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**TUGAS ALGORITMA PERTEMUAN 6**

**Implementing a Stack Using a Python List**

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| **Python** | **Gambar** |
| class ArrayStack:  """LIFO Stack implementation using a Python list as underlying storage."""  def \_\_init\_\_(self):  """Create an empty stack."""  self.\_data = [] # nonpublic list instance  def \_\_len\_\_(self):  """Return the number of elements in the stack."""  return len(self.\_data)  def is\_empty(self):  """Return True if the stack is empty."""  return len(self.\_data) == 0  def push(self, e):  """Add element e to the top of the stack."""  self.\_data.append(e) # new item stored at end of list  def top(self):  """Return (but do not remove) the element at the top of the stack.  Raise Empty exception if the stack is empty.  """  if self.is\_empty():  raise Empty('Stack is empty')  return self.\_data[-1] # the last item in the list  def pop(self):  """Remove and return the element from the top of the stack (i.e., LIFO).  Raise Empty exception if the stack is empty.  """  if self.is\_empty():  raise Empty('Stack is empty')  return self.\_data.pop() # remove last item from list  if \_\_name\_\_ == '\_\_main\_\_':  S = ArrayStack() # contents: [ ]  S.push(5) # contents: [5]  S.push(3) # contents: [5, 3]  print(len(S)) # contents: [5, 3]; outputs 2  print(S.pop()) # contents: [5]; outputs 3  print(S.is\_empty()) # contents: [5]; outputs False  print(S.pop()) # contents: [ ]; outputs 5  print(S.is\_empty()) # contents: [ ]; outputs True  S.push(7) # contents: [7]  S.push(9) # contents: [7, 9]  print(S.top()) # contents: [7, 9]; outputs 9  S.push(4) # contents: [7, 9, 4]  print(len(S)) # contents: [7, 9, 4]; outputs 3  print(S.pop()) # contents: [7, 9]; outputs 4  S.push(6) # contents: [7, 9, 6]  S.push(8) # contents: [7, 9, 6, 8]  print(S.pop()) # contents: [7, 9, 6]; outputs 8 |  |