CS 240 - Homework 2

Assigned: Monday, 1.30.17	Due: Monday, 2.6.17, 4:00pm

Make a subdirectory "hw2" of your cs240 folder for this assignment.

Copy all files from /courses/cs240/S17/jmcurran/GROUP/hw2 to your hw2 subdirectory.
(These are test files and reference files that you will use later in this assignment.)

notes on visitype.c

The C compiler will concatenate all the quoted strings in setting the asciiname[] array contents, producing one long string.

Note that the %s format means "string" form.
That format expects a POINTER to the string, which is supplied by the & in front of asciiname[4*c].
For now, take it on faith that this will work. We will cover it in a few weeks.

morse.c

In class we talked about different number systems and the ASCII character set. You've been provided a file called visitype.c, which we also talked about in class.

Using the approach in visitype, write code for a Morse code typewriter (each symbol should be a small string concatenated into a larger string and printed with %s). When a user types a letter on their keyboard, the Morse code equivalent should print to stdout, one character per line (with blank lines for spaces and newline characters).

Your typewriter should work with lower case letters and no other symbols. If a non-lowercase-letter character is input, your program should ignore it. It should process input until it sees EOF.

Morse code

a	.-	g	--.	m	--	t	-
b	-...	h	....	n	-.	u	..-
c	-.-.	i	..	o	---	v	...-
d	-..	j	.---	p	.--.	w	.--
E	.	k	-.-	q	--.-	x	-..-
f	..-.	l	.-..	r	.-.	y	-.--
				s	...	z	--..

In the notes section of your file comment, plan your approach before writing any code. You'll need to consider how many characters are required for the largest Morse code "character" (sequence of dots and dashes representing one letter), which numbers represent letters in ASCII code, and how to make your output match the description above.

By default on a Linux system, the terminal will buffer all input until enter is pressed. Running your program will give you an empty line, and you can type one or more characters and then press enter to see the output. The program should stop when it encounters an EOF condition on stdin (which can be entered from the keyboard by typing <CTRL-D>). You can also test it with the provided test file (morse.in):

```
./morse <morse.in
```

asciiaverage.c

The requirements for this program are included in the provided stub.

bmi.c

The requirements for this program are included in the provided stub.

ordered.c

The requirements for this program are included in the provided stub.

Note that we assume valid input (that is, a series of single-digit numbers separated by spaces).

DELIVERABLES

Your hw2 directory should contain the following files upon completion of this assignment:

- morse.c
- asciiaverage.c
- bmi.c
- ordered.c

Please remove all other files (including any backups or test input files) before the deadline.

REMINDER

I will be available after class on Wednesday as long as needed to answer questions.

I am also available via email any time.

Start now! It's better to get stuck early and talk to me. If I get a flood of emails Sunday night, I may not have time to answer them in a timely fashion.

HOW TO COPY THE hw2 DIRECTORY

Review the notes from lecture 1 (basic UNIX commands) to make sure you understand what the following commands are doing.

1. SSH/log in to your UNIX account. Upon logging in, you will be in your home folder:
   /home/username
2. Use the link you created in hw1 to navigate to the group folder:
   cd cs240_group

   If your link is not working, you can do this using the absolute path:
   cd /courses/cs240/s17/jmcurran/GROUP
3. Use the copy utility to copy the folder to your cs240 directory:
   cp -R hw2 /home/username/cs240/hw2
4. Return to your home directory:
   cd

   and then navigate to your cs240 folder:
   cd cs240
5. Use list to list the contents of the cs240 directory:
   ls

   You should see a hw2 folder containing the hw2 stub files.