Computer Programming (with Python)

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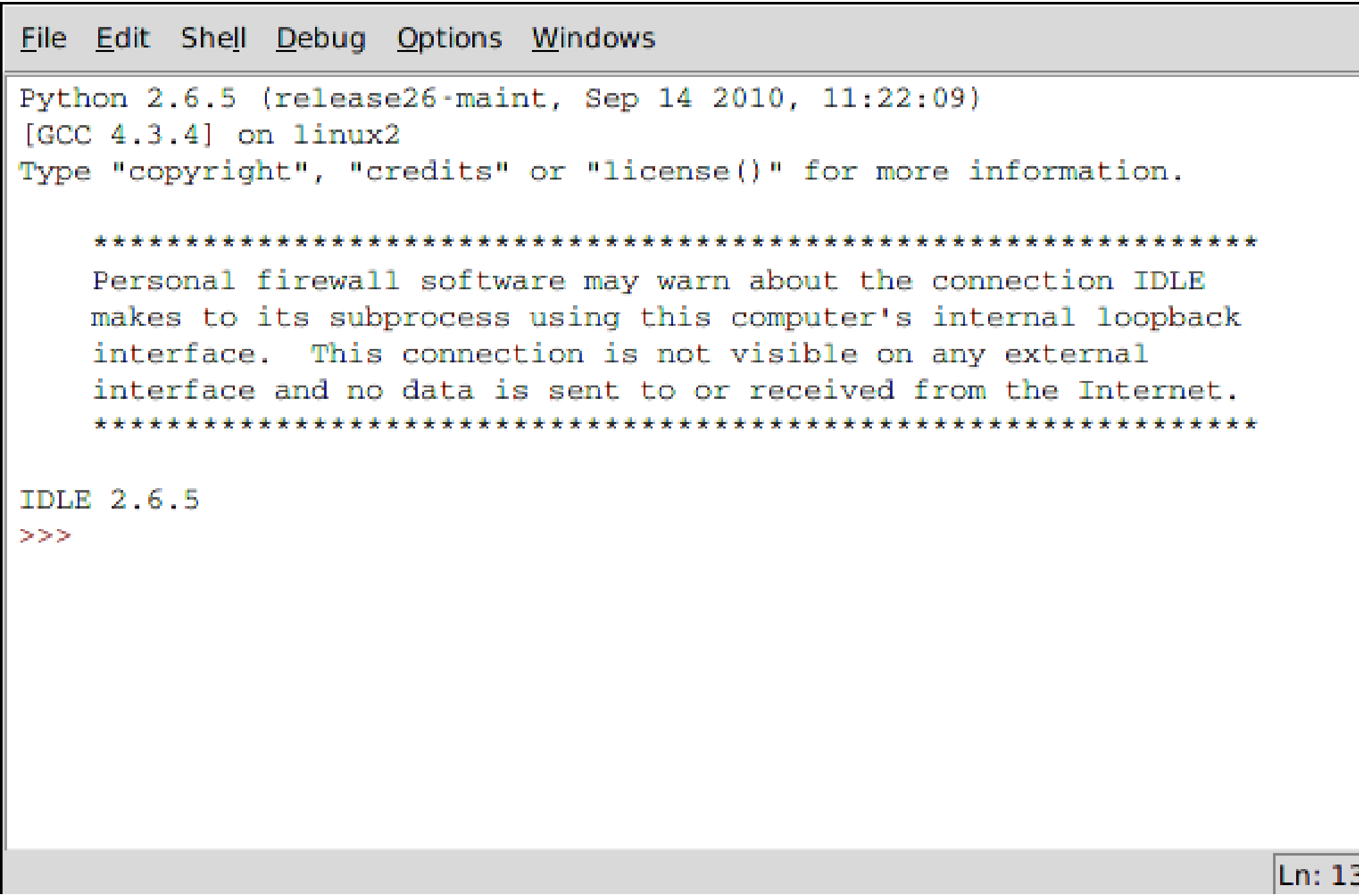
Install Python

