CMPT 120

Topic: Searching – Part 2
and Intro to Time Efficiency (Algorithm Analysis)
Last Lecture

• Intro to time efficiency and the Big O notation
• Analyzed the time efficiency of Linear Search
Learning Outcome

• At the end of this course, a student is expected to:
  • Create (design), analyze, and explain the behaviour of simple algorithms:
    • ...
    • Describe and illustrate the operation of linear search, binary search, and $O(n^2)$ sorting algorithms
    • Analyze the running time of simple iterative algorithms
    • Compare the running time of algorithms; determine if one algorithm is more time efficient than another
  • Create (design) small to medium size programs using Python:
    • ...
    • Create programs that search lists and strings
Today’s Menu

- We shall look at another searching algorithm
Book: Le Scaphandare et le Papillon

THE DIVING BELL AND THE BUTTERFLY

“A wistful, poetic, ironic and whimsically affirmative testament by a man who refused to die in spirit.”

–The New York Times

JEAN-DOMINIQUE BAUBY
Locked In Syndrome

- **Locked-in syndrome (LIS)** is a condition in which a patient is aware but cannot move or communicate verbally due to complete paralysis of nearly all voluntary muscles in the body except for the eyes.
  
  Source: https://en.wikipedia.org/wiki/Locked-in_syndrome

- Jean-Dominique Bauby could only blink one eye
How did he write the book?
Activity

Instructions:
• Pair up
• Think of a solution:
  • What questions would JD Bauby’s personal assistant ask JD in order to construct the words of his book?
  • Remember: Jean-Dominique could only blink one eye
• Test it
  • One of you is JD Bauby - think of a word
  • The other is the personal assistant - try to guess the word by asking Q’s
• Switch!