

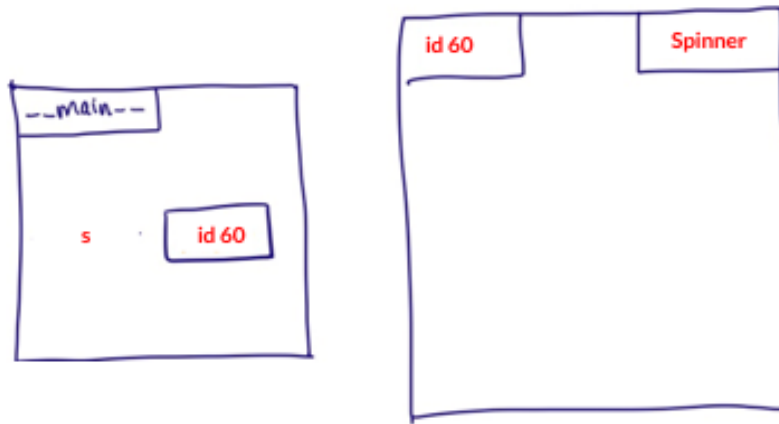
# CSC148 Worksheet 3 Solution

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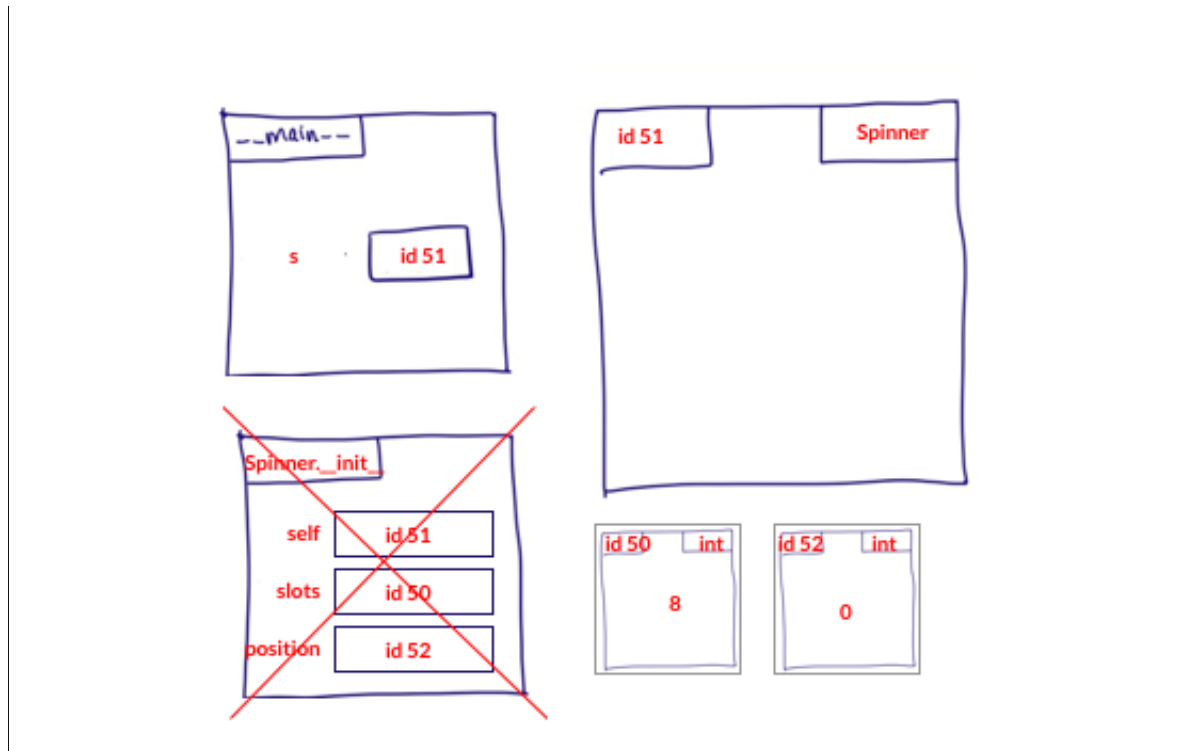
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## Question 1

- i. The memory diagram for this code is the following



Correct Solution:



## Notes:

- Noticed that professor assigns id in order of execution.
- Is there a source or tutorial where this concept can be practiced? I feel super shaky about the concepts of memory model :(.
- Learned that attribute types in an object can be declared as following

```

1  from datetime import date
2
3
4  class Tweet:
5      """A tweet, like in Twitter.
6
7      === Attributes ===
8      content: the contents of the tweet.
9      userid: the id of the user who wrote the tweet.
10     created_at: the date the tweet was written.
11     likes: the number of likes this tweet has received.
12     """
13     # Attribute types
14     userid: str
15     created_at: date
16     content: str
17     likes: int
18 
```

- Learned that attribute types doesn't create variables on initialization.

