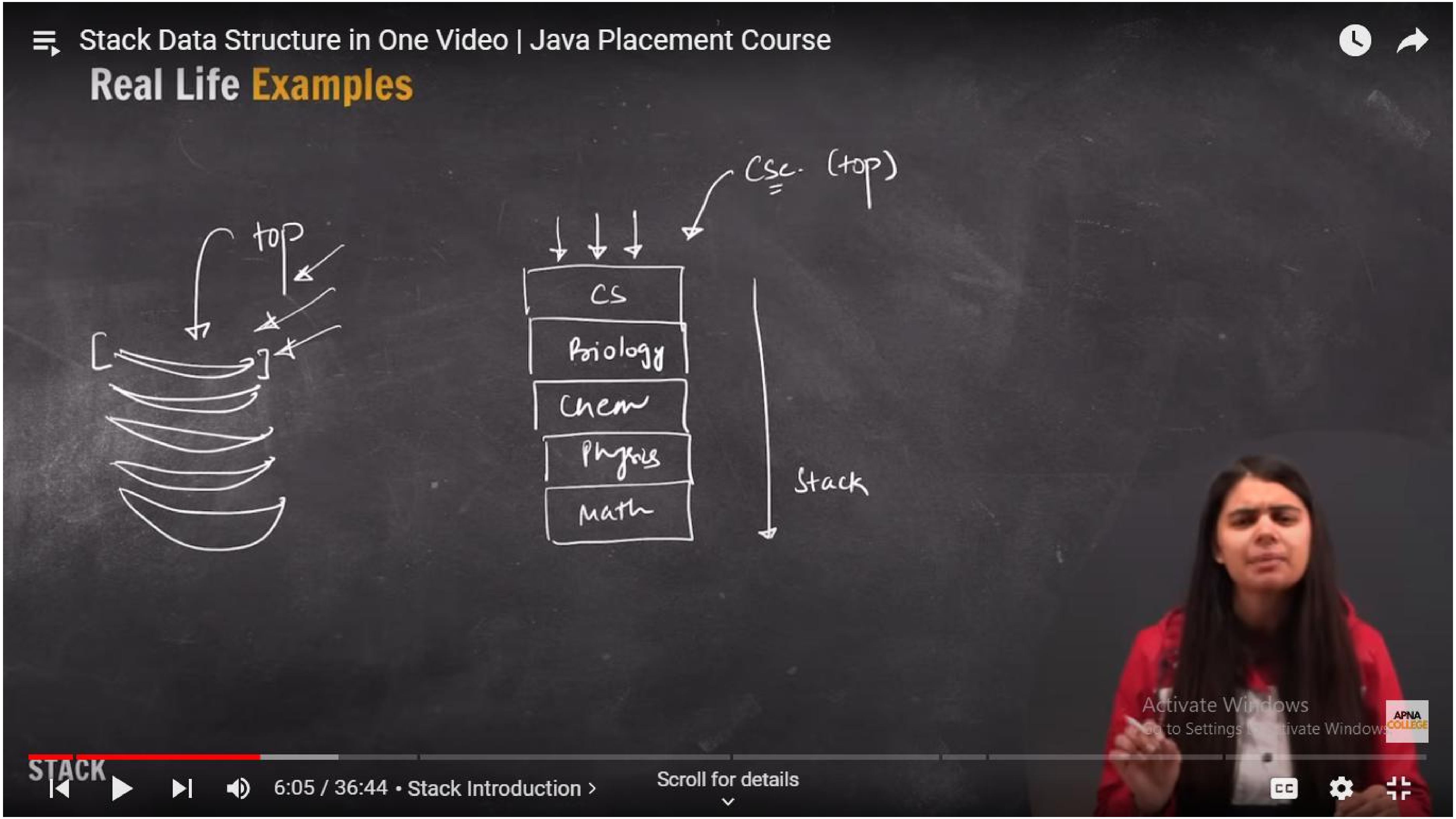
STACK

→ Push 0(1)

→ Pop 0(1)

→ Peek 0(1)



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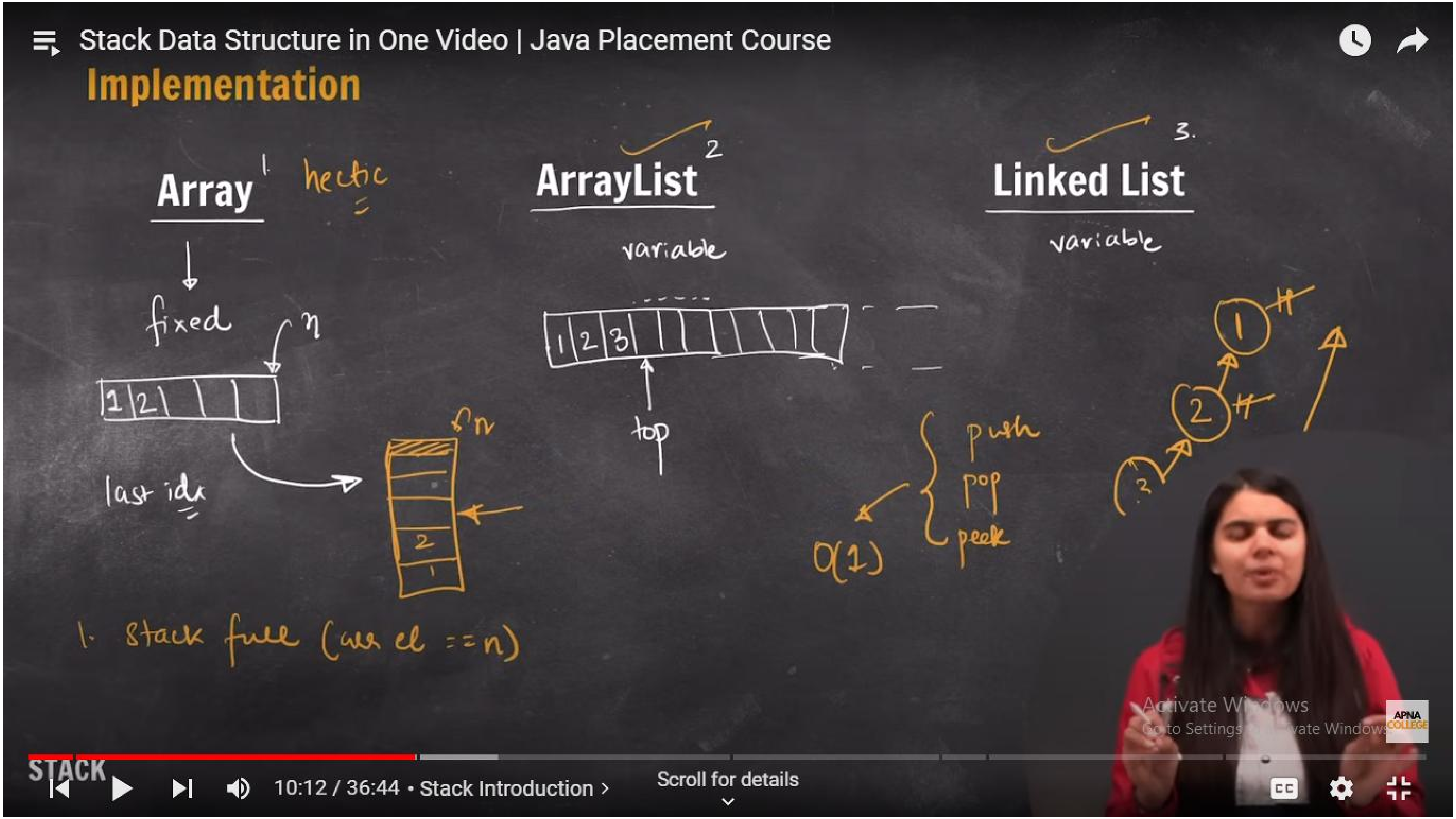
Real Life Examples



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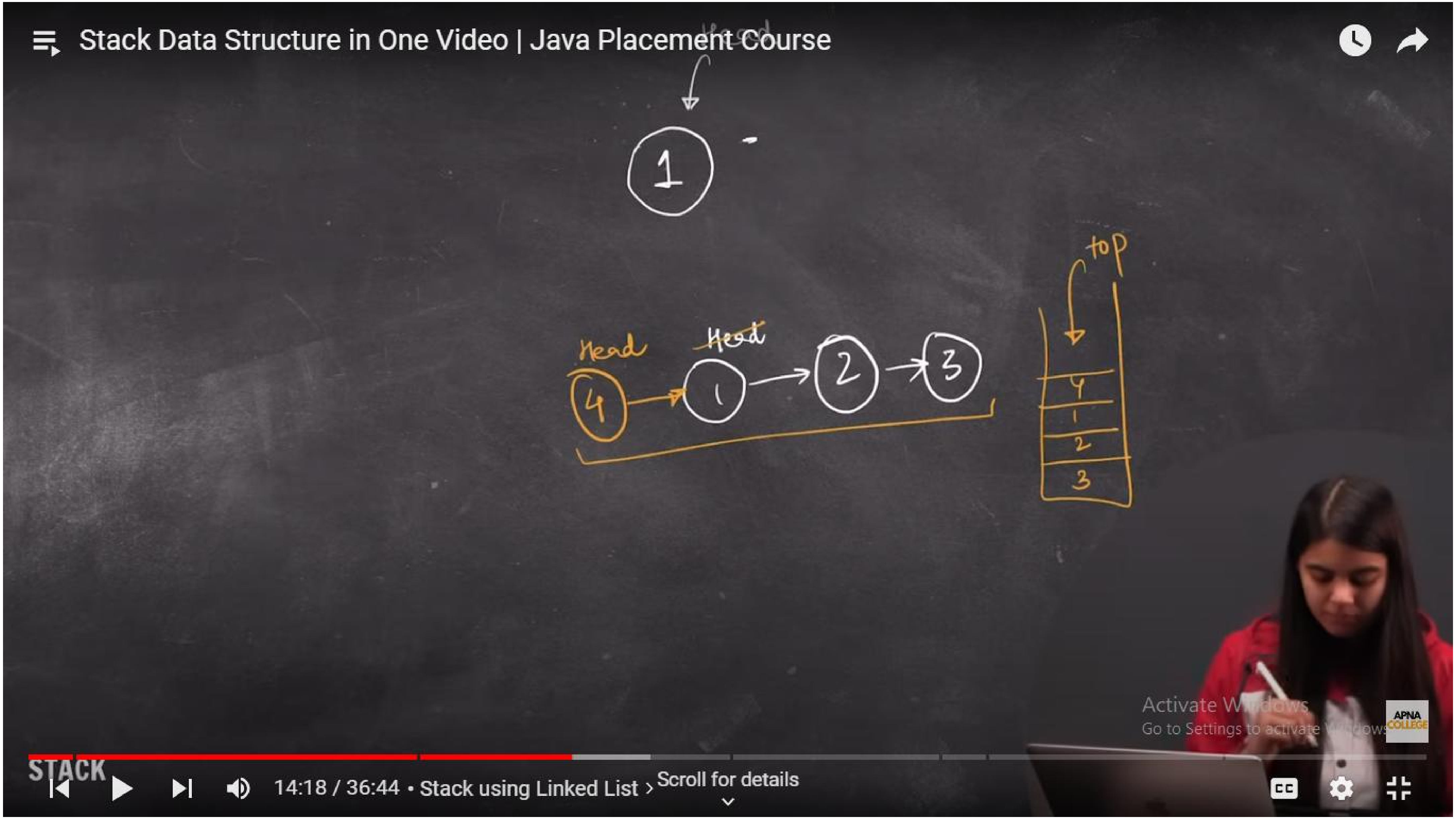
Implementation



