Section 5: Hashing (3 questions)

Question 1

1/1 point (graded)

What is the size of the array needed to store international phone numbers with up to 15 digits using direct addressing?

- 15
- 150
- 10^{15} ✔
- 10^{16}

Submit You have used 1 of 1 attempt

Question 2

1/1 point (graded)

Consider the universal family of hash functions with prime $p = 17$, cardinality $m = 10$: $h_{ab}(x) = (ax + b) \pmod{p} \pmod{m}$. A randomly chosen hash function from this universal family turned out to have $a = 2, b = 5$.

Compute $h(14)$.

6 ✔

6

Submit You have used 1 of 1 attempt

Question 3

0/1 point (graded)

What is the average running time of Rabin-Karp's algorithm for text T and pattern P if there are no occurrences of the pattern in the text?

Assume that the prime p used in the algorithm is large enough, so that the number of false alarms during algorithm execution is negligible.

- $O(|T|)$ ✖
- $O(|T| + |P|)$ ✔
- $O(|T||P|)$

Submit You have used 1 of 1 attempt

Answers are displayed within the problem