HABIB UNIVERSITY

Data Structures & Algorithms

CS/CE 102/171 Spring 2023

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Time Complexity Analysis

Student 1: _____

- Justify if the given time complexities hold true for the respective functions:
  a. $f(n) = 5n^2 + 3n\log n + 2n + 5$
  $g(n) = n^2$
  That is, time complexity = O(n^2)

  b. $f(n) = 3\log n + 2$
  $g(n) = n\log n$
  That is, time complexity = O(n log n)

  c. $f(n) = 2^{n+2}$
  $g(n) = 2^n$
  That is, time complexity = O(2^n)

  d. $f(n) = 2n + 100\log n$
  $g(n) = \sqrt{n}$
  That is, time complexity = O($\sqrt{n}$)