CIS*1500 Review Session!

Introduction to Programming
TA: Alliyya Mo

Today’s Options:

- Q & A, What do you guys what to review
- Going through the whole course
- Going through the review questions from class
- Sample questions from bucky
- Tracing code examples

Things to make sure you know!

- Basic syntax
- Control Flow(decision making and loops)
- Functions (Pass by value and pass by reference)
- Arrays!
- Strings
- **Tracing code(can you read code)***

Basics of C

- Different data types(char,int,float,double)
- printf and format specifiers(%d,%f,%lf)
- using the math library
- How to compile(gcc)
  - flags for compilation(-Wall)

Which is the correct print statement?

Given: int i = 45;
double j = 1.69;
char k = ‘A’;

Output: 45 1.69 A

A. printf(“%d %f %c”,i,j,k);
B. printf(“%d %f %d”,i,j,k);
C. printf(“%d %d %c”,i,j,k);
D. printf(“%d %lf %c”,i,j,k);

How do we include the math library to use in our programs?

A. #include mathlib
B. #include math.h and use the flag -lm when compiling
C. #include mathlib and use the flag -lm when compiling
D. #include <math.h> and use the flag -lm when compiling
E. #include math.h and use the flag -Wall when compiling

Which operation does not results in 0

A. 16%2
B. 16%4
C. 16%10
D. 16%8

Trigonometric function in the math library use ?

A. Degrees
B. Gradients
C. There’s trig functions in C?????
D. Radians
E. Moles
F. Gradian
G. Turns

Which the correct use of Pow?

```
int power = 3;
double powerD = 3.0;
int base = 2;
double baseD = 2.0;
int ans;
double ansD;
```

a. ans = pow(power, base);
b. ans = pow(base, power);
c. ansD = pow(power, base);
d. ansD = pow(baseD, powerD);
e. ansD = pow(powerD, baseD);
f. ansD = powd(baseD, powerD);

What -Wall flag do when used in compiling?

Ex. gcc -Wall myFile.c

A. Renames your executable
B. Checks for logic errors
C. Allows you to use the math library
D. Reports back warning messages from compilation
E. Checks that your program is correct

Which is the most correct?

A. #defn PI 3.1456
B. define PI = 3.1456
C. #define PI = 3.1456
D. define PI 3.1456
E. #define PI 3.1456

Control Flow

- if-statement syntax
- switch statements syntax
- for loops
- while loops
- do..while loops

- Common errors with loops(debugging)

What is the results of this?

```
int i;
for (i = 0; i <= 10; i++);
{
    printf("Hello\n");
}
```

a. prints hello 10 times
b. prints hello 11 times
c. prints hello 1 time
d. Doesn’t print anything
e. Segmentation fault

Functions

- How to declare functions
  - What is the return type, parameters
  - Function prototypes
- Pass by Value vs Pass by Reference
- How do we pass an array?

Which statement is true about pass by value?

a. it makes a copy of the variable in the parameters, so nothing in memory changes
b. is only for arrays
c. doesn’t work for arrays
d. same things as pass by reference
e. passes the memory address, so values in memory actually change

Which statement is true about pass by reference

a. it makes a copy of the variable in the parameters, so nothing in memory changes
b. is only for arrays
c. doesn’t work for arrays
d. fancy way of saying pass by value
e. passes the memory address, so values in memory actually change

Arrays

- How to declare an array
- How to transverse an array
- Array indexing
- How to pass an array to a function

Strings

- How are strings defined in C, what's the difference between a string and a character array?
- The string library includes these functions:
  - strcpy*
  - strcmp
  - strlen

  Make sure you know how to use these functions

Which is the correct usage of strcpy

```
char name[] = {“Oliver Queen”};
char otherName1[14];
char otherName2[10];
```

a. strcpy(name, otherName);
b. strcpy(&otherName1, &name);
c. strcpy(otherName2, name);
d. strcpy(otherName1, name);

Structs

- What is a struct
- Know how to declare these
- How to access parts of a struct

Is this a valid declaration of a struct?

```
struct Student
{
    int id;
    int age;
    int average;
    char firstName[10];
    char lastName[10];
};
```

Testing

- What are the different types of testing?
- How do they work?

Which are not a type of Testing?

a. Yolo testing
b. Black box testing
c. White box testing
d. Grey box testing
e. Unit testing
f. Regression testing

Suggestions!

- Practice reading code! Look over a friend’s piece of code, can you understand what it’s trying to do?
- Would you be able to fill in blanks in a section of code
- If you don’t know how a certain function works, write some code! Practice!