**Introduction to Computer Science
W 1113 – Lab (C)
Lab1**

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Rules

- I will call on you
- You will learn a lot, I can assure you
  - Do the reading
  - Attendance is VERY important, pseudo mandatory
- Email me if you have any questions
- I am going to teach this as if it were a small group
  - You and I will get to know each other
  - Interrupt me, don't let me proceed unless you understand everything
  - Speak loudly
- No sleeping in the lab ☺
- Turn cell phones off

Books

- The two books I will use (yeah I know you weren't assigned them both)

Introduction to C

- Created by Dennis Ritchie in 1972
- Kernighan and Ritchie, wrote the canonical book

Compile and Run

- Basic compile and run
  - gcc <filename.c>
  - Therefore to run…
- Advanced options
  - gcc <filename.c> -o blah
  - Therefore to run…
- Makefile (and make)
  - What is it?

Structure of program

```
#include <stdio.h>
int main (void) {
    printf("Hello World!\n");
    return 0;
}
```

Structure of program

```
#include <stdio.h>
int main (void) {
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```

- Pre-processing directive
- Angle brackets mean that the file is found in the usual place

Structure of program

```
#include <stdio.h>
int main (void) {
    printf("Hello World!\n");
    return 0;
}
```

- Main function
- (void)
- Int over here means…
- {

Structure of program

```
#include <stdio.h>
int main (void) {
    printf("Hello World!\n");
    return 0;
}
```

- printf
- Hello World
- "…"
- ;

Structure of program

```
#include <stdio.h>
int main (void) {
    printf("Hello World!\n");
    return 0;
}
```

- Return
- 0

Structure of program

```
#include <stdio.h>
int main (void) {
    printf("Hello World!\n");
    return 0;
}
```

- End of program or the function

Comments

- //
- /* … */

Variables

```
#include <stdio.h>

int main (void) {
    int inches, feet, fathoms;

    fathoms = 7;
    feet = 6 * fathoms;
    inches = 12 * feet;
    printf("Wreck of the Hesperus:\n");
    printf("Its depth at sea in different units:\n);
    printf(" %d fathoms\n", fathoms);
    printf(" %d feet\n", feet);
    printf(" %d inches\n", inches);
    return 0;
}
```

Variables II

```
#include <stdio.h>

int main (void) {
    char c;

    c = 'A';
    printf(" %c rocks\n", c);
    return 0;
}
```

Variables III

- Declare at the beginning of the program
- Name them intelligently
- Remember to assign values

I/O - output

- printf
- Special constructs like \n and \t
  - Also use \ to ignore next character (\\, \')
- %d, %c, etc.

Data types

- int
- char
- float
- string – next time

Miscellaneous

- #include <…>
- #include "filename"
- #define
  - Anywhere in the program

Assignment

- Type into cunix
  - man gcc
- Read Ch. 1-4 of *Practical C Programming*