Week 06: Problem Set

Due: 2023-02-24 23:59:00

Description: Chapter 5 problem set Self Grade: 0 of 17 = 0.0%

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Questions

Not yet graded

Q-2: What will the following Python program print out? (Given that each word will actually print on a new line)

```
def fred():
    print("Zap")

def jane():
    print("ABC")

jane()
fred()
jane()
```

- **A. Zap ABC jane fred jane**
- **B. Zap ABC Zap**
- **C. ABC Zap jane**
- **D. ABC Zap ABC**
- **E. Zap Zap Zap**

Check Me Compare me

✓ Correct! jane() fred() jane() will print ABC Zap ABC.

Activity: 5.14.2 Multiple Choice (functEx_2)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx_2)

Not yet graded

p9-1: What is the purpose of the “def” keyword in Python?

- A. It is slang that means "the following code is really cool"
- B. It indicates the start of a function
- C. It indicates that the following indented section of code is to be stored for later
- D. b and c are both true
- E. None of the above

Check Me Compare me

✓ Correct! def indicates the start of a function and that the following code is to be stored for later as a function object.

Activity: 5.14.1 Multiple Choice (functEx_1)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx_1)

Not yet graded

Q-3: What value is printed when the following code is executed?

```
name = "Jane Doe"
def myFunction(parameter):
    value = "First"
    value = parameter
    print (value)

myFunction("Second")
```

- ○ **A. value**
- ◉ **B. Second**
- ○ **C. parameter**
- ○ **D. First**
- ○ **E. Jane Doe**

Check Me | Compare me

✓ Correct! "value" is assigned to the value of parameter which is "Second", so that's what will print.

Activity: 5.14.3 Multiple Choice (functEx_3)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx_3)

Not yet graded

p9-5: Consider the following Python code. Which of the following best reflects the order in which these lines of code are processed in Python? Note that line numbers are included on the left.

```
 1  def pow(b, p):
 2      y = b ** p
 3      return y
 4
 5  def square(x):
 6      a = pow(x, 2)
 7      return a
 8
 9  n = 5
10  result = square(n)
11  print(result)
```

- ○ A. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
- ○ B. 1, 2, 3, 5, 6, 7, 9, 10, 11
- ○ C. 9, 10, 11, 1, 2, 3, 5, 6, 7
- ○ D. 9, 10, 5, 6, 1, 2, 3, 6, 7, 10, 11
- ◉ E. 1, 5, 9, 10, 5, 6, 1, 2, 3, 6, 7, 10, 11

Check Me | Compare me

✓ Correct! Python starts at line 1, notices that it is a function definition and skips over all of the lines in the function definition until it finds a non-empty line that it no longer included in the function (line 5). It then notices line 5 is also a function definition and again skips over the function body to line 9. On line 10, it notices it has a function to execute, so it goes back and executes that function. That function includes another function call. It returns from the function call and completes the assignment in line 6. Then, it returns the result of line 7 and completes the assignment in line 10. Finally, it will go to line 11 after "square" and the assignment are complete.

Activity: 5.14.5 Multiple Choice (functEx_5)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx_5)

Not yet graded

p9-6: Consider the following Python code. What does this function print? Note that line numbers are included on the left.

```
1  def pow(b, p):
2      y = b ** p
3      return y
4
5  def square(x):
6      a = pow(x, 2)
7      return a
8
9  n = 5
10 result = square(n)
11 print(result)
```

- (●) A. 25
- ( ) B. 5
- ( ) C. 125
- ( ) D. 10

Check Me | Compare me

✓ Correct! The function "square" returns the square of its input (via a call of the "pow" function).

Activity: 5.14.6 Multiple Choice (functEx_6)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx_6)

Not yet graded

Q-9: Consider the code below. Line 1 is called...

```
1def printWeather():
2    print("It is sunny!")
```

- (●) **A. the function header**
- ( ) **B. the function body**
- ( ) **C. the function definition**
- ( ) **D. the function named**

Check Me | Compare me

✓ Correct! The first line of a function definition is the header.

Activity: 5.14.9 Multiple Choice (functEx_9)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx_9)

Not yet graded

Q-10: Consider the code block below. What happens when you run this program?

```
repeat_lyrics()

def repeat_lyrics():
    print_lyrics()
    print_lyrics()

def print_lyrics():
    print("I'm a lumberjack, and I'm okay.")
    print('I sleep all night and I work all day.')
```

- ○ **A. The lyrics print like normal.**
- ○ **B. We get a TypeError.**
- ◉ **C. We get a NameError.**
- ○ **D. The program compiles but nothing prints.**

Check Me | Compare me

✓ Correct! You get a NameError when you call a function before it is defined.

Activity: 5.14.10 Multiple Choice (functEx_10)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/Exercises.html#functEx_10)

Not yet graded

Fix the 4 errors so the following code runs and returns the perimeter of a rectangle. For example, `recPerimeter(10, 20)` should return `60`.

