**DATA STRUCTURE LAB**

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**LAB REPORT: 02**

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| **Assignment Number** | 02 |
| **ASSIGNMENT** | DATA STRUCTURE |
| **Submitted to:** | SIR NADEEM |
| **Date of Experiment** | 25th OCT, 2021 |

**TASK#01**

Write a program by using queue in NumPy array?

**CODE:**

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| import numpy as np  class deque:    def \_\_init\_\_(self):      self.element=np.arrange(5)    def display(self):       return self.element    def enqueue(self,data):       x=np.append(self.element,data)       return x      def deque(self):       x=np.dele(self.element,0)       return x  q=deque()  q.display()  q.enqueue(5)  q.deque() |

**OUTPUT:**

**Graphical user interface, text, application, email

Description automatically generated**

**TASK#02**

Write down the name of function and how they are using program:

**ANSWER:**

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| append(a)¶  Add a to the right side of the deque.  appendleft(a)  Add a to the left side of the deque.  clear()  Remove all elements from the deque leaving it with length 0.  copy()  Create a shallow copy of the deque.  extend(iterable)  Extend the right side of the deque by appending elements from the iterable argument.  extendleft(iterable)  Extend the left side of the deque by appending elements from iterable. Note, the series of left appends results in reversing the order of elements in the iterable argument.  insert(i, a)  Insert a into the deque at position i.  If the insertion would cause a bounded deque to grow beyond maxlen, an IndexError is raised.  pop()  Remove and return an element from the right side of the deque. If no elements are present, raises an IndexError.  popleft()  Remove and return an element from the left side of the deque. If no elements are present, raises an IndexError.  reverse()  Reverse the elements of the deque in-place and then return None.  When the deque is not empty, rotating one step to the right is equivalent to d.appendleft(d.pop()), and rotating one step to the left is equivalent to d.append(d.popleft()).  Deque objects also provide one read-only attribute:  maxlen  Maximum size of a deque or None if unbounded. |