

Python - Queue

We are familiar with queue in our day to day life as we wait for a service. The queue data structure also means the same where the data elements are arranged in a queue. The uniqueness of queue lies in the way items are added and removed. The items are allowed at one end but removed from the other end. So it is a First-in-First out method.

A queue can be implemented using python list where we can use the insert() and pop() methods to add and remove elements. There is no insertion as data elements are always added at the end of the queue.

Adding Elements

In the below example we create a queue class where we implement the First-in-First-Out method. We use the in-built insert method for adding data elements.

Example

```
class Queue:
    def __init__(self):
        self.queue = list()

    def addtoq(self, dataval):
        # Insert method to add element
        if dataval not in self.queue:
            self.queue.insert(0, dataval)
```

```
        return True
    return False

    def size(self):
        return len(self.queue)
```

```
TheQueue = Queue()
TheQueue.addtoq("Mon")
TheQueue.addtoq("Tue")
TheQueue.addtoq("Wed")
print(TheQueue.size())
```

Output

When the above code is executed, it produces the following result –

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Removing Element

In the below example we create a queue class where we insert the data and then remove the data using the in-built pop method.

Example

```
class Queue:
    def __init__(self):
        self.queue = list()

    def addtoq(self, dataval):
        # Insert method to add element
```

```
    if dataval not in self.queue:
        self.queue.insert(0,dataval)
        return True
    return False
# Pop method to remove element
    def removefromq(self):
        if len(self.queue)>0:
            return self.queue.pop()
        return ("No elements in Queue!")
```

```
TheQueue = Queue()
TheQueue.addtoq("Mon")
TheQueue.addtoq("Tue")
TheQueue.addtoq("Wed")
print(TheQueue.removefromq())
print(TheQueue.removefromq())
```

Output

When the above code is executed, it produces the following result –

Mon

Tue

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