

CS 2202

Assignment in Algorithms and Complexities (First Meeting Assignment)

Submitted by:

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Submitted to:

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1. Book Title: **Algorithms, Programming, Pascal**

Author/s: **Barbara Li Santi, Lydia Mann, Fred Zlotnick**

Year Published: **1987**

1. What is an algorithm?

* **From the book that I have borrowed, an *algorithm* is described as “a precise, finite sequence of steps, in a prescribed order, that when carried out will lead to the solution of a specific problem”**

1. Short pseudo code of a mathematical algorithm

**Pseudocode:**

**Algorithm: Binary Search**

**Input: x : integer, [a1, . . . , an] : strictly increasing list of integers**

**Output: Index i s.t. x = ai or 0 if x is not in the list.**

**i := 1; // i is the left endpoint of the interval**

**j := n; // j is the right endpoint of the interval**

**while i < j do**

**m := b(i + j)/2c;**

**if x > am**

**then i := m + 1**

**else j := m;**

**if x = ai**

**then result := i**

**else result := 0;**

**return result;**

Source: <http://www.inf.ed.ac.uk/teaching/courses/dmmr/slides/13-14/Ch3.pdf>, Discrete Mathematics, Chapter 3: Algorithms by Richard Mayr