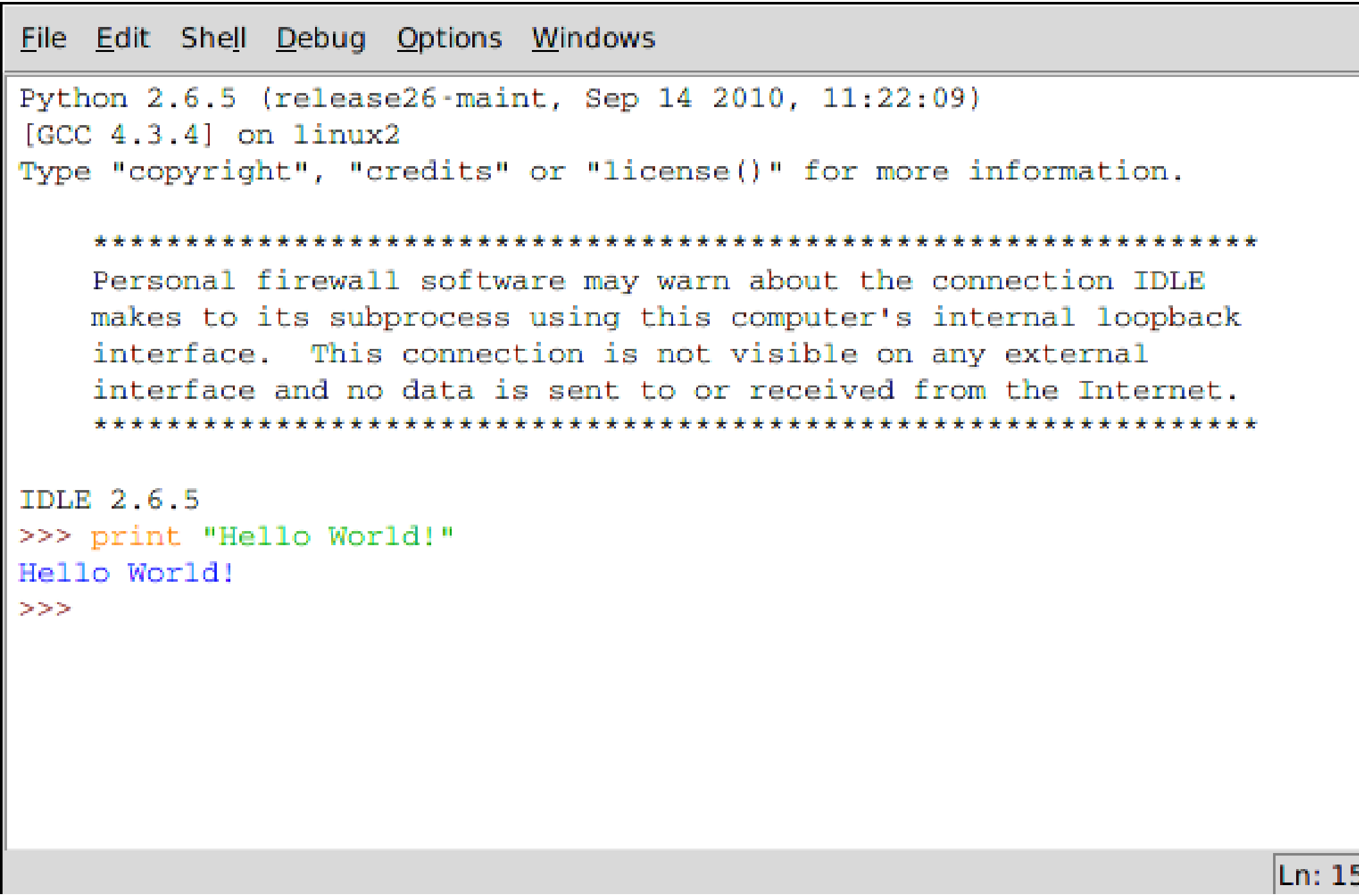
Start IDLE

Start -> Programs -> Python -> IDLE


File Edit Shell Debug Options Windows
Python 2.6.5 (release26-maint, Sep 14 2010, 11:22:09)
[GCC 4.3.4] on linux2
Type "copyright", "credits" or "license()" for more information.
****
Personal firewall software may warn about the connection IDLE
makes to its subprocess using this computer's internal loopback
interface. This connection is not visible on any external
interface and no data is sent to or received from the Internet.
****
IDLE 2.6.5
>>>
Ln: 13

Hello World!

```
print "Hello World!"
```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interface and no data is sent to or received from the Internet.
****
IDLE 2.6.5
>>> print "Hello World!"
Hello World!
>>>
Ln: 15

What did *Hello World* really do?

```
print "Hello World!"
```

Do some math

- + addition
- − subtraction
- × multiplication
- ÷ division

Do some math

2 + 2

Integers and Floating Points

Integers are whole numbers (`0`, `543`, `-3`)

Floating Points have decimals (`0.0`, `2.5`, `1/3.`)

What happens when you divide 2 *integers*?