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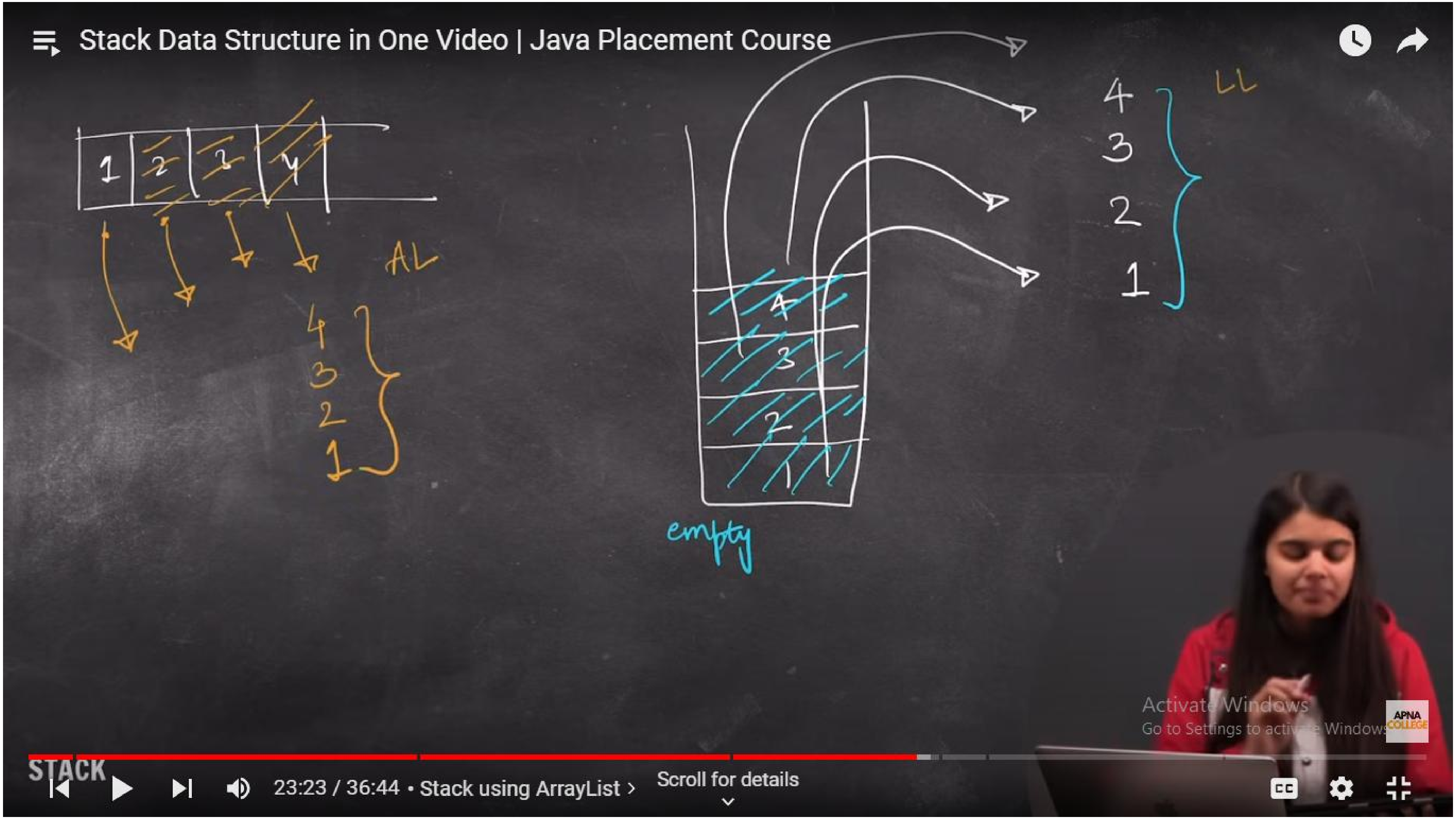
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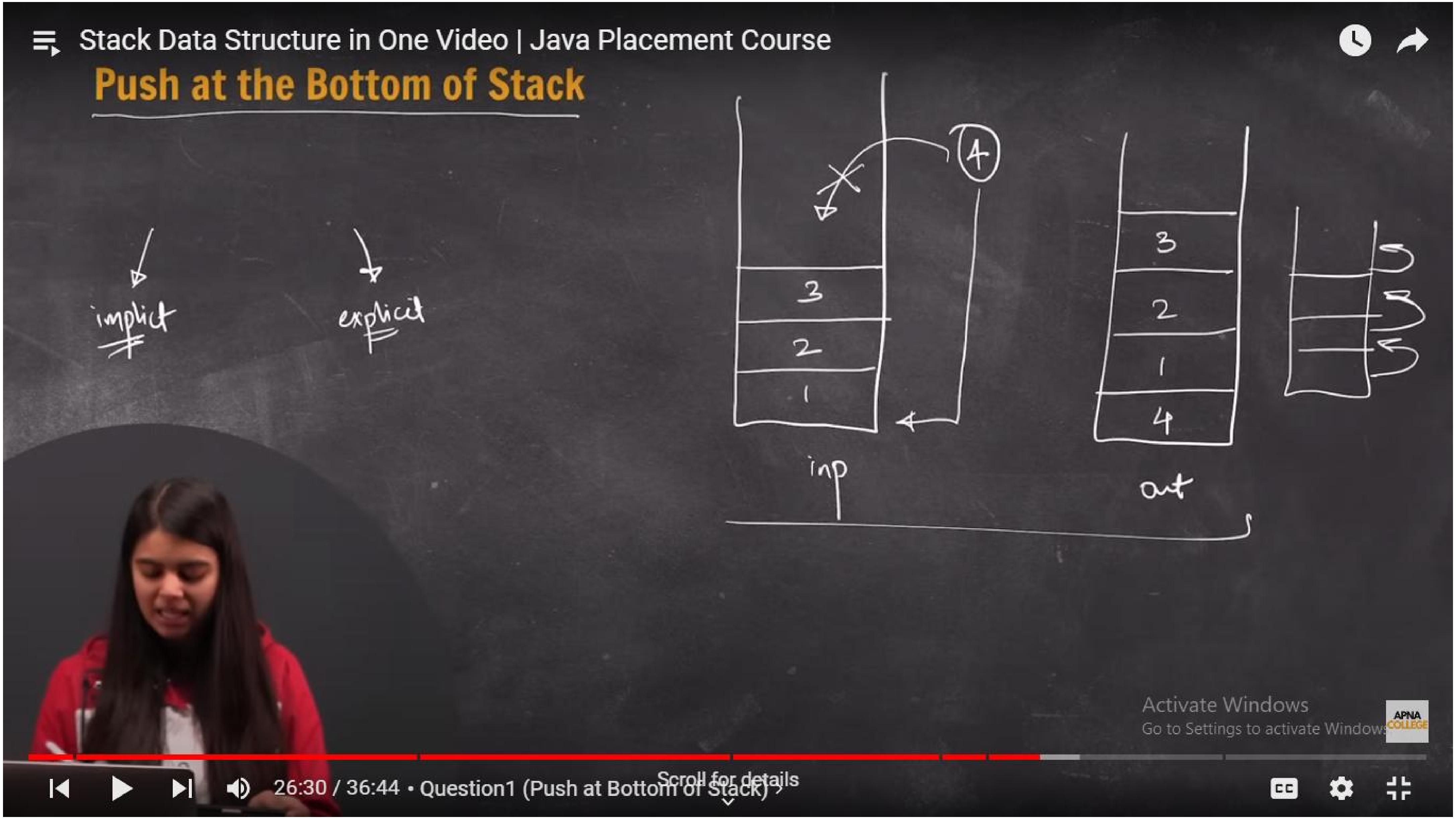

