
Quiz 1 - DSC 10, Fall 2023

Full Name:

Solutions

PID:

A12345678

Discussion:

A (3PM)

B (4PM)

C (5PM)

Instructions:

- This quiz consists of 4 questions. You have a total of 20 minutes to complete it.
 - Please write **clearly** in the provided answer boxes; we will not grade work that appears elsewhere. Completely fill in bubbles; if we cannot tell which option(s) you selected, you may lose points. For multiple choice questions, select **only one answer**.
 - If your answer is a string, make sure to put it in quotes. If your answer is a float, make sure to include a decimal point.
 - No aids are allowed (no notes, no calculators, and no computers).
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By signing below, you are agreeing that you will behave honestly and fairly during and after this quiz.

Signature:

Version A

Please do not open your quiz until instructed to do so.

Question 1

After a trip to the zoo, Anthony wrote the following block of code.

```
zebra = 5
lion = 4
cow = 1
zebra = zebra * 2
lion = abs(cow - lion)
zebra = zebra + lion ** 2
cow = (zebra + lion) / 2 * lion
```

After running the above block of code, what is the value of cow?

33.0

cow

Question 2

Consider the following four assignment statements.

```
bass = "5"
tuna = 2
sword = ["4.0", 5, 12.5, -10, "2023"]
gold = [4, "6", "CSE", "doc"]
```

a) What is the value of the expression `bass * tuna`?

"55"

`bass * tuna`

b) Which of the following expressions results in an error?

- `int(sword[0])` `float(sword[1])` `int(sword[2])`
 `int(sword[3])` `float(sword[4])`

c) Which of the following expressions evaluates to "DSC10"?

- `gold[3].replace("o", "s").title() + str(gold[0] + gold[1])`
 `gold[3].replace("o", "s").upper() + str(gold[0] + int(gold[1]))`
 `gold[3].replace("o", "s").upper() + str(gold[1] + int(gold[0]))`
 `gold[3].replace("o", "s").title() + str(gold[0] + int(gold[1]))`

Question 3

Consider the following assignment statement.

```
puffin = np.array([5, 9, 13, 17, 21])
```

- a) Provide arguments to call `np.arange` with so that the array `penguin` is identical to the array `puffin`.

```
penguin = np.arange(    )
```

- b) Fill in the blanks so that the array `parrot` is also identical to the array `puffin`.
Hint: Start by choosing y so that `parrot` has length 5.

```
parrot = __ (x) __ * np.arange(0, __ (y) __, 2) + __ (z) __
```

x: , y: , z:

Question 4

Suppose `students` is a DataFrame of all students who took DSC 10 last quarter. `students` has one row per student, where:

- The index contains students' PIDs as strings starting with "A".
- The "Overall" column contains students' overall percentage grades as floats.
- The "Animal" column contains students' favorite animals as strings.

- a) What type is `students.get("Overall")`? If this expression errors, select "this errors."
 float string array Series this errors
- b) What type is `students.get("PID")`? If this expression errors, select "this errors."
 float string array Series this errors

Vanessa is one student who took DSC 10 last quarter. Her PID is A12345678, she earned the sixth-highest overall percentage grade in the class, and her favorite animal is the giraffe.

- c) Supposing that `students` is already sorted by "Overall" in **descending** order, fill in the blanks so that `animal_one` and `animal_two` **both** evaluate to "giraffe".

```
animal_one = students.get(__ (x) __).loc[__ (y) __]
animal_two = students.get(__ (x) __).iloc[__ (z) __]
```

x: , y: , z:

- d) If `students` wasn't already sorted by "Overall" in descending order, which of your answers would need to change?
 Neither y nor z would need to change y only
 Both y and z would need to change z only

Before submitting your quiz, make sure your PID is on the front page and on the top right corner of page 3.