Exercise 6A

Code:

```
def precedence(op):
    if op in ('+', '-'):
        return 1
    if op in ('*', '/'):
        return 2
    if op == '^':
        return 3
    return 0
def is_operand(ch):
    return ch.isalnum()
def infix_to_postfix(expression):
    stack = []
    output = ""
    for ch in expression:
        if is_operand(ch):
            output += ch
        elif ch in "([{":
            stack.append(ch)
        elif ch in ")]}":
            while stack and stack[-1] not
in "([{":
                output += stack.pop()
                stack.pop()
        else:
            while stack and
precedence(stack[-1]) >=
precedence(ch):
                output += stack.pop()
            stack.append(ch)
    while stack:
        output += stack.pop()
    return output
expr = input("Enter an infix
expression: ")
print("Postfix Expression:",
infix_to_postfix(expr))
```

Output:

```
Type "help", "copyright", "credits" or "licel
>

========================= RESTAF
Enter an infix expression: ab+c-(d/e)
Postfix Expression: abc+de/-
>
```

Exercise6b

```
class Queue:
    def  __init__(self):
        self.queue = [ ]
    def is_empty(self):
        return len(self.queue) == 0
    def enqueue(self,item):
        self.queue.append(item)
    def dequeue(self):
        if self.is_empty():
            raise IndexError("queue is empty")
        return self.queue.pop(0)
    def size(self):
        return len(self.queue)
def is_palindrome(s):
        queue = Queue()
        for char in s:
            queue.enqueue(char)
        while queue.size()>1:
            if queue.dequeue()!=queue.queue[-1]:
                return False
            queue.queue.pop()
        return True
test_string = "radar"
if  is_palindrome(test_string):
    print(f' "{test_string}" is a palindrome.')
else:
     print(f' "{test_string}" is not  a palindrome.')


test_string = "hello"
if  is_palindrome(test_string):
    print(f' "{test_string}" is a palindrome.')
else:
```

```
    print(f' "{test_string}" is not  a
palindrome.')
```

output:

```
====================== F
"radar" is a palindrome.
"hello" is not  a palindrome.
```