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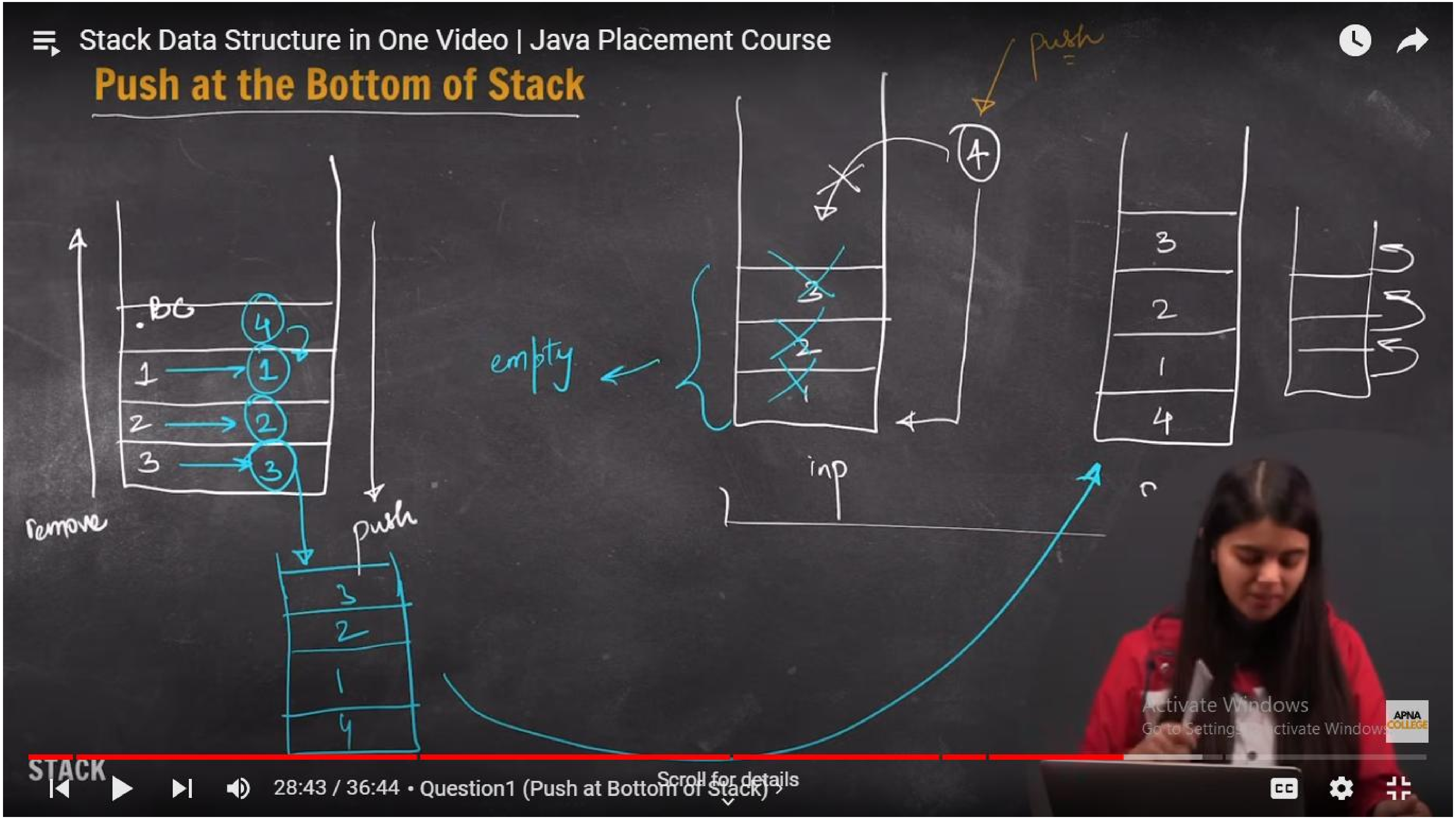
Push at the Bottom of Stack

26:30 / 36:44 • Question1 (Push at Bottom of Stack) >

Scroll for details



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Push at the Bottom of Stack

28:43 / 36:44 • Question1 (Push at Bottom of Stack) >

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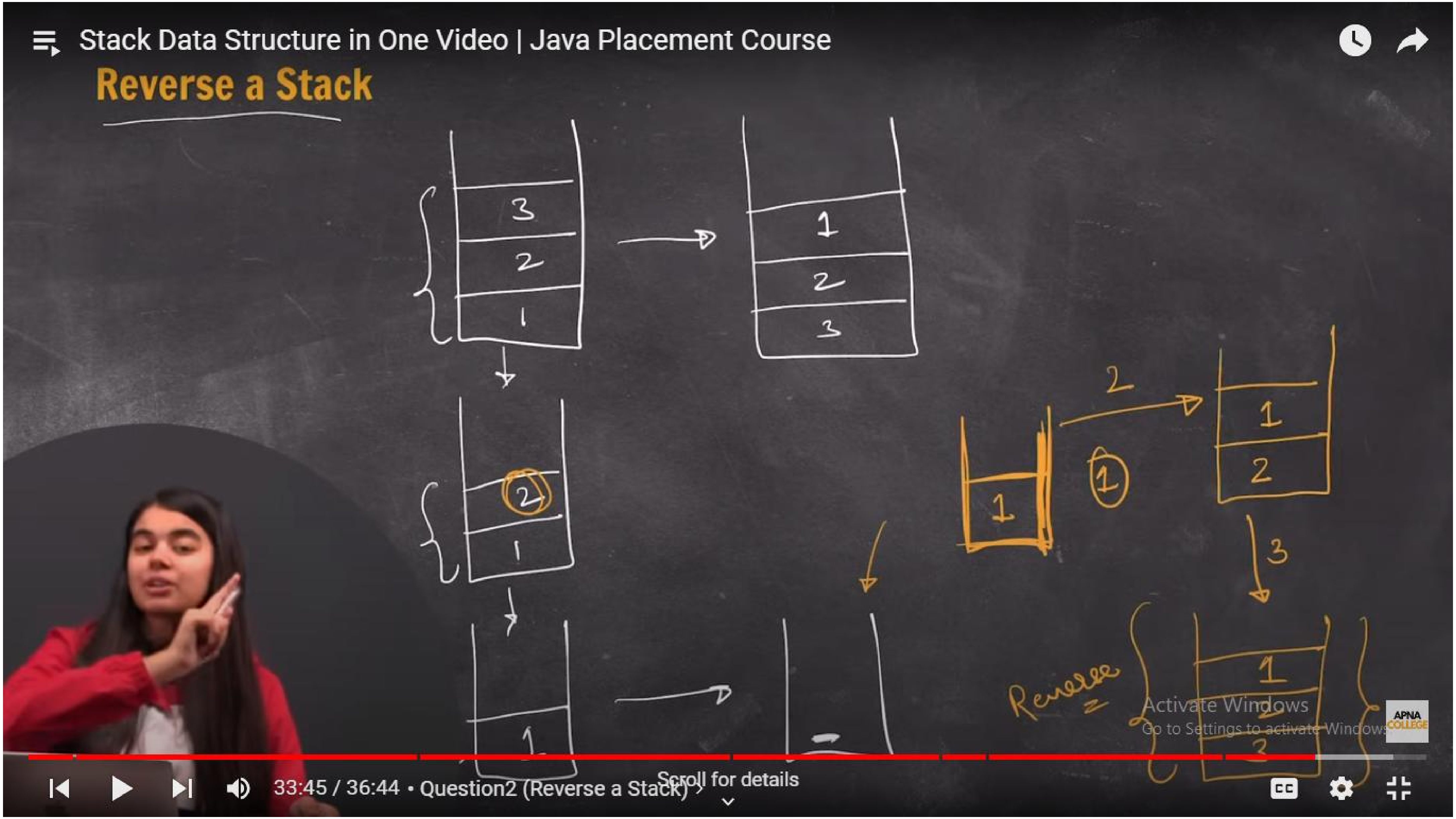

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Reverse a Stack

33:45 / 36:44 • Question2 (Reverse a Stack) >

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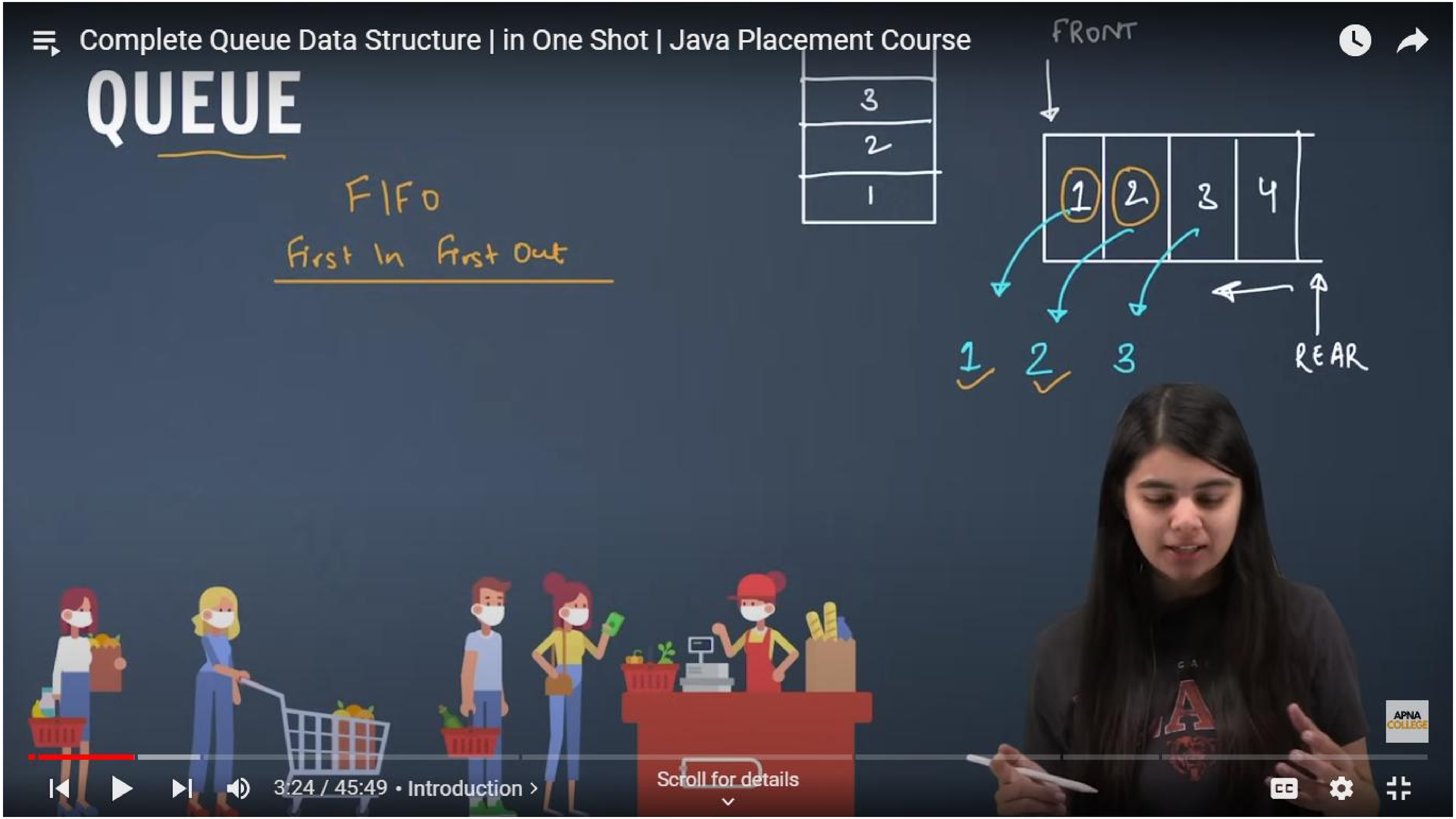

