



# Introduction to debugging in Python (+ CodeFights!)

@lpmayos

PyLadiesBCN

February 25, 2015

# The available weapons

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
continue  
list  
step into  
return  
some advice

Sources and references

Let's practice!



Fortunately, you will not have to face that problem barehanded. Python (and all languages) provides you with some useful weapons ready to use: loggers, tracers, monitoring tools, debuggers...

So please stop using print commands to try to find the errors ;)

```
1 ##
2 # @Input: positive integer
3 # @Output: equals to @Input if @Input is bigger
4 # than 12, and to 12 otherwise
5 ##
6 def returnTwelve(number):
7     while number < 12:
8         number = number + 1
9     return 12
```

# Logging

Why should we learn to debug?

Python debugging tools

Logging

Tracing

Debugging

PDB and IPDB

`ipdb.set_trace()`

`next`

`repeat`

`quit`

`print`

`continue`

`list`

`step into`

`return`

some advice

Sources and references

Let's practice!

Blablabla



# Tracing

Why should we learn to debug?

Python debugging tools

Logging

Tracing

Debugging

PDB and IPDB

`ipdb.set_trace()`

`next`

`repeat`

`quit`

`print`

`continue`

`list`

`step into`

`return`

some advice

Sources and references

Let's practice!

Blablabla



# Debugging

Why should we learn to debug?

Python debugging tools

Logging

Tracing

Debugging

PDB and IPDB

`ipdb.set_trace()`

`next`

`repeat`

`quit`

`print`

`continue`

`list`

`step into`

`return`

some advice

Sources and references

Let's practice!

Blablabla



# Getting started with *ipdb.set\_trace()*

Why should we  
learn to debug?

Python  
debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

`ipdb.set_trace()`  
next  
repeat  
quit  
print  
continue  
list  
step into  
return  
some advice

Sources and  
references

Let's practice!

Blablabla



# Execute the next statement with *n* (next)

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

`ipdb.set_trace()`

**next**  
repeat  
quit  
print  
continue  
list  
step into  
return  
some advice

Sources and references

Let's practice!

Blablabla



# Repeat the last debugging command with ***ENTER***

Why should we  
learn to debug?

Python  
debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
continue  
list  
step into  
return  
some advice

Sources and  
references

Let's practice!

Blablabla





# Help! How do I quit? with *q* (quit)

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
**quit**  
print  
continue  
list  
step into  
return  
some advice

Sources and references

Let's practice!

Blablabla



# Print the value of a variable with *p* (print)

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
**print**  
continue  
list  
step into  
return  
some advice

Sources and references

Let's practice!

Blablabla



# Turning off the (Pdb) prompt with `c` (continue)

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
**continue**  
list  
step into  
return  
some advice

Sources and references

Let's practice!

Blablabla



# See where you are with / (list)

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
continue  
**list**  
step into  
return  
some advice

Sources and references

Let's practice!

Blablabla



# Step into subroutines with **s** (step into)

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
continue  
list  
**step into**  
return  
some advice

Sources and references

Let's practice!

Blablabla



# Continue to the end of the current subroutine with *r* (return)

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
continue  
list  
step into  
**return**  
some advice

Sources and references

Let's practice!

Blablabla



# ...just be a little careful!

Why should we learn to debug?

Python debugging tools

- Logging
- Tracing
- Debugging

PDB and IPDB

- `ipdb.set_trace()`
- `next`
- `repeat`
- `quit`
- `print`
- `continue`
- `list`
- `step into`
- `return`
- some advice

Sources and references

Let's practice!

Blablabla



# Sources and references

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
continue  
list  
step into  
return  
some advice

Sources and references

Let's practice!



- Official documentation:  
<https://docs.python.org/2/library/pdb.html>
- Debugging in Python, 2009 post by Steve Ferg:  
<https://pythonconquerstheuniverse.wordpress.com/2009/09/10/debugging-in-python/>
- Python debugging tools, 2013 post by ionel's codelog:  
<http://blog.ionelmc.ro/2013/06/05/python-debugging-tools/>



# Let's practice!

Why should we learn to debug?

Python debugging tools

Logging  
Tracing  
Debugging

PDB and IPDB

ipdb.set\_trace()  
next  
repeat  
quit  
print  
continue  
list  
step into  
return  
some advice

Sources and references

Let's practice!

First some small exercises  
Then CodeFights!



Thank you :) Now you try!!

