DSA - Seminar 5

Problem 1:

Determine the sum of the largest k elements from a vector containing n distinct numbers.

EX:

Ideas? ☺

[6, 12, 91, 9, 3, 5, 25, 81, 11, 23]

k = 3

Result: 91 + 81 + 25 = 197

Problem 1:

Determine the sum of the largest *k* elements from a vector containing *n* distinct numbers.

EX: [6, 12, 91, 9, 3, 5, 25, 81, 11, 23]

Think about implementing the algorithm!

function sumOfK(elems, n, k) **is**:

- elems is an array of unique integer numbers
- n is the number of elements from elems
- k is the number of elements we want to sum up. Assume k <= n

Complexity ?

- Find the maximum k times

- ...

- $\Theta(...)$

Problem 1:

Determine the sum of the largest k elements from a vector containing n distinct numbers.

[...] [*the largest k elements from a vector*] [...]

- **Use heaps?** ☺

  - binary heap
  - min or max heap

DSA - Seminar 5

Problem 2:

2.1   Transform an arithmetic expression in the corresponding postfix notation

2.2   Evaluate the expression on the postfix notation

2.1 Transform the expression in postfix notation

Example:

infix	postfix
2 + 4	2 4 +
4*3+6	
4*(3+6)	4 3 6 + *
(5 + 6) * (4 − 1)	
	Remark: There are no parentheses

What can we say about   …   ?
- Relative order of the operands
- Relative order of the operators

Problem 3:

Check for Balanced Brackets in an expression (well-formedness)

Given an expression expr, write a program to examine whether the pairs and the orders of "{", "}", "(", ")", "[", "]" are correct.