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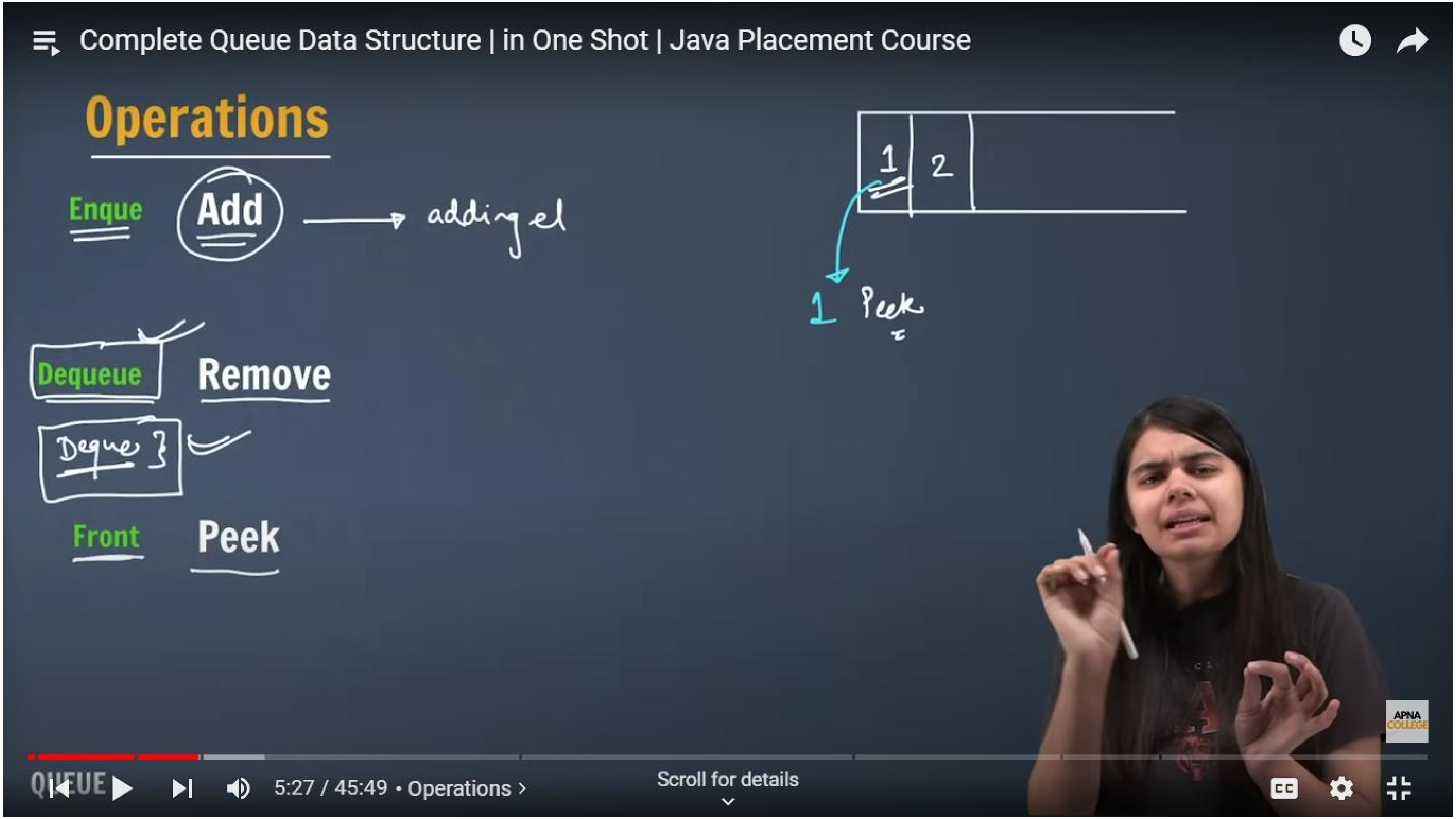
QUEUE

FIFO

First In First Out



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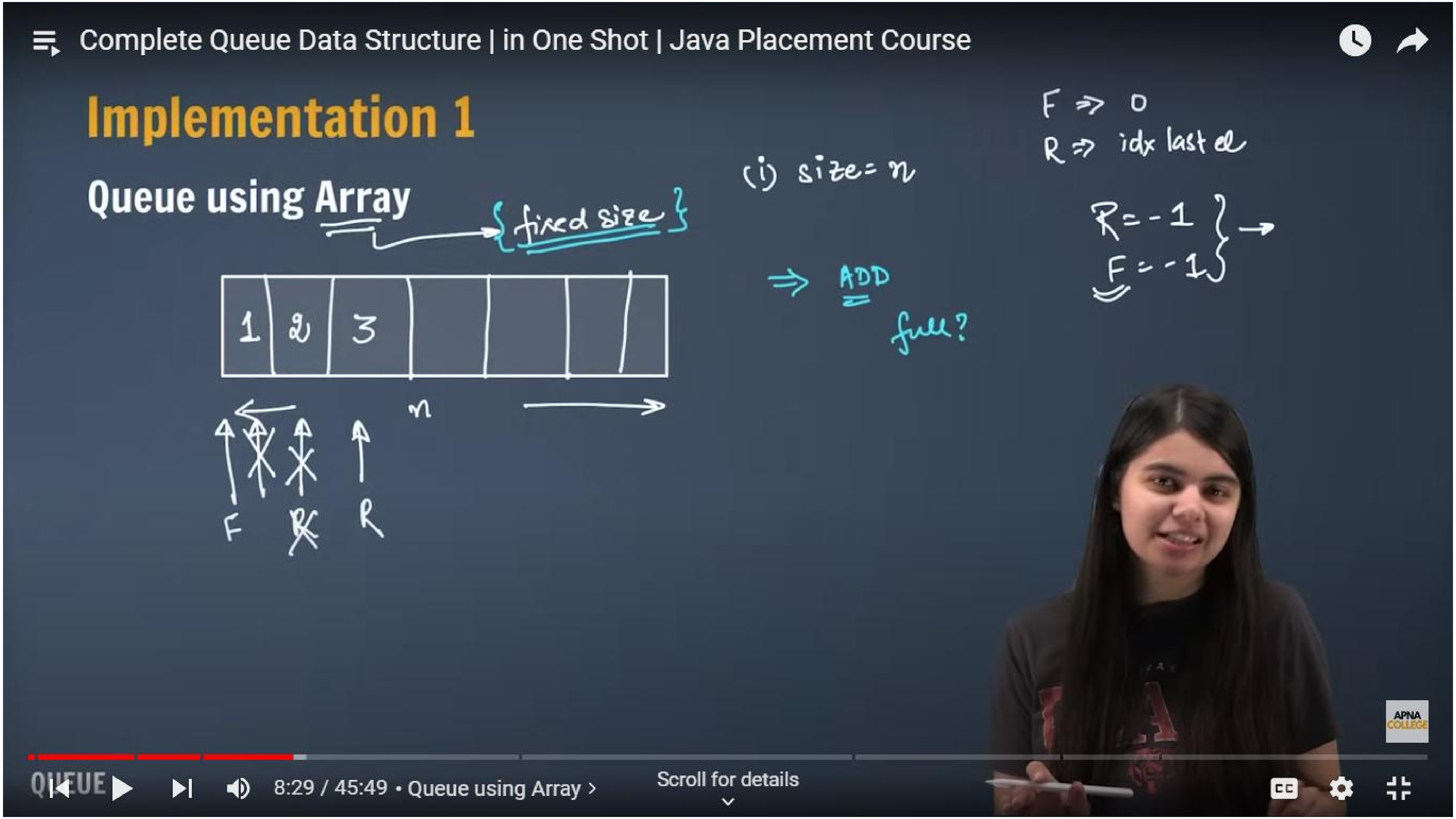
Operations

