

Infix to Postfix:

```
Operators = set(['+', '-', '*', '/', '(', ')', '^'])
```

```
Priority = {'+':1, '-':1, '*':2, '/':2, '^':3}
```

```
def infixToPostfix(expression):
```

```
    stack = []
```

```
    output = ''
```

```
    for character in expression:
```

```
        if character not in Operators:
```

```
            output+= character
```

```
        elif character=='(':
```

```
            stack.append('(')
```

```
        elif character==')':
```

```
            while stack and stack[-1]!='(':
```

```
                output+=stack.pop()
```

```
            stack.pop()
```

```
        else:
```

```
            while stack and stack[-1]!='(' and  
Priority[character]<=Priority[stack[-1]]:
```

```
                output+=stack.pop()
```

```
            stack.append(character)
```

```
    while stack:
```

```
        output+=stack.pop()
```

```
    return output
```

```
expression = input('Enter infix expression ')
```

```
print('infix notation: ',expression)
```

```
print('postfix notation: ',infixToPostfix(expression))
```

Queue:

```
class Queue:
    def __init__(self):
        self.items = []

    def is_empty(self):
        return len(self.items) == 0

    def enqueue(self, item):
        self.items.append(item)

    def dequeue(self):
        if not self.is_empty():
            return self.items.pop(0)
        else:
            raise IndexError("Cannot dequeue from an empty queue")

    def size(self):
        return len(self.items)

queue = Queue()

queue.enqueue(1)
queue.enqueue(2)
queue.enqueue(3)

print(queue.dequeue())
print(queue.dequeue())

print(queue.is_empty())

print(queue.size())
```