

Exact Pattern Matching

TOTAL POINTS: 4

1. For the Brute Force algorithm (from [this](#) lecture) matching some Pattern against the Text `AAAAAAAAAT`, which of the Patterns below will require the **maximum** number of comparisons throughout the whole algorithm?

1 point

- ☒ `AAAA`
☐ `TTTT`
☐ `AATTA`

2. You've tried to match the Pattern `AACTAACAT` against some Text starting from position 3 and you know that `AACTAAC` is the longest common prefix of the Pattern and the suffix of the Text starting in position 3.

1 point

`TTTAACTAACTTTTTTTTTTT` `AACTAACAT`

What is the maximum amount by which you can shift the Pattern to the right without missing an occurrence of the Pattern in the Text?

- ☒ 4
☐ 3
☐ 7
☐ 1

3. What are the values of the [prefix function](#) for the string `ACATACATACACAT`?

1 point

- ☒ `[0, 0, 1, 0, 1, 2, 3, 4, 3, 6, 7, 2, 3]`
☐ `[0, 0, 1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9]`
☐ `[0, 0, 1, 0, 1, 2, 3, 4, 5, 6, 7, 0, 1]`

4. What is the total number of times that the condition of the while loop will be checked in this pseudocode for `ComputePrefixFunction` if we call it for the string `ACATACATACACAT`?

1 point

ComputePrefixFunction(P)

```

s ← array of integers of length |P|
s[0] ← 0, border ← 0
for i from 1 to |P| - 1:
    while (border > 0) and (P[i] ≠ P[border]):
        border ← s[border - 1]
    if P[i] == P[border]:
        border ← border + 1
    else:
        border ← 0

```

1 1 1 1 1 1 1 1 1 1 1 1 1

Exact Pattern Matching | Course: x

← → ↻

coursera.org/learn/algorithms-on-strings/exam/a1WMP/exact-pattern-matching/attempt

🔍 ☆ 👤 ⋮

📺 Make Images, Vide...

📄 Python Certification...

🔗 Python Courses & E...

🎓 Learn Python - Free...

🎧 Voice Controlled Ch...

📺 How to create a si...

📧 How to Read Emails...

📧 How to send beauti...

⌵

← Exact Pattern Matching

Graded Quiz - 35 min

Due Aug 10, 12:25 PM IST

```
while (border > 0) and (P[i] ≠ P[border]):  
    border ← s[border - 1]  
if P[i] == P[border]:  
    border ← border + 1  
else:  
    border ← 0  
s[i] ← border  
return s
```

☒ 15

☐ 12

☐ 14

☐ 13

☐ I, Aditya Jha, understand that submitting work that isn't my own may result in permanent failure of this course or deactivation of my Coursera account.
[Learn more about Coursera's Honor Code](#)

🔗 🔒 📄

Save

Submit