Assignment 5

Q1)

Algorithm	Best	Avg	Worst
Selection sort	$\Omega(n^2)$	$\Theta(n^2)$	$O(n^2)$
Bubble sort	$\Omega(n)$	$\Theta(n^2)$	$O(n^2)$
Insertion sort	$\Omega(n)$	$\Theta(n^2)$	$O(n^2)$
Heap sort	$\Omega(n\log(n))$	$\Theta(n\log(n))$	$O(n\log(n))$
Quick sort	$\Omega(n\log(n))$	$\Theta(n\log(n))$	$O(n\log(n))$

Q2)

```
def selectionSort(arr):
    n = len(arr)
    for i in range(n):
        minimum = i
        for j in range(i+1, n):
            if (arr[j] < arr[minimum]):
                minimum = j
        temp = arr[i]
        arr[i] = arr[minimum]
        arr[minimum] = temp
    return arr
arr = [13, 4, 9, 5, 3, 16, 12]
print(selectionSort(arr))
```

#3) def pop(stack):

```
    if (isEmpty (stack)):
        return str(-maxsize -1)
    return stack.pop()
```

#4) def DeQueue(self):

```
    if self.isEmpty():
        print("Empty")
        return
    print("%s dequeued from queue" %
                    str(self.q[self.front]))
    self.size = self.size -1
```