Enque Add → adding el

Dequeue Remove

Deque {

Front Peek



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Implementation 1

Queue using Array

{fixed size}

(i) size = n

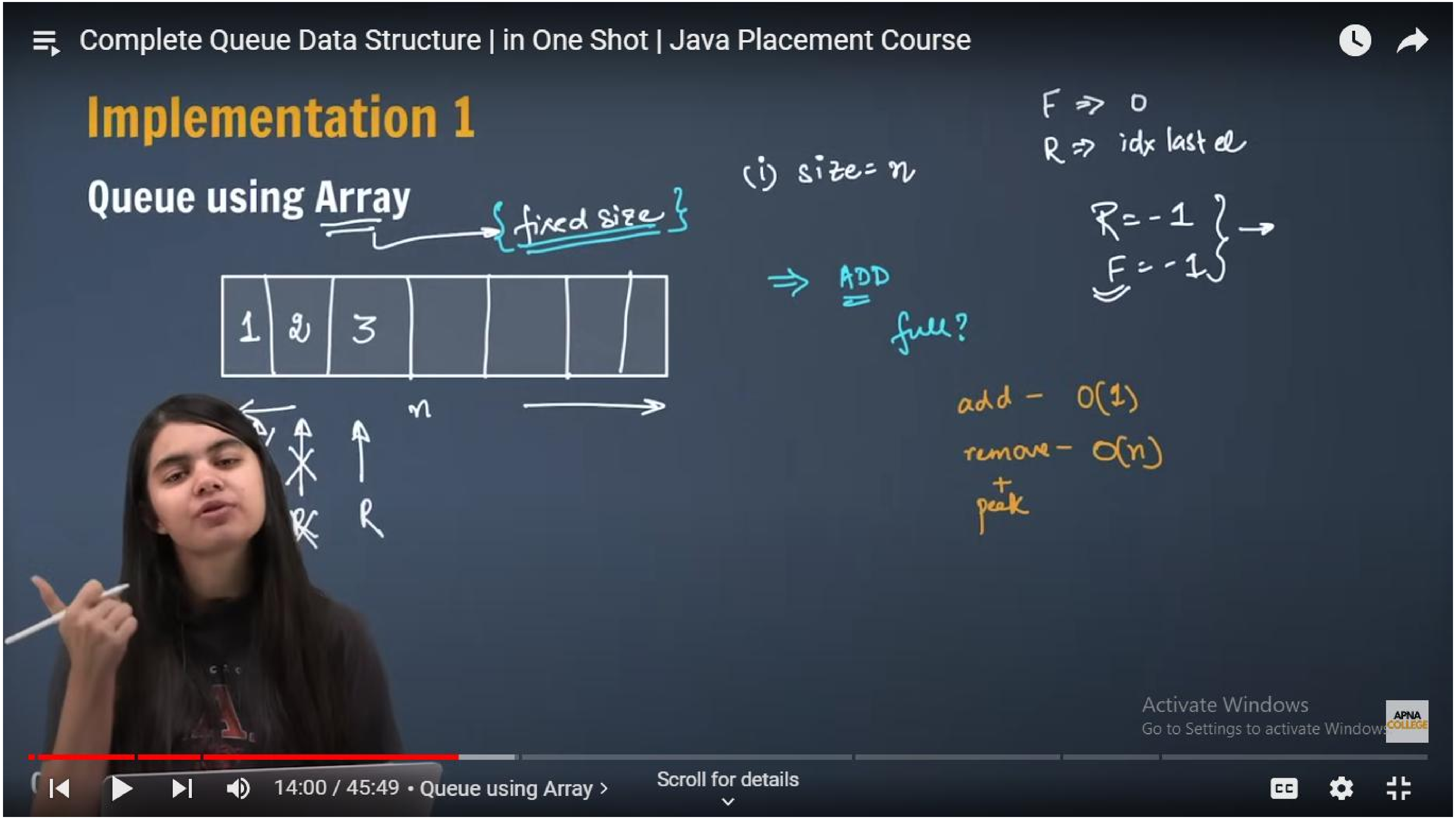
⇒ ADD

full?

F ⇒ 0

R ⇒ idx last el

R = -1
F = -1



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Implementation 1

Queue using Array {fixed size}

(i) size = n

⇒ ADD

full?

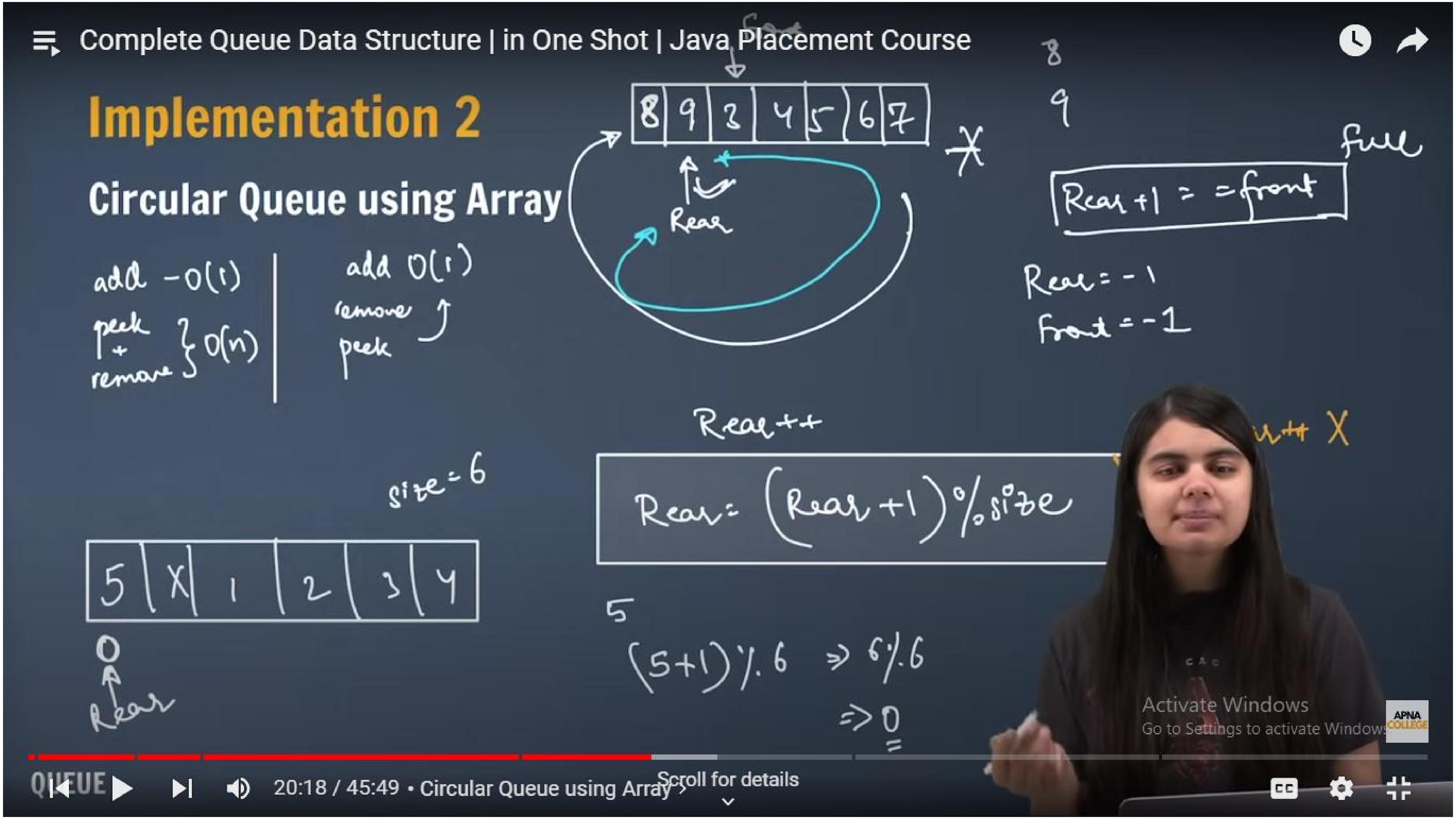
F ⇒ 0

R ⇒ idx last el

R = -1 } →
F = -1 }

add - O(1)

remove - O(n)
+
peak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QUEUE
20:18 / 45:49 • Circular Queue using Array ›
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Implementation 2

