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## CS 301 - Fall 2017
Instructor: Laura Hobbes LeGault

Practice Midterm 1

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I've included some examples of each of the following types of questions on the exam. **Be sure to read through every question completely.**

The questions on the exam are as follows:

1. **Dual Choice** — worth 1 point each.

2. **Multiple Choice** — worth 2 points each. Choose the *best* answer.

3. **Fill-in-the-blank** — each blank is worth 3 points each. Be complete.

You may not use notes or books, your neighbors, or calculators or any other electronic devices on this exam. **Turn off and put away** your cell phone, pager, Inspector Gadget Watch, etc. now.

**Disclaimer:** the following are provided for your reference only, and the inclusion of information here does not guarantee it will be used on the exam.

## Operator Precedence Table:

| level | operator | description |
|---|---|---|
| | ( <expression> ) | grouping with parentheses |
| higher | x[index:index] | slicing |
| | x[index] | indexing |
| | * / % | multiplicative |
| | + - | additive |
| | < <= > >= | relational |
| | == != | equality |
| | not | logical not |
| | and | logical and |
| lower | or | logical or |
| | = += *= | (compound) assignment |

## Built-in functions:

| | |
|---|---|
| raw_input(p) | Prompts the user for input using p and returns the user's input as a string. |
| len(s) | Return the length (the number of items) of an object. |
| type(x) | Returns the *data type* of the value stored in x |

## Constants and functions from the math module:

| | |
|---|---|
| math.sqrt(x) | Returns the square root of x as a float. |
| math.pi | The mathematical constant $\pi = 3.141592...$ |

## String constants:

| | |
|---|---|
| string.ascii_lowercase | The lowercase letters 'abcdefghijklmnopqrstuvwxyz'. |

## Functions from the random module:

| | |
|---|---|
| random.randint(a,b) | Return a random integer $N$ such that a <= N <= b. |

## A or B: Terminology

Select the option which makes the statement *true*.

1. A _____ is an example of an *output* device. (1)

      A. monitor

      B. mouse

2. A file with the extension _____ contains Python source code. (1)

      A. `.txt`

      B. `.py`

## True or False: Evaluating boolean expressions

3. `( 5 / 6 ) == 0` (1)

      A. True

      B. False

4. `not ( 1 == 2 or 2 > 1 )` (1)

      A. True

      B. False

## Multiple Choice: Reading code

5. What is the *data type* of `x` after the following line of code executes? (2)

```
x = int( float( "57.25" ) * 14 ) > 800
```

      A. `int` (integer)

      B. `float`

      C. `str` (string)

      D. `bool` (boolean)

6. What is the *output* produced after the following code is executed? (2)

```
count = 3     # the number thou shalt count

if count > 1:
   print "one"
   count = count + 1

if count <= 3:
   print "two"

else:
   print "five"
```

    A. one  
       five

    B. one  
       two

    C. one  
       two  
       five

    D. five

7. How many times does the following loop execute? (Hint: trace through the code.) (2)

```
number_1 = 17
number_2 = 4

while number_1 != 0:
   number_1 = number_1 % number_2
   number_2 = number_2 - 1
```
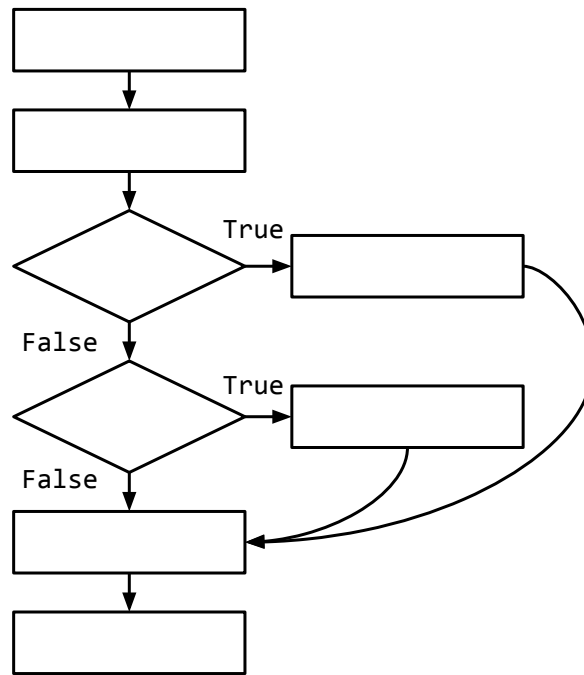
    A. 4

    B. 3

    C. 2

    D. 1

8. Which code structure is depicted by this flow chart? Recall that the ◇ shape represents   (2)
   a decision and the □ shape represents a normal code statement.



    A. `while` loop

    B. two (2) `if` statements

    C. `if-else` statement

    D. `if-elif` statement

    

## Fill-in-the-blank: Writing code

The following functions are missing lines. Fill in the blanks to make the functions bhave as the comments indicate. Each blank is worth **3 points**, and there are a total of 2 questions in this practice test (question 9 has two blanks, with partial credit).

9.    `def` _____

      `""" Given the function call below, finish this function """`

      _____ `len( str(x) )`         (3)

    `print my_function(14)`     `# prints ONLY the number 2`

10. For full credit, use `x` in your output without causing any errors.

    `x = 37.2`                     `# output:  37`

    `print "My number is " +` _____ `# expression with x`     (3)