**C Programming Language**

**Print Statement**

printf(“word\n”);

•\n = new line

**Variables/Data Types**

char Variable\_Name = ‘Stored\_Variable’;

**•**Single character (a, b, ?, $, ...)

char Variable\_Name[] = “Stored\_Variable”;

•[] = allows multiple character (Hi, Abigail, …)

•[n] n is the number of characters it can store. Leave blank for indefinite.

int Variable\_Number = Stored\_Number;

•whole numbers (10, 20, 3, …)

double Variable\_Number = Stored\_Number;

•numbers with decimal point (30.3, 53.0, 1.5, …)

•Variables can be changed midway.

**Format Specifiers**

printf(“%c\n”, Char\_VariableName);

•%c (will state the characters) and Char\_VariableName (the name of the variable of a single characterthat will be stated

printf(“%s\n”, Char\_VariableName);

•%s (will state the characters) and Char\_VariableName (the name of the variable of a string of charactersthat will be stated

printf(“%d\n”, Int\_VariableName);

•%d (will state the integer) and Int\_VariableName (the name of the variable of an integer/whole number that will be stated)

printf(“%f\n”, Int\_VariableName);

•%f (will state the double) and Int\_VariableName (the name of the variable of a double/number with decimal places that will be stated)

**Example:**

char characterName [] = "John":

int characterAge = 35;

printf("There once was a man named %s\n", characterName);

printf ("he was %d years old.\n", characterAge);

printf("He really liked the name %s\n", characterName);

printf ("but did not like being %d.\n", characterAge):

**Will print as:**

There once was a man named John

He was 35 years old.

He really like the name John

But did not like being 35

**Mathematical Functions**

+ %d if both are integers and %f if one or both are doubles

- %d if both are integers and %f if one or both are doubles

\* %d if both are integers and %f if one or both are doubles

/ can be used with %d but will round down, use %f for the specific answer

pow(x, n) = x^n will only result in double and therefore use %f

Sqrt(x) = will only result in double and therefore use %f

ceil(x) = will only result in double and therefore use %f

floor(x)= will only result in double and therefore use %f

**Comment**

/\* \*/ = Statements within the asterisks will not affect the code (can be used to state code functions for easier summary)

**Constants**

const = values that cannot be changed

**User Input**

scanf(“Format\_Specifier”, &Variable\_Name);

•No & when using %s for strings

•%lf for double

•Will only input up to the first space

fgets(Variable\_Name, n, stdin)

•n for number of characters that can be inputted

•Can store strings, including spaces

•However, will add a new line regardless

**Array**

Variable\_Type Variable\_Name [n] = {Element0, Element1, …};

•Similar to char arrays

•Can be updated

Variable\_Name [n] = New\_Value;

•Can be made without elements but must put in number of elements it can hold