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```
1 def recPerimeter(length, width):
2     perimeter = 2 * (length + width)
3     return perimeter
4
5 # Example usage:
6 result = recPerimeter(10, 20)
7 print(f"The perimeter of the rectangle is: {result}")
8
9
```

Activity: 5.16.1 ActiveCode (funct-ex-perimeterq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct-ex-perimeterq)

Not yet graded

Fix the 5 errors so the following code runs and returns the area of a square. For example, `squareArea(10)` should return `100`.

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```
1 def squareArea(sideLength):
2     area = sideLength * sideLength
3     return area
```

```
result = squareArea(10)
print(f"The area of the square is: {result}")


```

Activity: 5.16.3 ActiveCode (funct_ex_squareq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct_ex_squareq)

Not yet graded

Fix the errors on line 2 so the function `nameAndAge` returns the string "My name is `nameString` and I am `ageInt` years old." For example, `nameAndAge("John", 18)` should return `"My name is John and I am 18 years old."`

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```
def nameAndAge(nameString, ageInt):
    return f"My name is {nameString} and I am {ageInt} years old."

# Example usage:
print(nameAndAge("John", 18))


```

Activity: 5.16.7 ActiveCode (funct_ex_nameq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct_ex_nameq)

Not yet graded

Change the code below to create a function `tripCost` that calculates the cost of a trip. It should take the `miles`, `milesPerGallon`, and `pricePerGallon` as parameters and should return the cost of the trip. For example, `tripCost(100, 25, 2.24)` should return `8.96`.

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```
def tripCost(miles, milesPerGallon, pricePerGallon):
    numGallons = miles / milesPerGallon
    total = numGallons * pricePerGallon
    return total

# Example usage:
miles = 100
milesPerGallon = 25
pricePerGallon = 2.24

cost_of_trip = tripCost(miles, milesPerGallon, pricePerGallon)
print(f"The cost of the trip is: {cost_of_trip}")

```

Activity: 5.16.6 ActiveCode (funct_ex_tripq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct_ex_tripq)

Not yet graded

Use a built-in function to print out the length of `sentence_a` . Note: there are three extra code blocks.

Drag from here

```
1 print(sentence_a)
2 sentence_a = I love Python!
3 length_sentence_a =
  length(sentence_a)
```

Drop blocks here

```
4 sentence_a = "I love Python!"
5 length_sentence_a = len(sentence_a)
6 print(length_sentence_a)
```

Check Reset Help me

Parsons (functEx1muc)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx1muc)

Not yet graded

Create a function called `average` , which finds the average of two numbers. Note: there are two extra code blocks, and watch your indentation!

Drag from here

```
1 def average(num):
2 sum = num1 + num2 / 2
```

Drop blocks here

```
3 def average(num1, num2):
4 sum = num1 + num2
5 sum = sum / 2
6 return sum
```

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Parsons (functEx4muc)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx4muc)

Not yet graded

Create a function called `swapValues` , which takes two values and swaps them. It then returns val1. Note: there is an extra code block, and watch your indentation!

Drag from here

```
1  val1 = val2
   val2 = val1
```

Drop blocks here

```
2  def swapValues(val1, val2):
3      temp = val2
4      val2 = val1
5      val1 = temp
6      return val1
```

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Parsons (functEx5muc)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx5muc)

Not yet graded

Create a function called `compare` which returns whichever is greater of its two parameters. If they are equal, it returns `param2` . Note: there are two unused code blocks.

Drag from here

```
1  if param1 == param2:
2  Def compare(param1, param2):
```

Drop blocks here

```
3  def compare(param1, param2):
4      if param1 > param2:
5          return param1
6      else:
7          return param2
```

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Parsons (functEx7muc)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx7muc)

Not yet graded

The following code creates three functions that use Python's math module to calculate geometric equations. First, create a function called `distance` which finds and returns the distance between two coordinates using the distance formula: d = √((x_2 - x_1)² + (y_2 - y_1)²). Then, create a function called `area` which returns the area of a circle given its radius using the formula: A = πr². Finally, create a function called `area2` which uses the `distance` function to find the radius and the `area` function to find the circle's area. Watch your indentation!

Drag from here

Drop blocks here

```
import math
def distance(x1, y1, x2, y2):
    dx = x2 - x1
    dy = y2 - y1
    dsquared = math.pow(dx, 2) + math.pow(dy, 2)
    result = math.sqrt(dsquared)
    return result
def area(radius):
    b = math.pi * math.pow(radius, 2)
    return b
def area2(xc, yc, xp, yp):
    radius = distance(xc, yc, xp, yp)
    result2 = area(radius)
    return result2
```

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Parsons (functEx12muc)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/mixedupcode.html#functEx12muc)

Not yet graded

Change the code so that `areaTriangle` takes parameters for the base and height of a triangle and computes its area. Then, write code to call the function and print the result. For example, `areaTriangle(12,45)` should return `270`.

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```
def areaTriangle(base, height):
    return (base * height) / 2
base_length = 12
height_length = 45
result = areaTriangle(base_length, height_length)
print(f"The area of the triangle with base {base_length} and height {height_length} is:
```

8

Activity: 5.16.4 ActiveCode (funct_ex_triangleq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/functions/WriteCode.html#funct_ex_triangleq)

You have marked this assignment Finished. Click to mark it In Progress

This assignment is graded and is no longer accepting submissions. You can still do the work, but it is up to your instructor whether they will accept it or not.