How to read an error message

```
Traceback (most recent call last):
  File "test.py", line 25, in ?
    triangle()
  File "test.py", line 12, in triangle
    inc_total_height()
  File "test.py", line 8, in inc_total_height
    total_height = total_height + height
UnboundLocalError: local variable 'total_height' referenced before assignment
```

```
Traceback (most recent call last):
  File "test.py", line 2, in nr
    nr = int('23.5')
ValueError: invalid literal for int() with base 10: '23.5'
```

```
Traceback (most recent call last):
  File "test.py", line 7, in
    main()
  File "test.py", line 5, in main
    print hello
NameError: global name 'hello' is not defined
```

Line number the error occurred at. You always want to look at the last line. Python just shows you all the places it went through before it encountered this error.
Variable or function where the error occurred.
Line the error occurred at
Type of error. See below for examples (not an exhaustive list, there are many more and can have different flavors)
Details of the error. If you get an error message and you have no idea what is happening, the best you can do is to google for *Type of error: Details of the error*. For example. It is highly unlikely that you are the only one ever experiencing this error.

Debugging tips:

- don't panic. Getting errors is completely normal. We're all just mere fallible humans.
- read from the bottom
- learn the rules (= google the error)
- use **print** statements in places where variables are created or changed

ErrorName	Example	Description (non-exhaustive)
Syntax error	1) `flowers = ['rose','lily','gerbera'` 2) `for flower in flowers` `  print flower`	Forgetting the ':' at the end of `def if/elif/else when for.` Forgetting to close quotes and parentheses.
ValueError	`int('rose')`	Assigning an innapropriate value
Attribute Error	`a = 3` `a.replace(3,1)`	Calling an inappropriate method
TypeError	`3 + 'rose'`	An operation or function is applied to an object of inappropriate type
NameError	`flowers = ['rose','lily','gerbera']` `print fowlers`	A particular variable name is not found.
KeyError	`things = {'flower': 'rose', 'bodypart': 'nose'}` `things['car']`	A dictionary key is not found in the set of existing keys
IndexError	`flowers = ['rose', 'lily', 'gerbera']` `print flowers[30]`	When a sequence subscript is out of range.
Indentation Error	`for flower in flowers:` `print flower`	Incorrect indentation.
Semantic Error		Will **not generate any error** messages, but the script **will not** do what you wanted it to do.