Class Assignment: Lists, Functions, and Methods
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Part 1: Lists

Section A: Creating Lists (10 points)

Write the following lists and store them in the given variable names:
1.Create a list called my_numbers containing the numbers 10, 20, 30, 40, 50
Code: my_number = [10, 20, 30, 40, 50]

2.Create a list called fruits containing "apple", "banana", "orange", "grape"
Code: fruits = ["apple", "banana", "orange", "grape"]

3.Create a list called mixed_data containing the number 25, the word "hello", and the boolean value True
Code: mixed_data = [25, "hello", True]

Section B: Accessing List Items (10 points)

Given this list: colors = ["red", "blue", "green", "yellow", "purple"]
Write the code to:
1.Get the first color
Code: colors = ["red", "blue", "green", "yellow", "purple"]
first_color = colors [0]
print(first_color)
Console: red

2.Get the third color
Code: colors = ["red", "blue", "green", "yellow", "purple"]
third_color = colors [3]
print(third_color)
Console: yellow

3.Get the last color
Code: colors = ["red", "blue", "green", "yellow", "purple"]
third_color = colors [3]
print(third_color)
Console: Purple

4.What index number is "blue" at?
Ans: Index 1

5.What will colors[0] return?
Ans: Red

Section C: Zero Indexing Understanding (10 points)

1. If a list has 8 items, what index is the first item at?
Ans: Index 0

2. If a list has 8 items, what index is the last item at?
Ans: Index 8

3. Given days = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"], what is at index 4?
Code: Index Fri

4.In the same day's list, what index would you use to get "Wed"?
Ans: Index 2

5. Why does Python start counting at 0 instead of 1? (Write your understanding in 1 - 2 sentences)
Ans: Python starts counting from 0 instead of 1 because Python uses zero-based indexing, meaning the first element of a list has an index of 0, representing its position as zero steps from the start of the list.

Part 2: Functions

Section A: Using Built - in Functions (15 points)

Write the code to solve these problems using the appropriate functions:
1. Find the absolute value of -45
Code: abs_value = abs(-45)
print(abs_value)
Console: 45

2. Round the number 7.89 to the nearest integer
Code: round_number = round(7.89)
print(round_number)
Console: 8

3.Find the maximum value between 23 and 67
Code: maximum = max(23,67)
print(maximum)
Console:67

4.Find the minimum value between -5, 0, and 5
Code: minimum = min(-5,0,5)
print(minimum)
Console: -5

5.What is the difference between round(3.7) and round(3.2)? Show the results
Code: print(round(3.7))
print(round(3.2))
Console: 4 and 3

Section B: Understanding Function Syntax (10 points)

For each line below, identify: (a) the function name, (b) the argument(s)

1.abs(-100)
   a. Function name: abs
   b. The arguments: -100

2.max(4, 9, 2)
   a. Function name: max
   b. The arguments: 4,9,2

3.round(45.67)
   a. Function name: round
   b. The arguments: 45.67

4.min(0,-10)
   a. Function name: min
   b. The arguments: 0,-10

Section C: Import Statement (5 points)

1.Write the general format for importing a function from a library
Code: from library import function

2.If you wanted to import a function called sqrt from a library called math, what would you write?
Ans: from math import sqrt

Part 3: Methods (30 points)

Section A: String Methods (15 points)

Given the string: message = "hello python"
Write the code to:

1.Convert the message to all uppercase letters
Code: message = "hello python"
print (message.upper())
Console: HELLO PYTHON

2.Convert the message to all lowercase letters
Code: message = "hello python"
print (message.lower())
Console: hello python

3.Count how many times the letter "o" appears
Code:message = "hello python"
print (message.lower())
Console: 2

4.Count how many times the letter "h" appears
Code: message = "hello python"
print (message.count("h"))
Console: 2

Section B: Method vs Function (10 points)

Explain the difference between these two lines of code:

1."test".upper()
2.abs(-5)
Which one is a method and which is a function? How can you tell?

Section C: Understanding Method Syntax (5 points)

In the code "python".count("p"):
1.What is the object?
Ans: “python”
2.What is the method name?
Ans: count
3.What is the argument?
Ans:(“p”)
4.What will this return?
Ans: 1

5.Create a string variable weather = "cold" and convert it to uppercase using a method
Code: temperatures: [-5,0,15,-3,22,-8]
weather = "cold"
print(weather.upper())
Console:COLD

Concept Check
Answer these questions:

1.What symbol is used to create a list?
Ans: []
2.What symbol is used to access an item from a list?
Ans: []
3.What symbol connects an object to its method?
Ans: .
4.Do all methods require arguments inside the parentheses?
Ans: No because Calling methods on strings: Practice with .upper(), .lower(), .count()

5.What's the main difference between typing response.text and response.text()?
Ans: response.text represents attributes which don't use parenthesis and represents properties response.text() represents methods which use parenthesis and perform actions.