Although arrays are pre-defined in Python in the form of lists, we can create our own arrays as well as other DS.

In [1]:

```
class MyArray():
    def __init__(self):
        self.length = 0 # initialize the length of the array
        self.data = {} # initialize the data of the array with an empty di

# By default, attributes of the array class are stored in a dict.
# When the __dict__ method is called on an instance of the class > returns
# When the instance of the class is printed > returns a class object with
# But we know when we print the array we get the elements of the array as
# What happens is: when we print the instance of the class, the built-in __
# So we modify the __str__ method inside the class to suit our needs.

    def __str__(self):
       return str(self.__dict__)
# Prints attributes of the array class(length and dsata) in str format whe

    def get(self, index):
        return self.data[index]
#This method takes in the index of the element as a param + returns the co

    def push(self, item):
        self.length += 1
        self.data[self.length - 1] = item
# Adds the item provided to the end of the array.

    def pop(self):
        last_item = self.data[self.length-1]
        del self.data[self.length - 1]
        self.length -= 1
        return last_item
# Collects the last element; Deletes the last element from the array; Decr
# O(1) time

    def insert(self, index, item):
        self.length += 1
        for i in range(self.length-1, index, -1):
            self.data[i] = self.data[i-1]
        self.data[index] = item
# Shifts every element from the index to the end by one place towards righ
#O(n) operation


    def delete(self,index):
        for i in range(index, self.length-1):
            self.data[i] = self.data[i+1]
        del self.data[self.length - 1]
        self.length -= 1
# Shifts elements from the given index to the end by one place towards lef
# O(n) operation
```

In [2]:
```
arr = MyArray()

# Print will display the outputs given by the function calls

arr.push(6)
print(arr)
```

```
{'length': 1, 'data': {0: 6}}
```

In [3]:
```
arr.push(2)
print(arr)
```

```
{'length': 2, 'data': {0: 6, 1: 2}}
```

In [4]:
```
arr.push(9)
print(arr)
```

```
{'length': 3, 'data': {0: 6, 1: 2, 2: 9}}
```

In [5]:
```
arr.pop()
print(arr)
```

```
{'length': 2, 'data': {0: 6, 1: 2}}
```

In [6]:
```
arr.push(45)
arr.push(12)
arr.push(67)

print(arr)
```

```
{'length': 5, 'data': {0: 6, 1: 2, 2: 45, 3: 12, 4: 67}}
```

In [7]:
```
arr.insert(3,10)

print(arr)
```

```
{'length': 6, 'data': {0: 6, 1: 2, 2: 45, 3: 10, 4: 12, 5: 67}}
```

In [8]:
```
arr.delete(4)

print(arr)
```

```
{'length': 5, 'data': {0: 6, 1: 2, 2: 45, 3: 10, 4: 67}}
```

In [9]:
```
print(arr.get(1))
```

```
2
```

In [10]:
```
print(arr)
```

```
{'length': 5, 'data': {0: 6, 1: 2, 2: 45, 3: 10, 4: 67}}
```