Variables

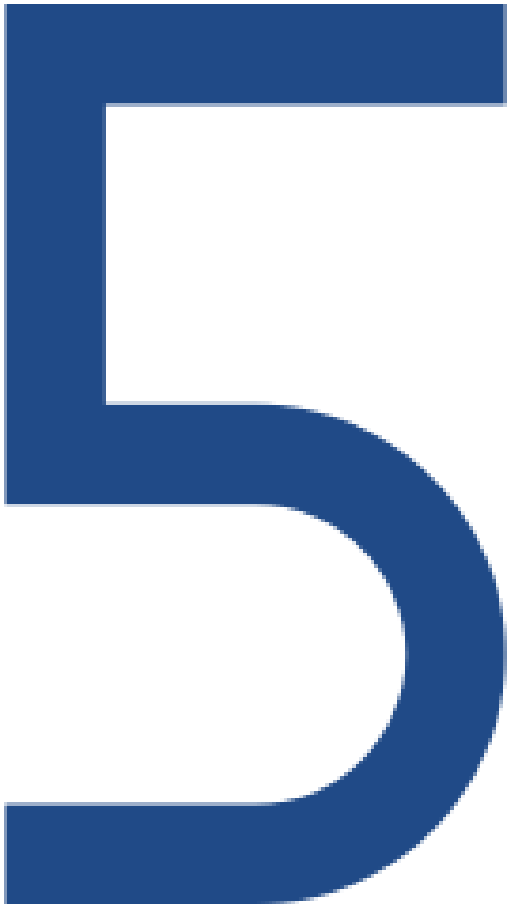

83

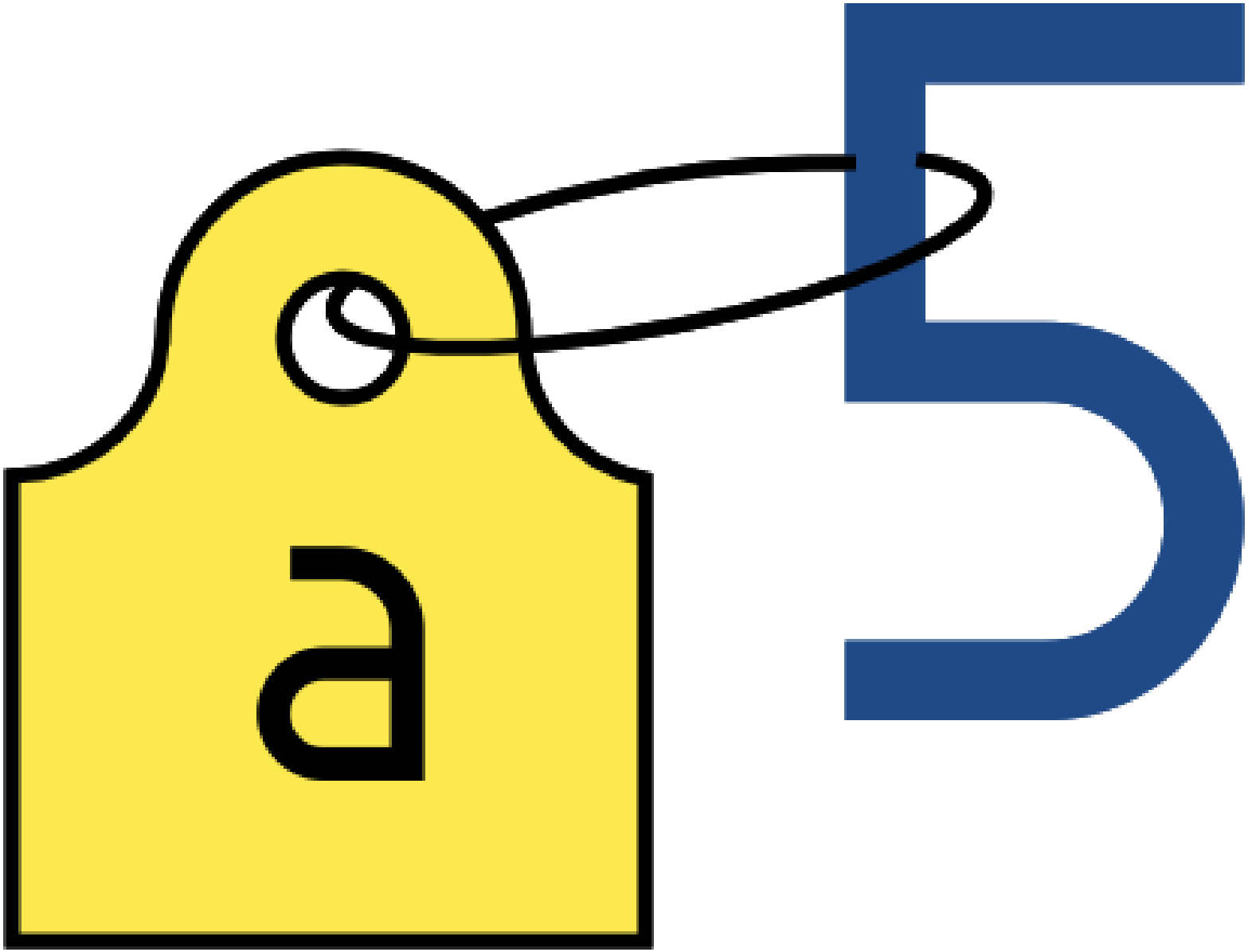
Variables

