Course_Project_1B 互评打分

互评打分：**97**

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实验结果

熵的计算

```
Text Entropy (0th order): 4.387751803302527
Text Entropy (3rd order): 1.3723414914875431
Text Entropy (5th order): 0.4880994556315586
```

Shannon 编码

```
 : 000
e: 0011
t: 0100
o: 0101
a: 0110
n: 01111
i: 10001
r: 10010
s: 10011
h: 10101
d: 10110
l: 10111
u: 110001
y: 110010
w: 110100
c: 110101
m: 110110
g: 110111
f: 111000
```

Huffman 编码

```
l: 000
d: 001
h: 002
.: 0100
': 01010
Y: 0101100
L: 0101101
E: 0101102
H: 0101110
K: 01011110
;: 01011111
F: 01011112
j: 0101112
T: 010112
k: 01012
p: 0102
s: 011
r: 012
i: 020
n: 021
f: 0220
g: 0221
m: 0222
```

平均码长

```python
# 计算平均码长
def calculate_average_code_length(codes, frequencies):
    total_length = sum(len(code) * freq for char, code in codes.items() for freq in [frequencies[char]])
    total_symbols = sum(frequencies.values())
    average_length = total_length / total_symbols
    return average_length

average_length_shannon = calculate_average_code_length(shannon_codes, Text_stats)
average_length_huffman = calculate_average_code_length(huffman_codes, Text_stats)

print(f"Shannon Code Average Length: {average_length_shannon}")
print(f"{Q}-array Huffman Code Average Length: {average_length_huffman}")
```

在 31ms 的 2024.06.09 13:33:46 执行

```
Shannon Code Average Length: 4.7386759581881535
3-array Huffman Code Average Length: 3.1479561485510326
```

评分理由

代码可以运行，完成所有课设要求，即计算熵、Shannon编码、Q-array Huffman编码正确。编码结果保存到了本地。