Prep 1 quiz: Python Memory Model

Due Sep 11 at 9:59am **Points** 17 **Questions** 17
Available Sep 7 at 1pm - Sep 11 at 9:59am 4 days **Time Limit** None
Allowed Attempts Unlimited

Instructions

Reminder: this prep is **not for credit**, but we still require that you complete it by the assigned due date!

Link to prep handout:

- https://www.teach.cs.toronto.edu/~csc148h/fall/preps/prep1/handout/prep1.html (https://www.teach.cs.toronto.edu/~csc148h/fall/preps/prep1/handout/prep1.html)

TIP: even though you can submit your answers as many times as you like, you only receive feedback after submitting the whole quiz. You might want to print this quiz so that you can work on paper first, and to keep a good record of your work.

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	7 minutes	16 out of 17
LATEST	Attempt 2	7 minutes	16 out of 17
	Attempt 1	14 minutes	14 out of 17

Correct answers are hidden.

Score for this attempt: **16** out of 17
Submitted Sep 10 at 5:40pm
This attempt took 7 minutes.

Question 1 — 1 / 1 pts

Which of the following data types are immutable?

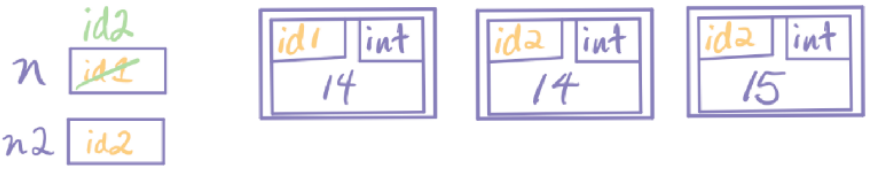
- [ ] list
- [x] bool
- [x] tuple
- [ ] dict
- [x] int
- [x] str

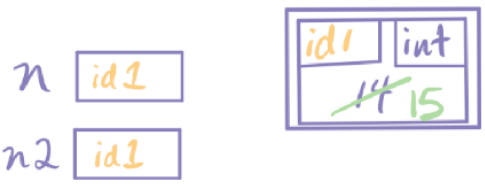
Question 2

1 / 1 pts

Which of the following memory model diagrams correctly represents the state of memory immediately after this code has run?

```
n = 14
n2 = n
n = 15
print(n, n2)
```





Question 3

1 / 1 pts

What is the output of the previous program?

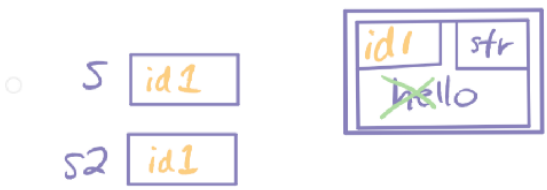
- 14 14
- 14 15
- 15 15
- 15 14

Question 4

1 / 1 pts

Which of the following memory model diagrams correctly represents the state of memory immediately after this code has run?

```
s = 'hello'
s2 = s
s = s[2:]
print(s, s2)
```



Question 5

1 / 1 pts

What is the output of the previous program?

- hello hello
- ello hello
- **llo hello**
- llo llo
- hello llo

Question 6

1 / 1 pts

Suppose we have two variables.

We use the operator is to determine whether they refer to the exact same object, whereas we use the operator == to compare the values/content stored in the objects they refer to.

Note about answer format: enter just the operator you would use in Python code, without any spaces or quotation marks.

Answer 1:

is

Answer 2:

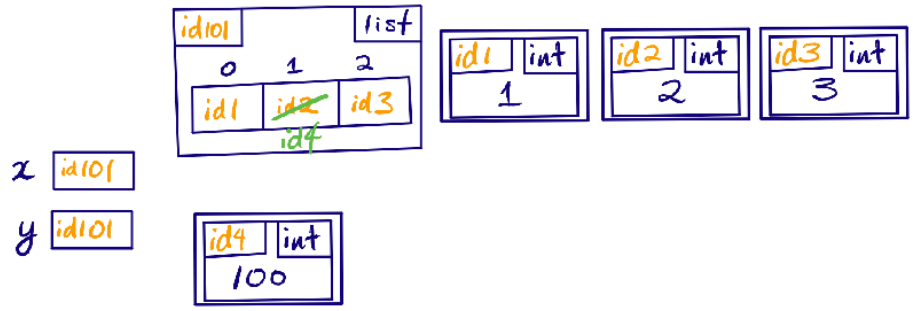
==

Question 7

1 / 1 pts

Which of the following memory model diagrams correctly represents the state of memory immediately after this code has run?

```
x = [1, 2, 3]
y = x
y[1] = 100
print(x, y)
```



Question 8

1 / 1 pts

What is the output of the previous program?