Variable are like tags to keep track of data (or cows)

```
a = 5
```

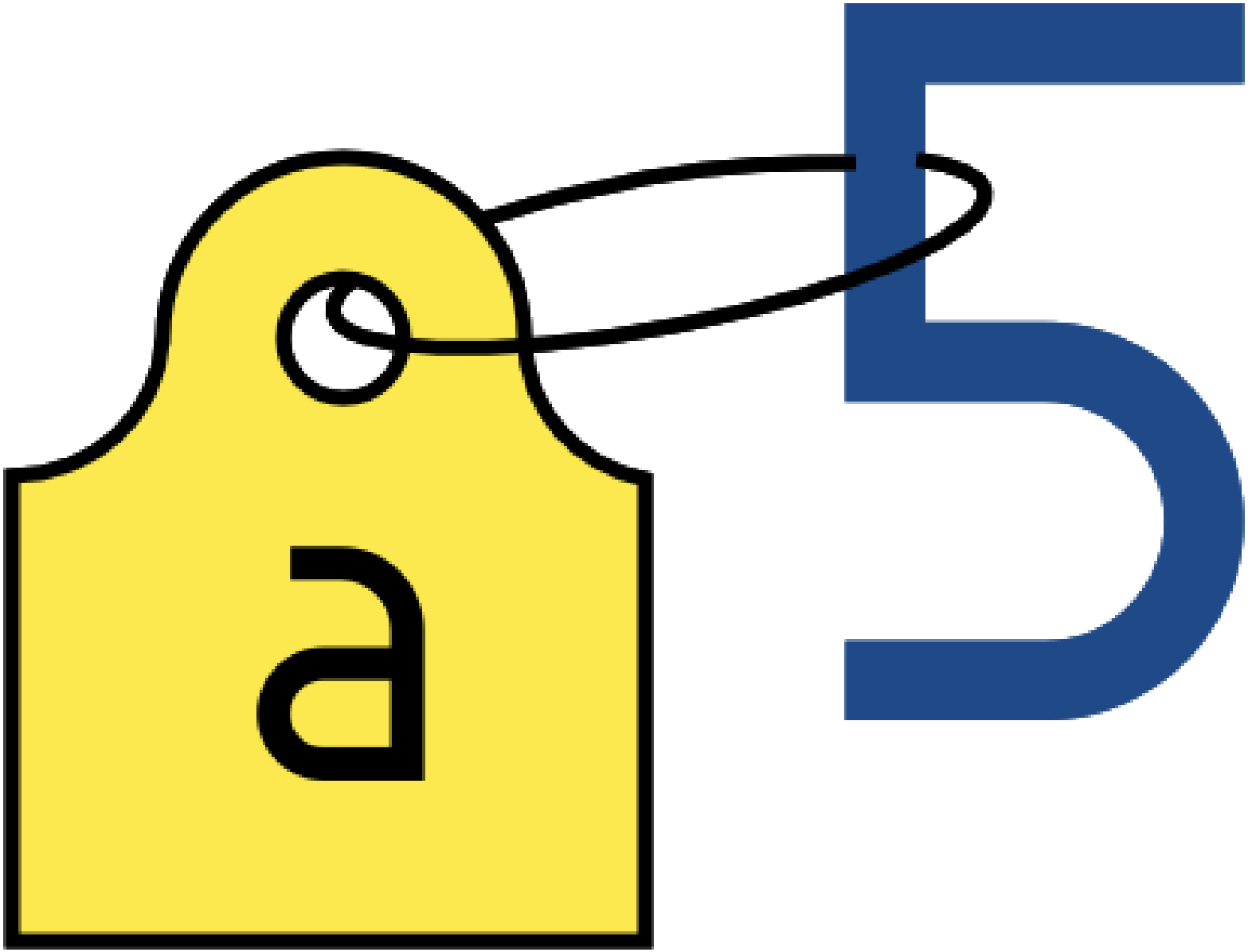

5M29




5
ə

Variables

