# CS265: Advanced Programming Tools and Techniques

Spring 2022

***Lab #4 – C Programming Language***

**Before you start**

* Leverage the man or help utilities to access the manual pages for commands and really learn how commands work
* All C functions are described in section 3 of the man pages, so you might find this command helpful

man -s3 printf

**Setting Up the Lab**

* Make an appropriate subdirectory for this lab and go there
* Ensure your directory restricts access to other students.

$ mkdir cs265 (if you do not have it already, cd if you do)

$ chmod go-rwx cs265 (if you have not done this already)

$ cd cs265

$ mkdir lab4

$ chmod go-rwx lab4

$ cd lab4

## Hint

If you need to use arrays, you can assume arrays of a given size, say 100 characters.

## Part 1

Write a C program, named **lab4\_1.c**, that asks the user to enter a US dollar amount and then shows how to pay that amount using the smallest number of $20, $10, $5 and $1 bills:

Enter a dollar amount: 93

$20 bills: 4

$10 bills: 1

$5 bills: 0

$1 bills: 3

## Part 2

Write a C program, named **lab4\_2.c**, that accepts a date from the user in the form mm/dd/yyyy and then displays it in the form yyyymmdd:

Enter a date (mm/dd/yyyy): 02/17/2011

You entered the date: 20110217

## Part 3

In the SCRABBLE crossword game, players form words using small tiles, each containing a letter and a face value. The face value varies from one letter to another, based on the letter’s rarity. Here are the face values: 1: AEILNORSTU, 2: DG, 3:BCMP, 4:FHVWY, 5:K, 8:JX,10:QZ. Write a C program, named **lab4\_3.c**, that computes the value of a word by summing the values of its letters.

Enter a word: pitfall

Scrabble value: 12

Your program should allow any mixture of lower-case and upper-case letters in the word.

**Hint**: Use the toupper library function.

**What to submit**

Zip your C programs lab4\_1.c, lab4\_2.c, lab4\_3.c and submit your zip file **lab4.zip**