Circular Queue using Array

add - $O(1)$

peek + remove } $O(n)$

add $O(1)$

remove

peek

Front

8	9	3	4	5	6	7

X

Rear

8

9

full

$\boxed{Rear+1 == front}$

Rear = -1

Front = -1

Rear++

r++ X

$\boxed{Rear = (Rear+1) \% size}$

size = 6

5	X	1	2	3	4

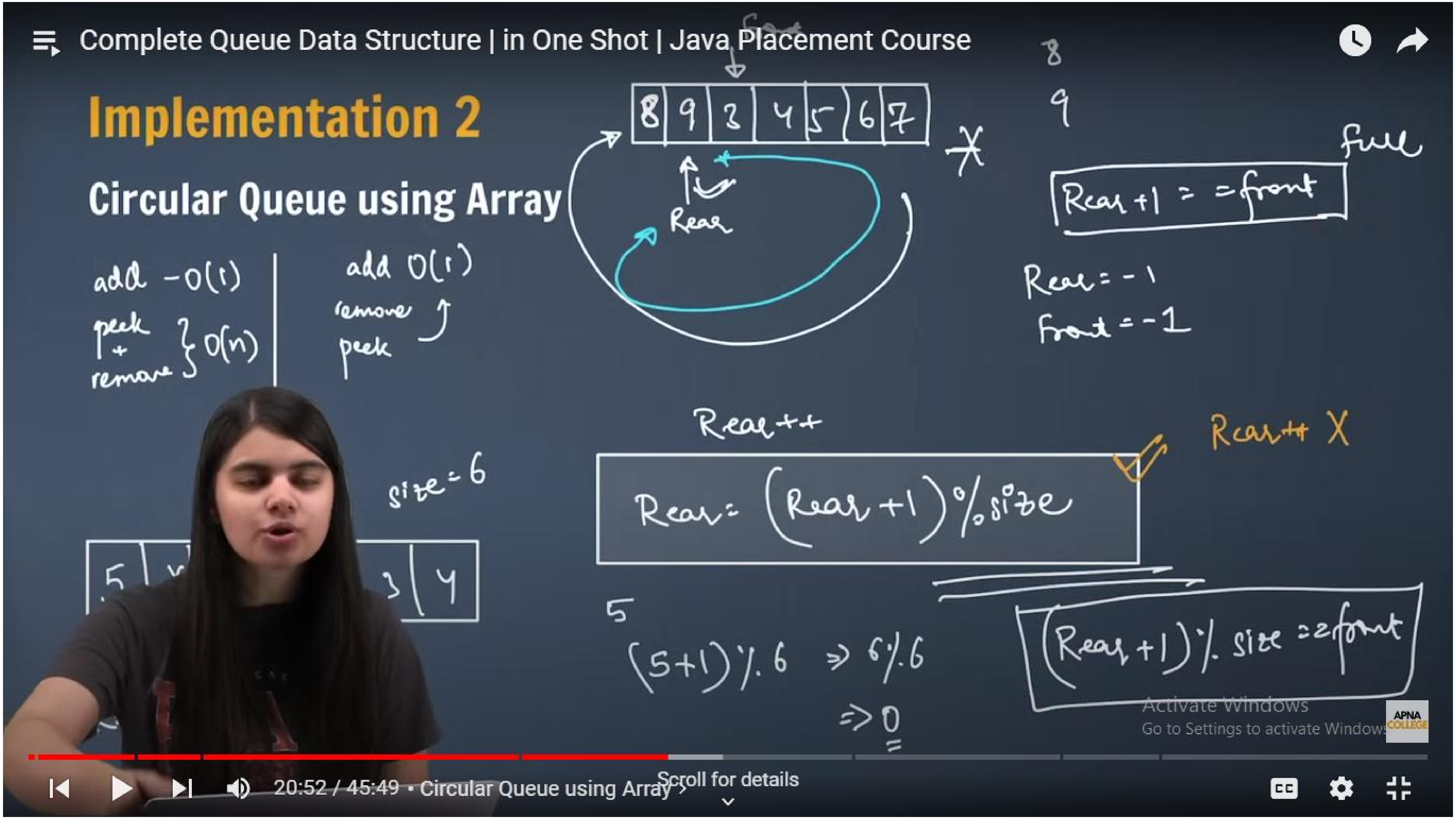
0

Rear

5

$(5+1)\%6 \Rightarrow 6\%6$

$\Rightarrow 0$



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Implementation 2

Circular Queue using Array

add - O(1)
peek + remove } O(n)

add O(1)
remove
peek

8	9	3	4	5	6	7

front

Rear

8
9

full

$\boxed{Rear+1 == front}$

Rear = -1
Front = -1

size = 6

5	4		3	4

Rear++

$\boxed{Rear = (Rear+1)\%size}$

Rear++ X

5

$(5+1)\%6 \Rightarrow 6\%6$
$\Rightarrow 0$

$\boxed{(Rear+1)\%size == front}$

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20:52 / 45:49 • Circular Queue using Array >

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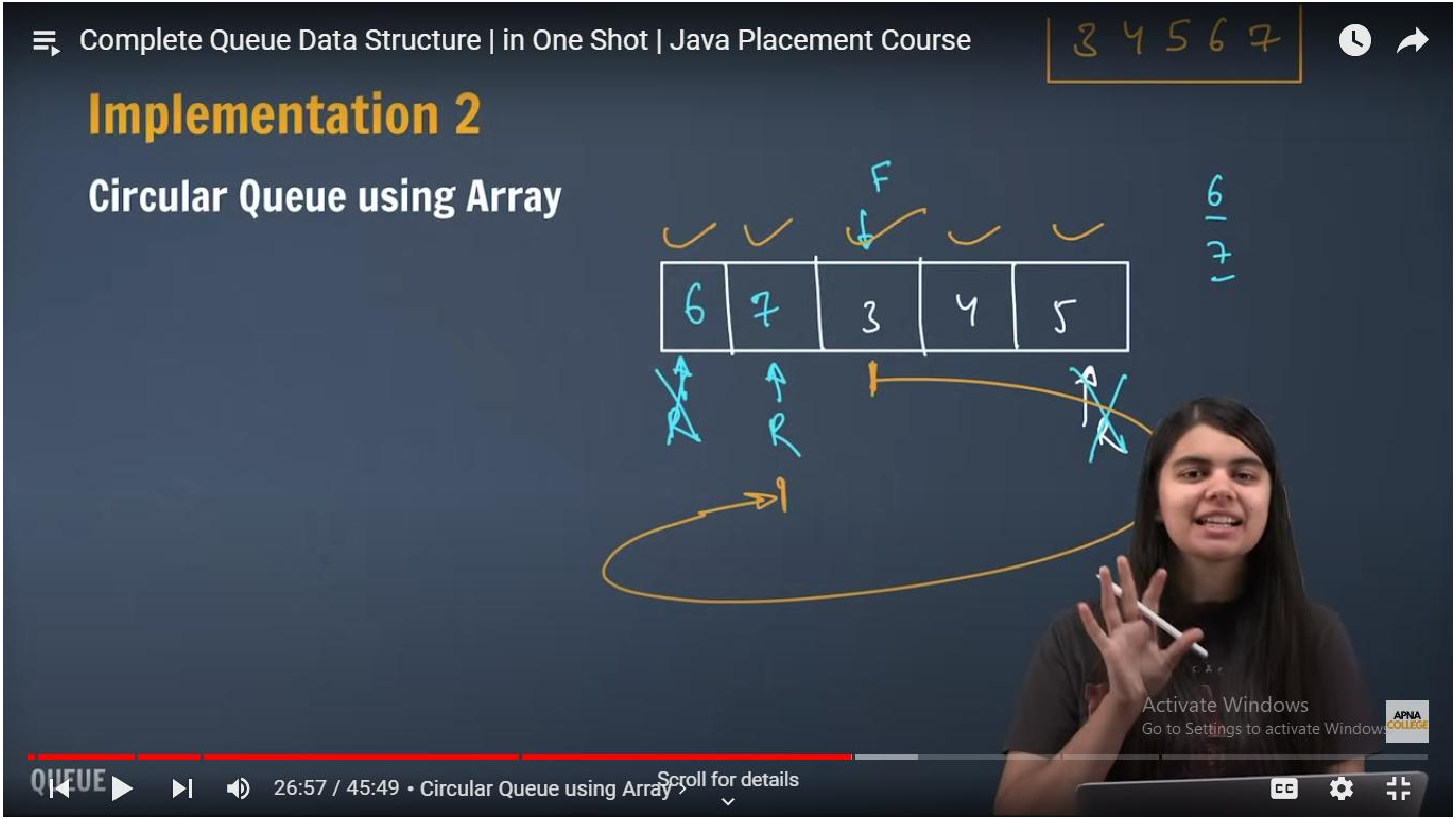

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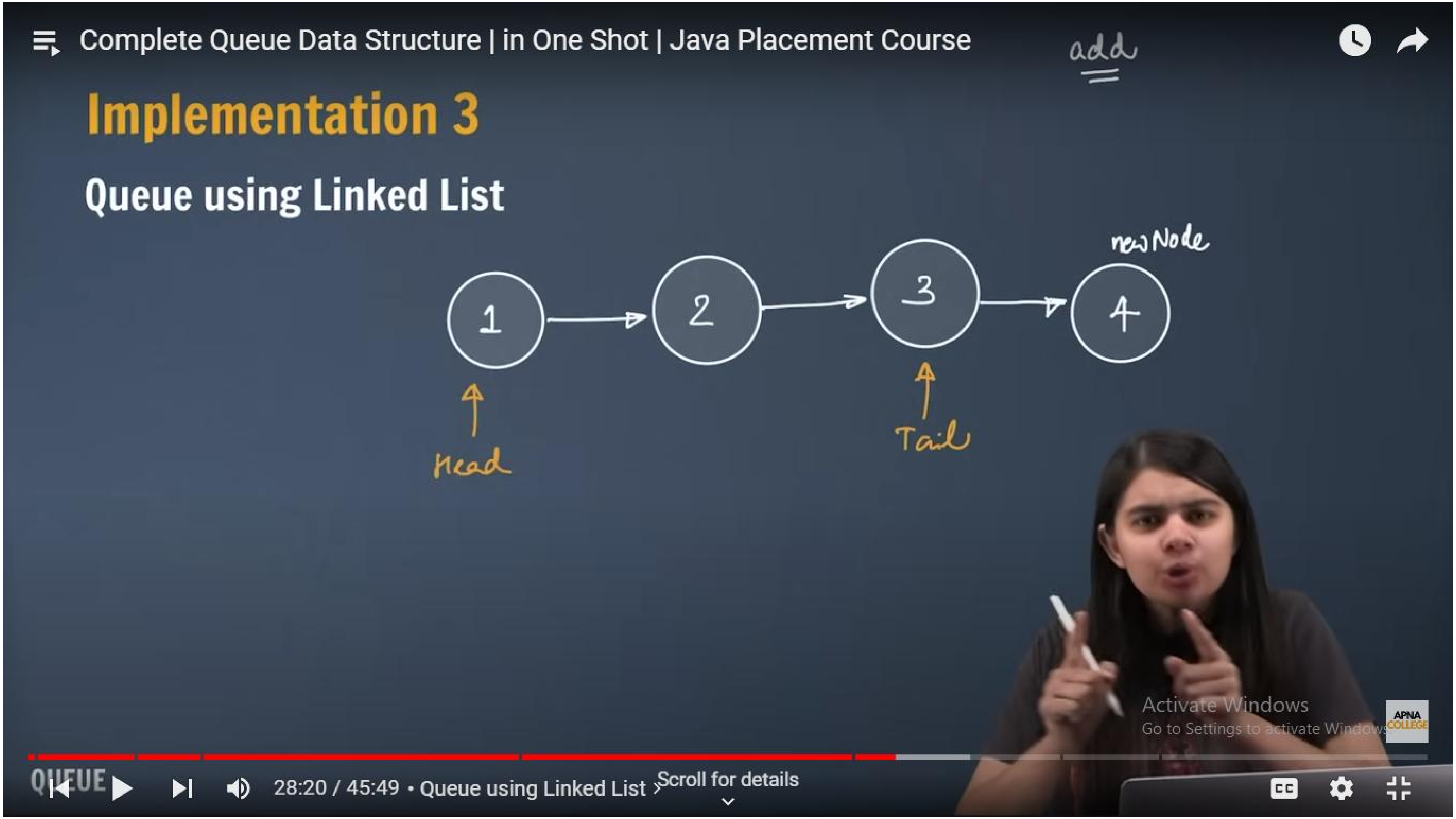
Implementation 2

