



SEP
SECRETARÍA DE
EDUCACIÓN PÚBLICA



Universidad Tecnológica del Norte de Guanajuato “UTNG”

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Licenciatura en Ingeniería en Tecnologías de la Información e Innovación Digital

Materia:

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Visualgo.net interface showing a Singly Linked List (LL) with 11 nodes. The nodes contain the values: 22, 2, 77, 6, 43, 76, 89. The head pointer is labeled 'head/0' and the tail pointer is labeled 'tail/6'. The interface includes a sidebar with options: Create(A), Peek, Push, Pop. The main area shows the 'User Defined List' with 'A = 22,2,77,6,43,' and 'Go' button. The 'N = 11' field is set, and 'Random' and 'Random Sorted' buttons are available. The bottom status bar shows '1x' and navigation controls.

```
graph TD; head((head/0)) --> n1((22)); n1 --> n2((2)); n2 --> n3((77)); n3 --> n4((6)); n4 --> n5((43)); n5 --> n6((76)); n6 --> n7((89)); n7 --> tail((tail/6));
```

Visualgo.net interface showing a Singly Linked List (LL) with 11 nodes. The nodes contain the values: 22, 2, 77, 6, 43, 76, 89. The head pointer is labeled 'head/0' and the tail pointer is labeled 'tail/6'. The interface includes a sidebar with options: Create(A), Peek, Push, Pop. The main area shows the 'User Defined List' with 'A = 22,2,77,6,43,' and 'Go' button. The 'N = 11' field is set, and 'Random' and 'Random Sorted' buttons are available. The bottom status bar shows '1x' and navigation controls.

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```

Visualgo.net interface showing a Singly Linked List (LL) with the following values: 70, -55, -40, 17, -67, 67. The head pointer is at index 0 and the tail pointer is at index 5. The current operation is "Push 70 at top (head)".

Code snippet:

```
Vertex vtx = new Vertex(v)
vtx.next = head
head = vtx
```

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Visualgo.net interface showing the Singly Linked List after pushing 30 at the top. The list values are: 30, 70, -55, -40, 17, -67, 67. The head pointer is at index 0 and the tail pointer is at index 6. The current operation is "Push 30 at top (head)".

Code snippet:

```
Vertex vtx = new Vertex(v)
vtx.next = head
head = vtx
```

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Visualgo.net interface showing a linked list with nodes: 70, -55, -40, 17, -67, 67. The head pointer is at index 0 and the tail pointer is at index 5. The operation being performed is "Remove i = 0 (Head)".

Remove i = 0 (Head)

```
Delete tmp, which was the (previous) head.

if empty, do nothing
tmp = head
head = head.next
delete tmp
```

Visualgo.net interface showing a linked list with nodes: 70, -55, -40, 17, -67, 67. The head pointer is at index 0 and the tail pointer is at index 5. The operation being performed is "Remove i = 0 (Head)".

Visualgo.net interface showing a linked list with nodes: -55, -40, 17, -67, 67. The head pointer is at index 0 and the tail pointer is at index 4. The operation being performed is "Remove i = 0 (Head)".

Remove i = 0 (Head)

```
Delete tmp, which was the (previous) head.

if empty, do nothing
tmp = head
head = head.next
delete tmp
```

Visualgo.net interface showing a linked list with nodes: -55, -40, 17, -67, 67. The head pointer is at index 0 and the tail pointer is at index 4. The operation being performed is "Remove i = 0 (Head)".

Visualgo.net interface showing a Singly Linked List with 5 nodes. The head pointer points to the first node containing -55. The tail pointer points to the last node containing 67. The nodes contain values: -55, -40, 17, -67, 67.

Peek top (head)

Return the value stored at the head: -55.

```
if empty, return NOT_FOUND
return head.item
```

Visualgo.net interface showing a Singly Linked List with 5 nodes. The head pointer points to the first node containing -55. The tail pointer points to the last node containing 67. The nodes contain values: -55, -40, 17, -67, 67.

Visualgo.net interface showing the "Remove i = 0 (Head)" operation. The Linked List is already empty. No action is performed.

```
if empty, do nothing
tmp = head
head = head.next
delete tmp
```

Visualgo.net interface showing the "Remove i = 0 (Head)" operation. The Linked List is already empty. No action is performed.