OUTPUT

Linked List Stack
Choose an operation:
[1] Push [2] Pop
[3] ShowStack [4] EXIT

Choice: 3
Stack Empty!!

Choice: 1
Element to push: 10

Choice: 1
Element to push: 20

Choice: 1
Element to push: 30

Choice: 1
Element to push: 40

Choice: 3
TOP => 40 | 30 | 20 | 10

Choice: 2
GOT: 40

Choice: 3
TOP => 30 | 20 | 10

Choice: 2
GOT: 30

Choice: 3
TOP => 20 | 10

Q. Implement a stack using linked list.

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ALGORITHM

1. Declare a structure, Node with data, prev.
2. stack = NULL

I. isEmpty()

1. if(stack==NULL)
   return 1
2. return 0

II. push(ele)

1. Create new node, newNode
2. newNode.prev = stack
3. newNode.data = ele
4. stack = newNode

III. Pop()

1. temp = stack
2. stack = stack.prev
3. op = temp.data
4. Delete temp
5. return op.

IV. showStack()

```
p = stack
while(p != NULL):
    DISPLAY p.data
    p = p.prev
```

Choice: 2
GOT: 20

Choice: 3
TOP => 10

Choice: 2
GOT: 10

Choice: 3
Stack Empty!!

Choice: 4

main

1. DISPLAY menu with push, pop, display, exit.
2. if (exit):
   return
   else if (push):
   INPUT element to push, ele
   call push() with ele.
   else if (pop):
   if (isEmpty()):
   DISPLAY "Stack Empty"
   else
   call pop() and DISPLAY result
   else if (display):
   call displaystack().
3. End.

RESULT

Program is executed succesfully and output is obtained.