Circular Queue using Array



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add

Implementation 3

Queue using Linked List

1
2
3
4
newNode
Head
Tail
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Go to Settings to activate Windows.
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QUEUE
28:20 / 45:49 • Queue using Linked List ›
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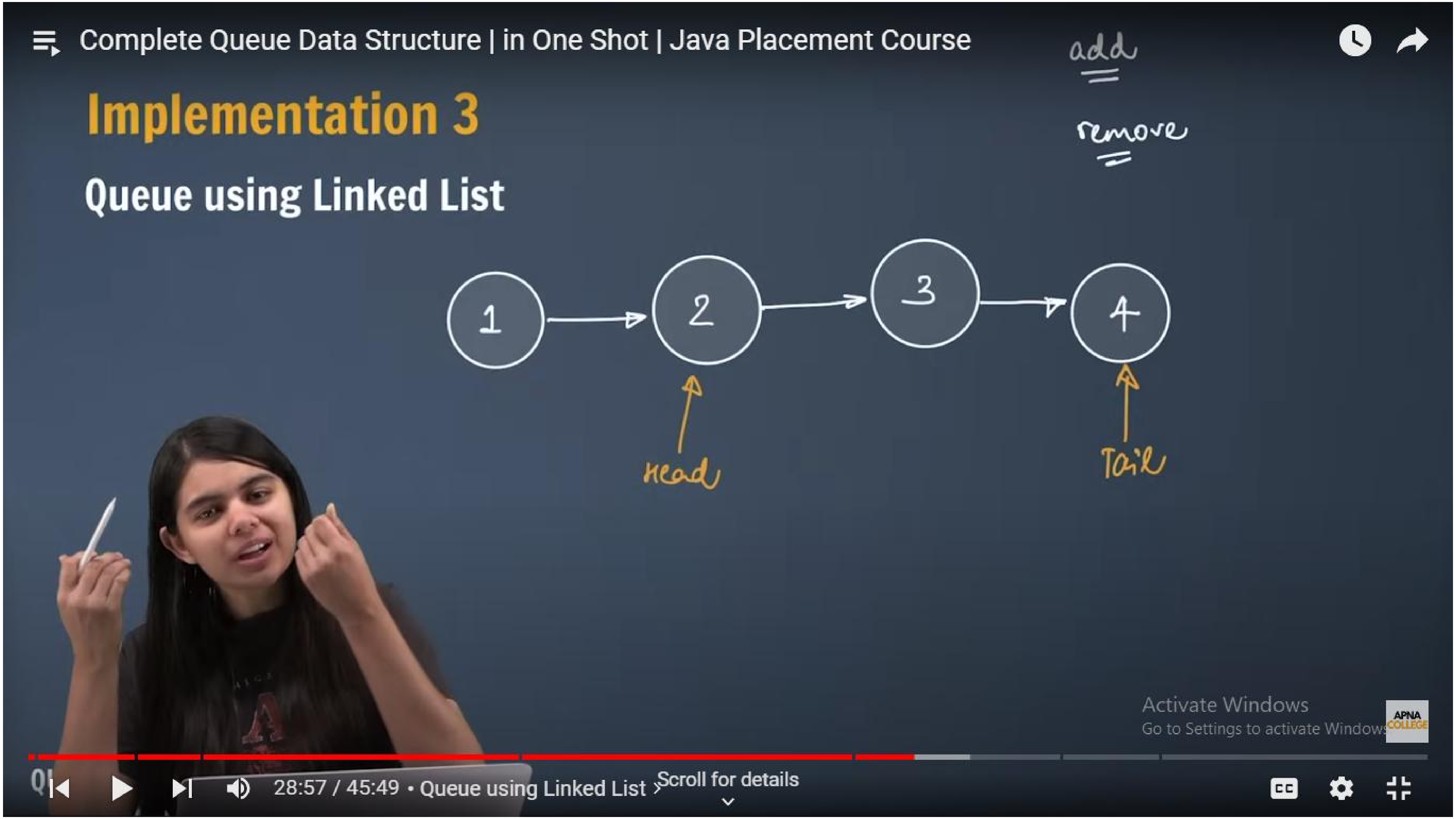

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Implementation 3

Queue using Linked List

28:57 / 45:49 • Queue using Linked List ›

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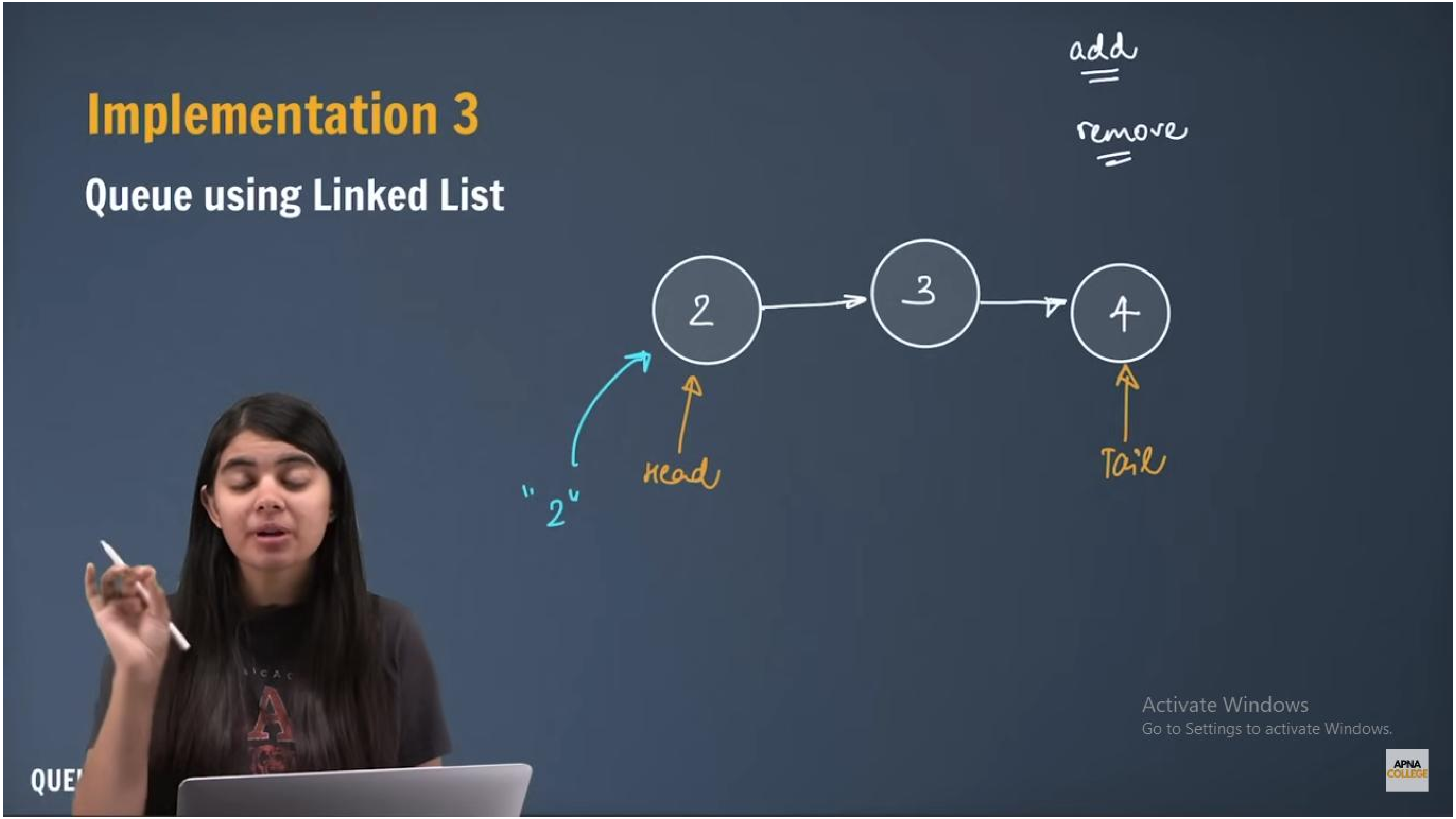
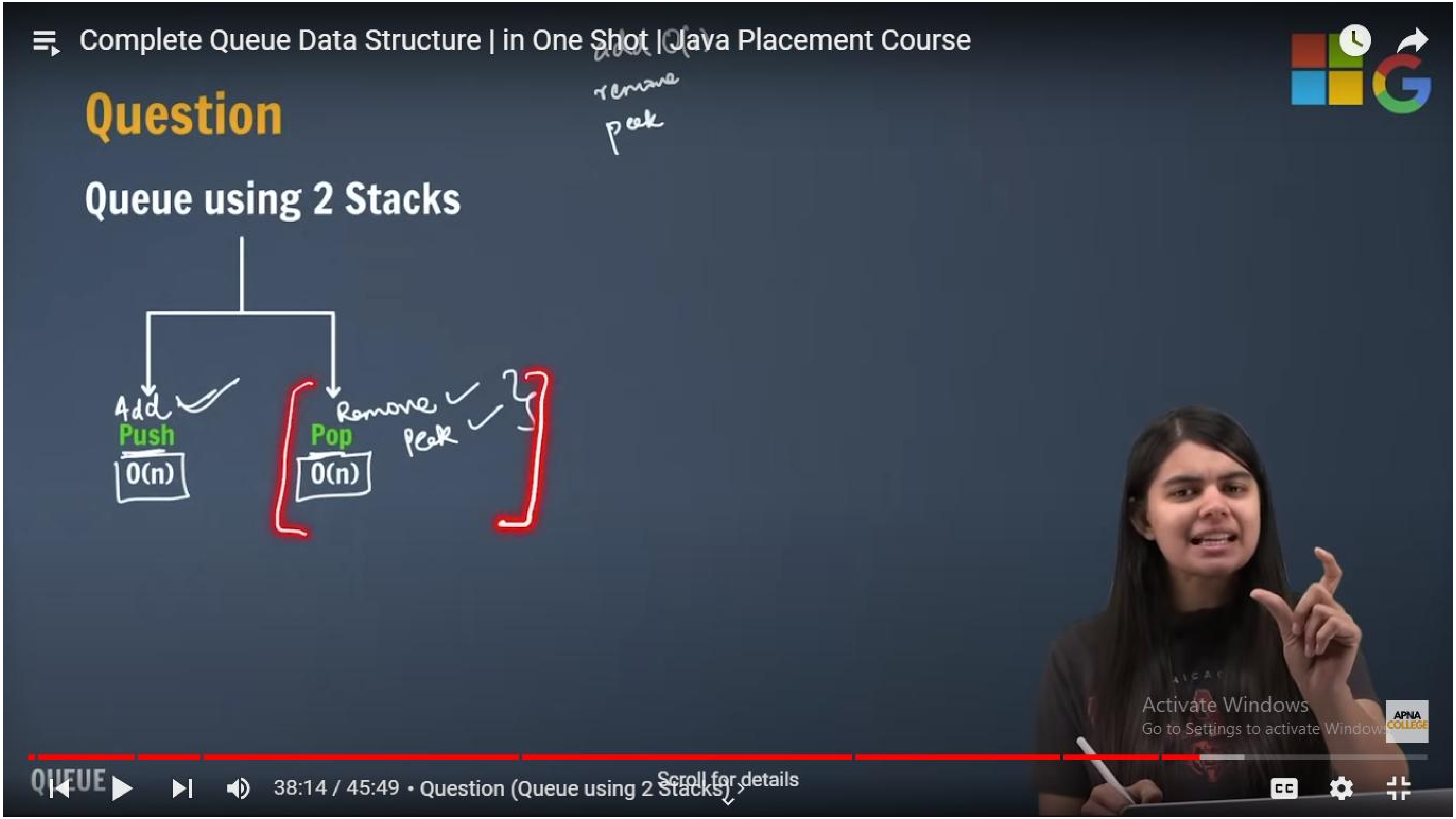


