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8. Debugging exercise

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## 8. Debugging exercise

In machine learning, there a lot of reasons why a model would fail to perform well. The model could be poorly designed, the data could be too noisy, it could just be a poor initialization, or a poor choice of hyperparameters, etc. Therefore, it is vital to at least exclude engineering bugs using a debugger.

Fortunately, Python comes with a fully functional interactive debugger called `pdb`.

Before you tackle the last problem of this project, we recommend you take some time to learn how to use, for example with [this tutorial](#).

### Debugging exercise

1.0/1 point (graded)

In this problem, you are given a buggy piece of code and are asked to debug it.

The goal of this exercise is for you to set up a working debugging system for yourselves. (See the next page for an example.) Feel free to use other debuggers as you wish. But note that any extra print statement in submitted code will be graded as incorrect in the online code graders.

The function `get_sum_metrics` takes two arguments: a `prediction` and a list of `metrics` to apply to the prediction (say, for instance, the accuracy or the precision). Note that each metric is a function, not a number. The function should compute each of the metrics for the prediction and sum them. It should also add to this sum three default metrics, in this case, adding 0, 1 or 2 to the prediction.

**Reminder:** You should fix this function locally first, and run `python debug.py` in your `project0` directory to make sure it behaves as expected on the simple test cases provided

**Grader Note: :** If the grader appears unresponsive and displays "Processing", it means (most likely) it has crashed. Please resubmit your answers, and leave a message in the forum and we will work on fixing it as soon as possible.

```
1 def get_sum_metrics(predictions, metrics=None):
2     if metrics is None:
3         metrics = []
4
5     for i in range(3):
6         metrics.append(lambda x, i=i: x + i)
7
8     sum_metrics = 0
9     for metric in metrics:
10         sum_metrics += metric(predictions)
11
12     return sum_metrics
13
```

Press ESC then TAB or click outside of the code editor to exit

Correct

Test results

**CORRECT**

[See full output](#)

[See full output](#)

Submit











You have used 4 of 25 attempts




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<p> <a href="#">Hint: there is more than 1 bug in the code</a></p> <p>Enough said. In case you are still getting incorrect fixing only 1 bug. I fixed mine without even...</p>	7 new_
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-  Don't go crazy. 1  
I summarize here what helped me to solve this: 1. The debugger in the project 0 folder allows...
-  Is there a better solution than breaking up the for loop 2 new\_  
It seems like whenever we define the lambda function `lambda x: x + i`, it always uses the va...
-  I bet the exercise author has read... 8

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