Practice midterm exam

February 3, 2013

Name: ____________________________________________________________

CSE Net ID (username): _____________________________________________

UW Net ID (username): ______________________________________________

This exam is closed book, closed notes. You have 50 minutes to complete it. It contains 14 questions and 10 pages (including this one), totaling 100 points. Before you start, please check your copy to make sure it is complete. Turn in all pages, together, when you are finished. Write your initials on the top of ALL pages (in case a page gets separated during test-taking or grading).

Please write neatly; we cannot give credit for what we cannot read.

Good luck!
1 Execute Python expressions

Execute each of the following expressions.

- If it executes without an error, then:
  - **value** state the value that it evaluates to

- If it suffers an error during evaluation:
  - **error** describe the error (in one phrase — a brief explanation in your own words)
  - **frame** state the name of the current environment frame: “global” or a function name
  - **operator** state the operator that caused the error
  - **arguments** state the values to which the operator was being applied

Your answer will contain either part “value”, or parts “error”, “frame”, “operator”, and “arguments”.

1. \((4.0 + 5) \times 6\)

   **value**
   
   **error**
   
   **frame**
   
   **operator**
   
   **arguments**

2. \(\text{len} (\text{str}(5 \times 2)) + "10")\)

   **value**
   
   **error**
   
   **frame**
   
   **operator**
   
   **arguments**
Execute Python statements

Execute each of the following code snippets, just as if they were written in a program. (Each one is a sequence of statements.) Your answer to each question contains up to 5 parts.

**output** write any output that it prints (before any error). This part might be blank. If it does not print any output.

If there is an error during execution:

**error** describe the error (in one phrase — a brief explanation in your own words)

**frame** state the name of the current environment frame: “global” or a function name

**operator** state the operator that caused the error

**arguments** state the values to which the operator was being applied

Your answer will contain either only part “output”, or parts “output”, “error”, “frame”, “operator”, and “arguments”. 

3. a = [1, 2]
b = []
b = b + a
b = b + a
a.append(3)
print b

output

error

frame

operator

arguments

4. a = [1, 2]
b = []
b.append(a)
b.append(a)
a.append(3)
print b

output

error

frame

operator

arguments
5. lst = [1, 2, 3]
   myvar = lst[0]
   lst[0] = 18
   print lst
   print myvar

   output

   error
   ___________

   frame
   ___________

   operator
   ___________

   arguments
   ___________

6. myvar = 18
   lst = [myvar, 2, 3]
   myvar = 22
   print lst
   print myvar

   output

   error
   ___________

   frame
   ___________

   operator
   ___________

   arguments
   ___________
7. `plane = ("Passengers", "Luggage")
    plane[1] = "Snakes"
    print plane

    output

    error
    ____________
    frame
    ____________
    operator
    ____________
    arguments
    ____________

8. `numb3rs = ([1, 2, 3], [4, 5, 6])
    numb3rs[0][2] = 0
    print numb3rs

    output

    error
    ____________
    frame
    ____________
    operator
    ____________
    arguments
    ____________
9. for x in [1, 2]:
   for y in [3, x]:
       print x, y

output

error  
frame  
operator  
arguments  

10. bar = 1
    def foo():
        bar = 2
        foo = 3
        return bar
    foo()
    print foo()
    print bar

output

error  
frame  
operator  
arguments  

11. total = 0

    def sum1(n):
        total = 0
        for i in range(n):
            total = total + i
        return total

    def sum2(n):
        total = 0
        for i in range(n):
            total = total + i
        print total

    print sum1(5)
    print total
    print sum2(5)
    print total

    output

    error
    _______________

    frame
    _______________

    operator
    _______________

    arguments
    _______________
12. def f1(n):
    print "A"
    return 2

    print "B"

    def f2():
        return 1
    print "C"

    print f1(f2())

    output

    error
    frame
    operator
    arguments

13. x = 22
    def reset_x():
        x = 0
    reset_x()

    print x

    output

    error
    frame
    operator
    arguments
14. $a = [42, 39, 123]$
   $b = \text{sorted}(a, \text{reverse}=\text{True})$
   $a[0] = b$
   $b[0] = 7$
   $b.\text{sort}()$
   \text{print } a$

   \textbf{output}$

   \textbf{error}  \\
   \textbf{frame}  \\
   \textbf{operator}  \\
   \textbf{arguments}$