58127-1 Programming in C (4 credit points)

Please write on each paper the date and the name of the course as well as your name, student id and signature.

Remember to write necessary comments to your program.

1) FUNCTION REVERSEMYSELF (12 points)

   Write a function that modifies an integer array by reversing it. Design and implement a rational parameter passing. You should be able to use the function with the integer arrays having different sizes.

2) FUNCTIONS ENQUEUE, AND DEQUEUE (14 points)

   Give declarations of the data types needed for a queue, which has a header node. The header node has pointers to the head and the tail of the queue. The elements of the queue are in a singly linked list and the data is a double value.

   Write a function `enqueue` that gets as a parameter a header node of a queue and a double value. The function should add the double value into the tail of the queue. The function should return 1 if it is successful otherwise 0.

   Write a function `dequeue` that has as a parameter a header node of a queue and the function uses the second parameter to return the data value of the element, which is in the head of the queue. The function also removes the element from the head of the queue. The function should return 1 if it is successful otherwise 0.

3) PROGRAM TRANS (14 points)

   Write a C program so that

   ```
   trans x y file.txt
   ```

   writes to the standard output a copy of the file `file.txt` in which all occurrences of the character x are replaced by the character y. Perform error checking, and when necessary give an error message.

Good luck !

Please give feedback about the course! https://ilmo.cs.helsinki.fi/kurssit/servlet/Valinta?kieli=en