- `[1, 100, 3] [1, 100, 3]`
- `[1, 100, 3] [1, 2, 3]`

- `[1, 2, 3] [1, 100, 3]`

Question 9

1 / 1 pts

In the following interaction with the Python shell, what is the output of the final expression?

```
>>> lst = [1, 3]
>>> lst_id = id(lst)
>>> lst.append(4)
>>> id(lst) == lst_id
```

- False
- Cannot be determined from the information given
- True

Question 10

1 / 1 pts

In the following interaction with the Python shell, what is the output of the final expression?

```
>>> lst = [1, 3]
>>> lst_id = id(lst)
>>> lst = [2, 3]
>>> id(lst) == lst_id
```

- True
- False

Cannot be determined from the information given

Question 11

1 / 1 pts

In the following interaction with the Python shell, what is the output of the final expression?

```
>>> a = (1, 3)
>>> b = a
>>> id(b)
10915424
>>> a = (1, 4)
>>> id(a)
```

not 10915424, but the exact value cannot be determined from the information given

10915424

Question 12

1 / 1 pts

Suppose we have run the following code

```
lst1 = [1, 2, 3]
lst2 = [1, 2, 3]
lst3 = lst2
```

What is the value of each of these expressions?

lst1 == lst2 True

lst1 == lst3	True
lst2 == lst3	True
lst1 is lst2	False
lst1 is lst3	False
lst2 is lst3	True

Question 13

1 / 1 pts

What is the output of the following program?

```
one = [0, 1, 2, 3, 4, 5, 6, 7]
two = one
one = one[1:5]
print(one, two)
```

- [1, 2, 3, 4] [0, 1, 2, 3, 4, 5, 6, 7]
- [1, 2, 3, 4] [1, 2, 3, 4]
- [0, 1, 2, 3, 4, 5, 6, 7] [0, 1, 2, 3, 4, 5, 6, 7]

Question 14

1 / 1 pts

What is the output of the following program?

```
a = [1, 2, 3, 4, 2, 9, 6]
b = [1, 2, 3, 4, 2, 9, 6]
a.remove(2)
print(a, b)
```

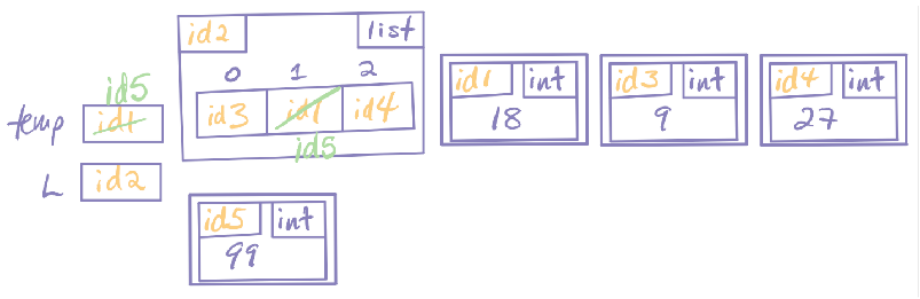
- [1, 3, 4, 2, 9, 6] [1, 3, 4, 2, 9, 6]
- [1, 3, 4, 9, 6] [1, 2, 3, 4, 2, 9, 6]
- [1, 3, 4, 9, 6] [1, 3, 4, 9, 6]
- [1, 3, 4, 2, 9, 6] [1, 2, 3, 4, 2, 9, 6]

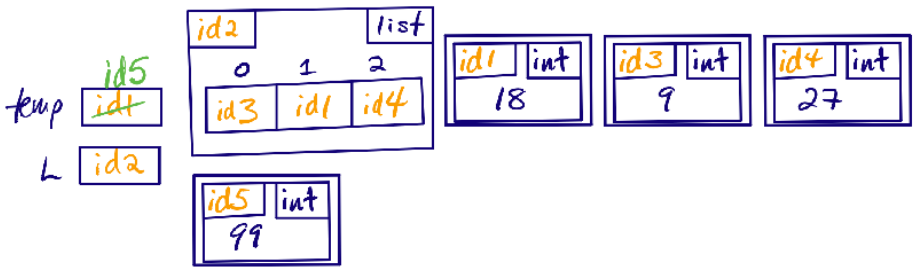
Question 15

1 / 1 pts

Which of the following memory model diagrams correctly represents the state of memory immediately after this code has run?

```
temp = 18
L = [9, temp, 27]
temp = 99
print(L)
```





Question 16

1 / 1 pts

What is the output of the previous program?

- [9, 99, 27]
- [9, 18, 27]

Incorrect

Question 17

0 / 1 pts

What is the output of this code?

```
nested_list = [[1, 2], [3, 4]]
second_list = nested_list[1]
second_list[1] = -1
first_element = nested_list[0][0]
first_element = -1
print(nested_list[0][0], nested_list[1][1])
```

- -1 4
- 1 4
- 1 -1
- -1 -1

Quiz Score: **16** out of 17