

Outline for May 17, 2002

Handouts: *none*

Reading: Johnsonbaugh and Kalin, pp. 390–435, 679–702 (appendix of useful functions)

1. Greetings and felicitations!
2. Other Types
 - a. bit fields
 - b. unions
 - c. enumerated types
3. Libraries
 - a. compiling with libraries
 - b. common libraries: `stdio`, `ctype`
4. Standard I/O Library (`#include <stdio.h>`)
 - a. open file: `fopen`
 - b. unstructured read/write: `getchar`, `fgetc (getc)`, `putchar`, `fputc (putc)`
 - c. formatted read/write: `fgets (gets)`, `fscanf`, `fputs (puts)`, `fprintf`
 - d. structured read/write: `fread`, `fwrite`
 - e. random access: `fseek`, `ftell`, `rewind`
 - f. close file: `fclose`
 - g. miscellaneous: `feof`, `ferror`, `clearerr`
5. Character types and conversions (`#include <ctype.h>`)
 - a. alphabetic, numeric, alphanumeric: `isalnum`, `isldigit`, `isxdigit`, `isalpha`
 - b. upper, lower, and conversions: `isupper`, `islower`, `toupper`, `tolower`
 - c. types of chars: `isctrl`, `isgraph (not blank, printable)`, `isprint (printable)`, `ispunct`, `isspace`
6. String conversion (`#include <stdlib.h>`)
 - a. string to number: `atoi`, `atof`, `atol`
7. String functions (`#include <string.h>`)
 - a. compare: `strcmp`, `strncmp`, `strcasecmp`, `strncasecmp`; `memcmp`
 - b. copy: `strcpy`, `strncpy`; `memcpy (no overlap)`, `memmove (overlap okay)`
 - c. find character: `strchr (index)`, `strchr (rindex)`, `strpbrk`; `memchr`
 - d. length: `strlen`
8. Memory management (`#include <stdlib.h>`)
 - a. Allocation: `malloc`, `calloc`
 - b. Release: `free`, `cfree (deprecated)`
 - c. Reallocation: `realloc()`
9. Miscellaneous
 - a. terminate program (`exit`); `include <stdlib.h>`
 - b. sort array of data (`qsort`); `include <stdlib.h>`
 - c. time of day (`time`, `ctime`); `include <time.h>`
 - d. execute command (`system`); `include <stdlib.h>`