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

   - (•) $AAAA$
   - ( ) $TTTT$
   - ( ) $AATA$

2. You've just 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

   ???**AACTAAC**????????????? **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 $ACATACATACACA$? — 1 point

   - ( ) [0, 0, 1, 0, 1, 2, 3, 4, 5, 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 $ACATACATACACA$? — 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
  s[i] ← border
return s
```

   - ( ) 15
   - ( ) 12
   - (•) 14
   - ( ) 13

I, **Jainal Snehal Gosaliya**, 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

Saving... Submit