



Lecture 11

Strings



Tests are coming

16.01 and 23.01

Know:

- Everything from the first test
- Pointers and addresses
- Passing data to and from functions with pointers
- Static and dynamically allocated 1 and 2D arrays
- Arrays and functions
- File I/O operations
- Operations on strings
- Structures (next lecture)

Have:

- A Pen
- Student ID

Do not have:

- Notes
- Any electronic devices



char, char* and char[]

16.01 and 23.01

- Write a program illustrating all the characters - some we shall not see
- Find the special character, we will need it later
- Write a program that uses an array of characters to store a word or a sentence
- Store something in an array, try %s to print the content
- Use the special character, it is a termination sign



String is an array of char

with a special, terminating character added at the end

- Initialize a string in a more convenient manner
- How much space does a string occupies?
- What is the last character?
- Do I need to provide the size if an array is static?
- What is a difference in using `char[]` and `char*`?
- Why can't we reassign some strings?



Reading strings from keyboard

scanf?

- Write a program reading a string from a keyboard
- Can we do better?
- `char *fgets (char *str, int size, FILE* file);`
- We can also read from file!



Manipulating null terminating strings

string.h

- Comparison: `int strcmp (const char *s1, const char *s2);` Returns 0 if s1 and s2 are the same; less than 0 if s1<s2; greater than 0 if s1>s2.
- String concatenate: `char *strcat (char *dest, const char *src);`
- Copy: `char *strcpy (char *dest, const char *src);`
- Length of a string: `int strlen (const char *s);`
- `char* strchr(s1, ch);` Returns a pointer to the first occurrence of character ch in string s1.
- `char* strstr(s1, s2);` Returns a pointer to the first occurrence of string s2 in string s1.