

COS 301 Programming Languages
Fall 2011
Project Assignment #4 Due Tuesday Nov 29
Control Flow Constructs, Error and Exception Handling

Write a 5-to-10 page paper that discusses control flow constructs and semantics, and exception or error handling semantics (see text Ch. 14).

Control flow should include conditionals, loops and gotos. The next paper will address function call and return so you do not need to address these issues in this paper.

Programming Assignment #4

The maximal sum contiguous subsequence problem is very concisely expressed in <http://programmingpraxis.com/2010/12/03/maximum-sum-subsequence/> :

"Given a sequence of integers, both positive and negative, find the contiguous subsequence with the maximum sum. For instance, given the sequence 31, -41, 59, 26, -53, 58, 97, -93, -23, 84, the maximum sum subsequence is 59, 26, -53, 58, 97, which sums to 187."

Algorithms with complexity $O(n^3)$, $O(n^2)$, $O(n \log n)$ and $O(n)$ are well known.

The top two references listed by Google are:

<http://wordaligned.org/articles/the-maximum-subsequence-problem>

<http://www.cs.ucf.edu/~reinhard/classes/cop3503/lectures/AlgAnalysis04.pdf>

Review these references and implement the $O(n)$ algorithm in your language, using arrays, lists or sequences (whichever is most appropriate to your language).

Sample data for testing will be posted later this week. Submit code and output, as usual.