CSD101: Introduction to computing and programming (ICP)

Other input-output functions

- The standard **C** library also provides single character input-output.
- `getchar()` reads a single character from the standard input stream (keyboard) and returns an `int` value corresponding to the character read. If the end of the input stream is reached it returns the `EOF` character (end-of-file). `EOF` is returned when there is no more input and the end of the input stream is reached. (See the `stdio` library documentation in Kernighan's book (Appendix B) or King's book chp 22 (has C99 extensions)).
- `putchar(ch)` writes the character ch on the standard output (terminal/screen) and returns an integer corresponding to the character ch.
- Note that **C** encodes characters as unsigned integers so one can do arithmetic operations on characters as if they were integers. This is actually a weak point of **C** .

Strings I

- A string is a sequence of characters.
- A string can be stored in a character array.
  `char str[<size>];`
  Where `<size>` should be one more than the length of the sequence since a string should be terminated by the NULL character `'\0'` (ASCII value 0) at the end indicating the string ends.
- Can also be stored also using pointers (studied later).
- If a string is initialized at declaration time the array size need not be specified.
  `char str[]="This is a string";`.

Strings II

- To store a sequence of strings we need a two dimensional array. If the string is initialized in the declaration then the second dimension (max length of any string in the array) must be specified - since 2D arrays are **stored in row major form**.
- The library `string.h` has several functions to manipulate strings. We will study some of them later after pointers have been introduced.