Fall 2020 COP 2930 Exam 1 Review

Exam Format

Note: All times listed are in Eastern Standard Time (EST).

Date: Thursday, October 8, 2020
Time: 10:30 am - 11:45 am
Location: Online

The exam will be two timed assignments on Webcourses.

First assignment (Exam 1 Part A) will be released at 10:30 am on 10/8/2020 and will be due at 11:00 am on the same day with a late due time of 11:10 am.

The second assignment (Exam 1 Part B) will be released at 11:00 am on 10/8/2020 and will be due at 11:45 am on the same day with a late due time of 11:55 am.

You may use your course notes to aid you with your exam. My questions will test for understanding though, so please don't copy things you've seen (code segments) verbatim.

For each assignment, you must submit a single file of one of the following types: .txt, .doc, .docx or .pdf. with your responses to each question for that assignment. It is strongly recommended that you just directly type your answers in a text file or Word document to avoid spending time scanning to .pdf.

If an assignment is not received, it automatically gets a 0. Thus, it's extremely important to submit BEFORE the late due time. My experience has shown that you must start trying to submit a minimum of 5 minutes before the late due time. It's not worth it to cut it so close in time. There is no penalty to submit after the due time but before the late due time. The due time is intended to be your warning to start submitting.

If you are an SAS student, you'll receive appropriately adjusted times.

Key Topics Covered So Far:

Output
Input
Variables and the Assignment Statement
Arithmetic Expressions
Random Number Generation
Turtle
If Statement
Loops
Nested Loops

Here is a list of things you should know how to do in each topic:

Output

How to print a literal string.
How to print a variable.
How to use a single print to print both a literal string and variable values.
How to use sep.
How to use end.

Input

How to read in a variable into a string.
How to read in a variable into an int.
How to read in a variable into a float.
How to create a prompt with both a string and the value of a variable via string concatenation (+) and the str function.

Variables and the Assignment Statement

Naming rules for variables
What makes a variable name
How to decide what type to make a variable
When you are allowed to use a variable on the right hand side of an assignment statement
How to trace through an assignment statement and how it's different than = in math class.

Arithmetic Expressions

Rules for order of operations
Use of parentheses
The difference between integer division (//) and real number division (/)
How mod (%) works and its importance

Random Number Generation

Know how to generate a random number in a given range.

Turtle

Know now to move the turtle forward and backward.
Know how to turn the turtle.
Know how to pick the pen up and put it down.
Know how to set a position.
Know how to change a pencolor.
Know how to fill a shape.

If Statement

Version 1- Just an if
Version 2 - if with an else
Version 3 - if with elif clauses but no else clause
Version 4 - if with elif clauses and an else clause
Importance of indenting
Difference between a single if-elif-else statement and separate if statements.
The use of and, or.
The use of not.
Use of nested if statements and their general design and when they are appropriate to use.

For Loop

Version 1: for i in range(n):
Version 2: for i in range(a,b):
Version 3: for i in range(s,e,skip):
How to utilize loop index inside of the loop
How to use if statements in a loop adjusting behavior based on loop index.
How to use accumulator variables effectively. (Define before, update each iteration.)

While Loop

General syntax
Knowing which situations a while loop is better than for and vice versa

Nested Loops

Know what it means for loops to be nested and how to trace through nested loops
Know the difference between nested loops and two separate loops.
Importance of indenting.
Loop pattern of (i=1 to n, j=1 to n)
Loop pattern of (i=1 to n, j=1 to i)
Using loops to print out various patterns.
Using extra variables to reduce math for printing out patterns.