Implementation 3

Queue using Linked List



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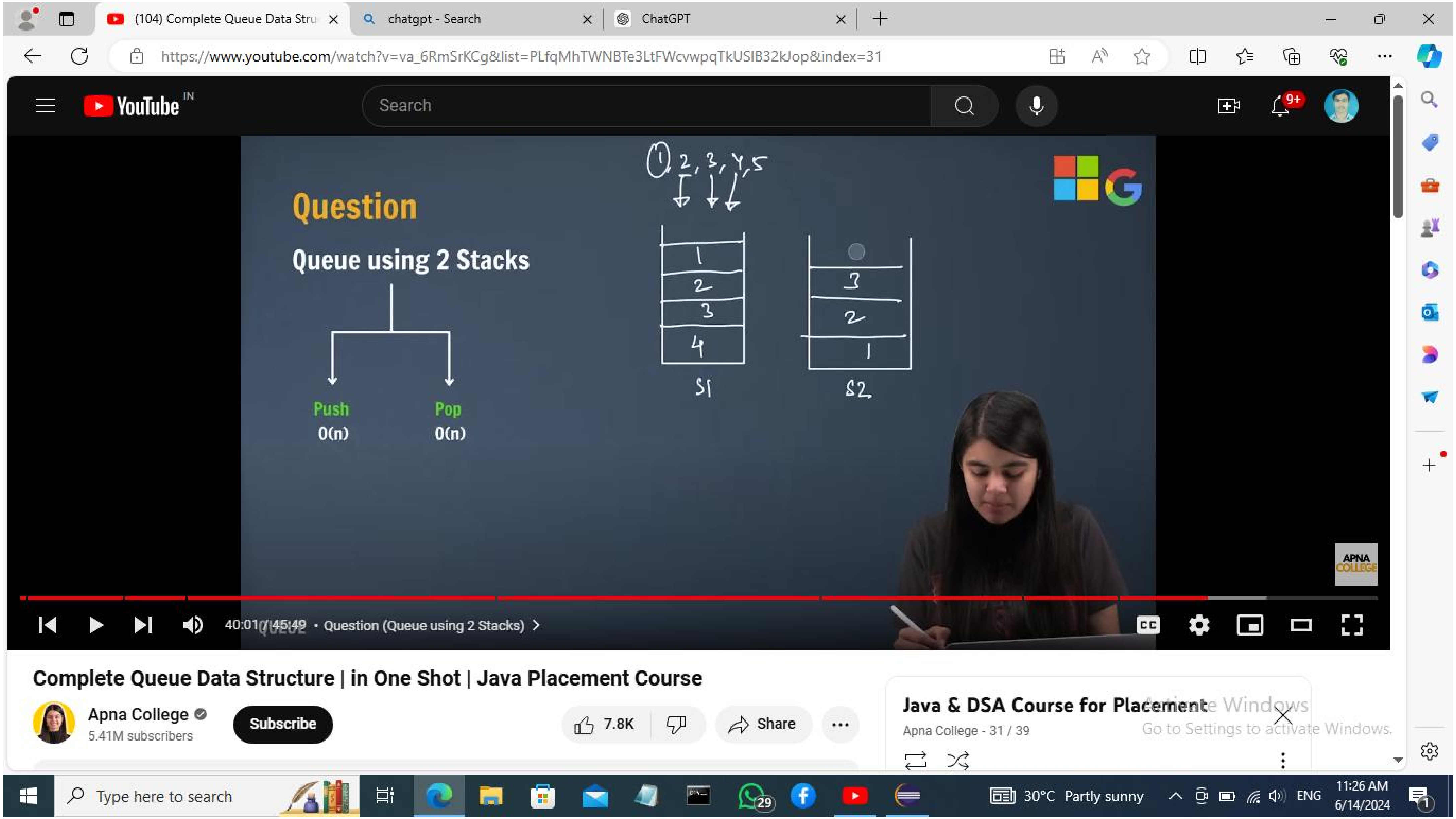
Question

Queue using 2 Stacks



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Question

Queue using 2 Stacks

Push
O(n)

Pop
O(n)

1, 2, 3, 4, 5

S1
1
2
3
4

S2
3
2
1

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40:01 / 45:49 • Question (Queue using 2 Stacks)

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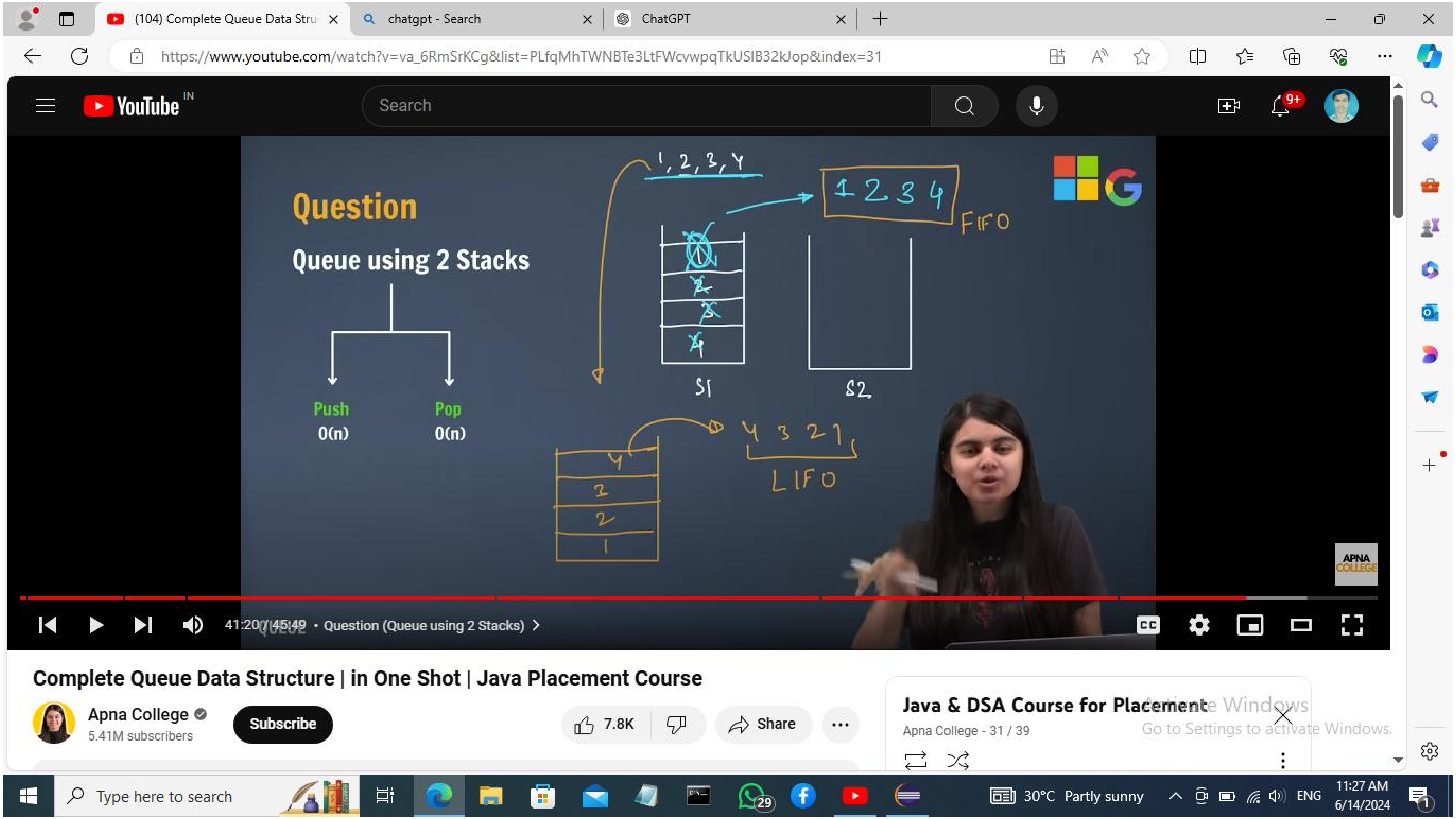

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Question

Queue using 2 Stacks

Push
O(n)

Pop
O(n)

41:20 / 45:49 • Question (Queue using 2 Stacks) >

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