COMPILATION PROCESS

***vi***

What do you press prior to typing in text?

What letters on the keyboard act as navigation?

How do you copy a line?

How do you paste a line?

How do you save a file?

How do you exit vi?

***clang / gcc***

How do you compile the single file myhw1.c?

How do you run the file that was produced?

My program is spread in three files: mymain.c, myfuncs.c, and myfuncs.h.

How do I compile it?

How do I compile it if I want the executable to be named myprogram?

How do I run that file that was produced?

***makefiles***

I want to put an entry in my makefile for the program, myhw1.c, above.

It is the only thing in the makefile.

What do I type to make it compile.

Now I want to do the program above with three files. How do I add that

entry?

Given your answer, what do I type to compile myhw1.c?

What do I type to compile myprogram?

***svn***

What steps do I need to take to submit a file named warmup2.h in a

folder named hw2? Assume I already have my repository and am in

hw2.

I receive a message that my feedback for h2 has been pushed to my

repository. How do I get it?

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TYPES

For the following types:

int

unsigned int

char

float

double

string

Identify which type is appropriate to store the following:

Student ID's:

scores from exams:

readings from a scientific instrument:

letters in a word:

lines in a text document:

temperature forecast for the public:

Tell the result of the following expressions:

5 \* 7 =

5.3 \* 9.6 =

5 / 7 =

5.3 / 9.6 =

19 % 5 =

'a' + 3 =

'M'-'L' =

List the important format specifiers and their corresponding types

STRINGS

1. Declare a string.
2. Implement a string function (e.g. strcpy, strchr)
3. What is the difference between an array of characters and a string?
4. Look at the following code:

char \*carr = (char \*)malloc(sizeof(char)\*20);

strcpy(carr,"Hi");

4a) What is the length of the string pointed to by carr?

4b) What is the length of the array pointed to by carr?

1. What is the result in memory of the following operations?

char \*carr = (char \*)malloc(sizeof(char)\*20);

strcpy(carr,"Hi");

strcpy(carr+10,"Hi");

strcat(carr,"howdy");

CONTROL

Control structures:

You are expected to be able to

a) tell the output of a piece of code using these control structures

b) choose the most appropriate control construct given a circumstance

c) explain the differences between control construct and the scenarios

in which one is more appropriate than another

d) write one control structure using a simpler control structure

Decisions:

if

if - else

switch

Loops:

while

do - while

for

Recursion

Function calls:

You need to understand how they work, what variables get placed on

the stack, and when those variables are created and destroyed.

What does a return type of void mean?

What does a return type of void\* mean?

What does a parameter type of void\* mean?

TESTING

Given a problem, identify at least one test case in the following categories:

a) normal case

b) boundary case

c) error case

Explain the difference between black-box testing and white-box testing.

Design a set of test cases based on black-box testing and/or white-box testing.

When should test cases be developed?

a) before designing your solution

b) before implementing your solution

c) while implementing your solution

d) after implementing your solution

ARRAYS

Solve these problems with iteration and recursion.

Solve these problems using array syntax and pointer arithmetic syntax

Other practice problems:

1. Find the max in an array of n numbers
2. Find the min in an array of n numbers
3. Find the sum of an array of n numbers
4. Count how many are less than m in an array of n numbers
5. Count how many are equal to m in an array of n numbers
6. Find the index of the value m in an array of n numbers
7. Find the index of the value m in a sorted array of n numbers

POINTERS

Pointers - variables that store a location

1. Write a line of code that declares a pointer to an integer.
2. I have already declared two pointers to integers, x and y, and two integers, i and j.

2a) Write a line of code that assigns x to point to j.

2b) Write a line of code that assigns y to point to i.

2c) Write a line of code that places the number 8 into j. x is the only variable that can be on the right side of the assignment operator.

2d) Write a line of code that points x to i. y is the only variable that can be on the right side of the assignment operator.

1. Write a function, calc\_stats, that returns several values. It takes an array (and a length) and calculates the average, median, and standard deviation.

3a) Write the prototype of this function.

3b) Write it in such a way that the values in the variables in the caller's space are changed (rather than only the inputs to the function).

3c) Write code in main that does everything necessary to use calc\_stats properly.