- ii. The initializer of Spinner class creates variables 'slots' and 'position' at global level

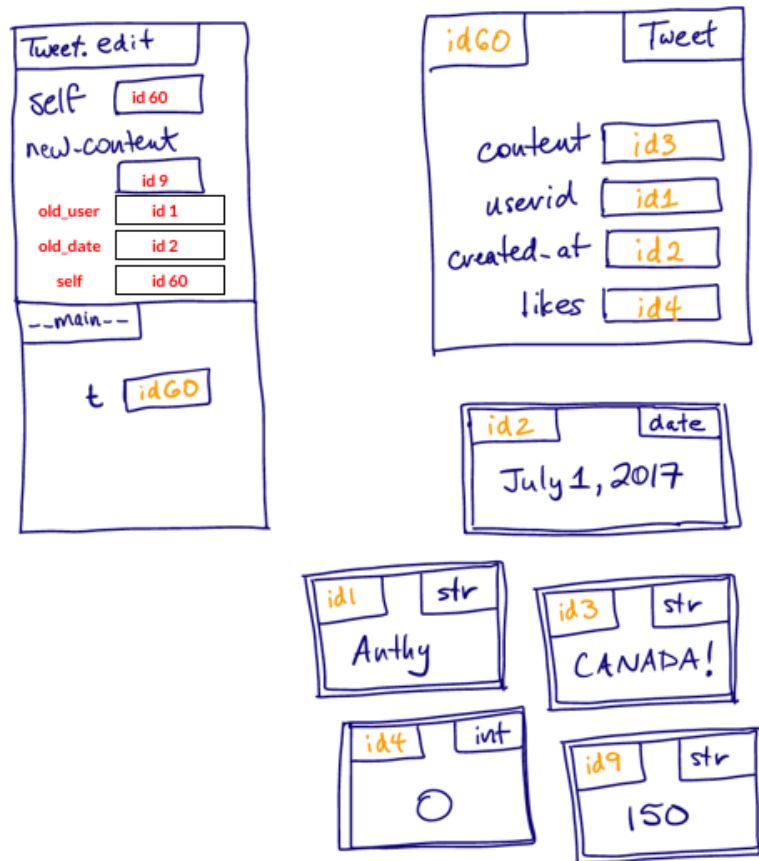
**Correct Solution:**

The initializer of Spinner class creates variables 'slots' and 'position' at **local level within the method**.

- iii. AttributeError is raised when doctest is run.

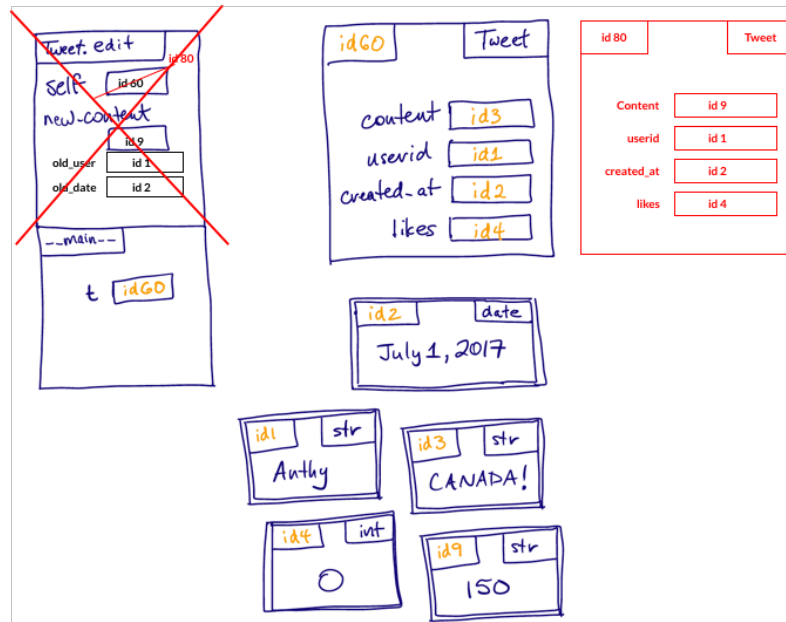
## Question 2

- 'CANADA!' is returned because self is immutable.



### Correct Solution:

‘CANADA!’ is returned because self is reassigned to id 80, but in local scope for the duration of the method call.

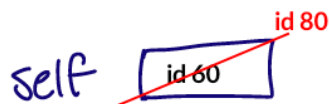


### Notes:

- Noticed that professor marks an ‘axe’ to method or functions that gets terminated during the duration of a program



- Noticed that professor marks a ‘slash’ to a variable or an attribute that changes during the duration of a program.



### Question 3