```
a = 5
b = 5
```


5
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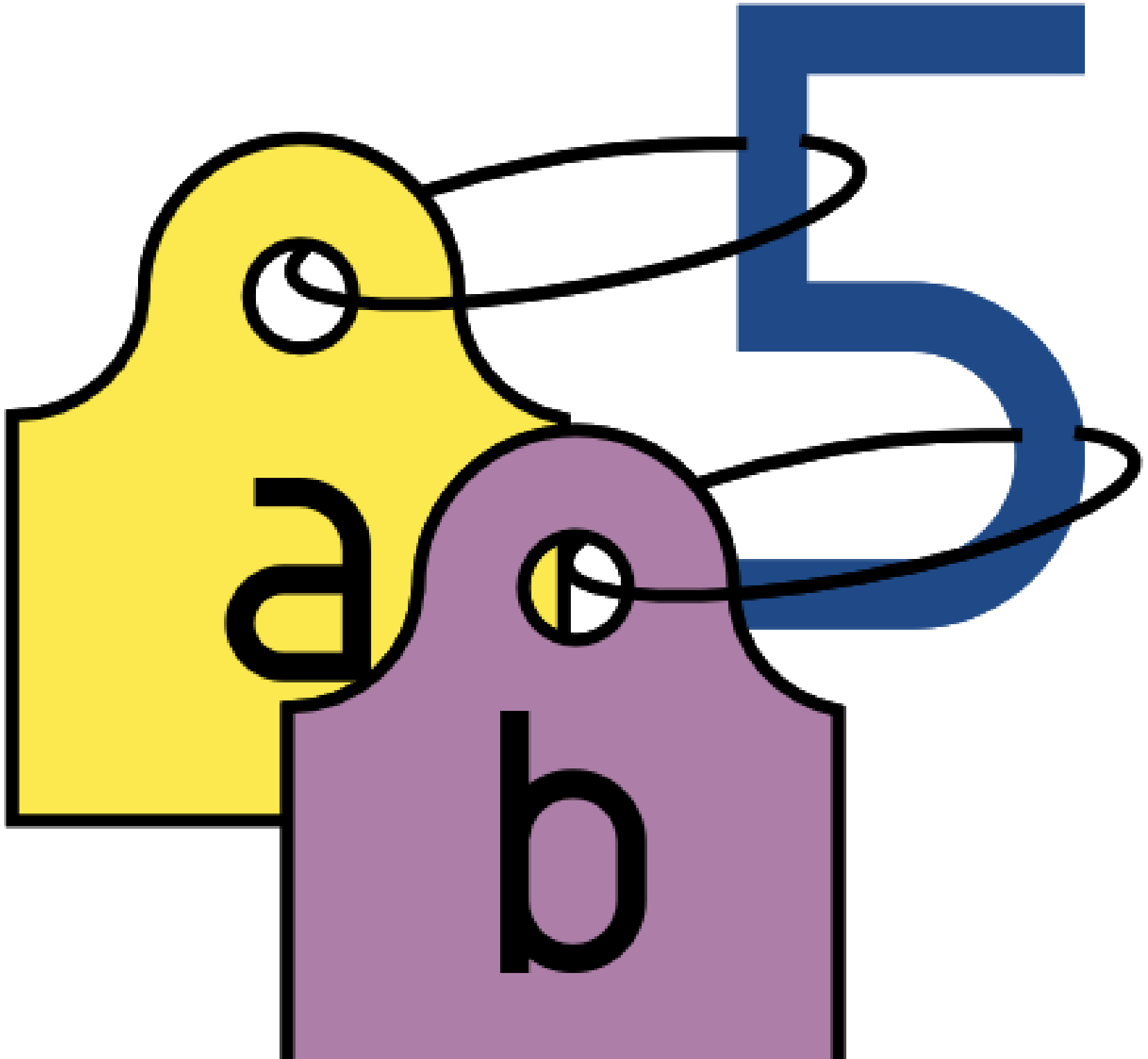
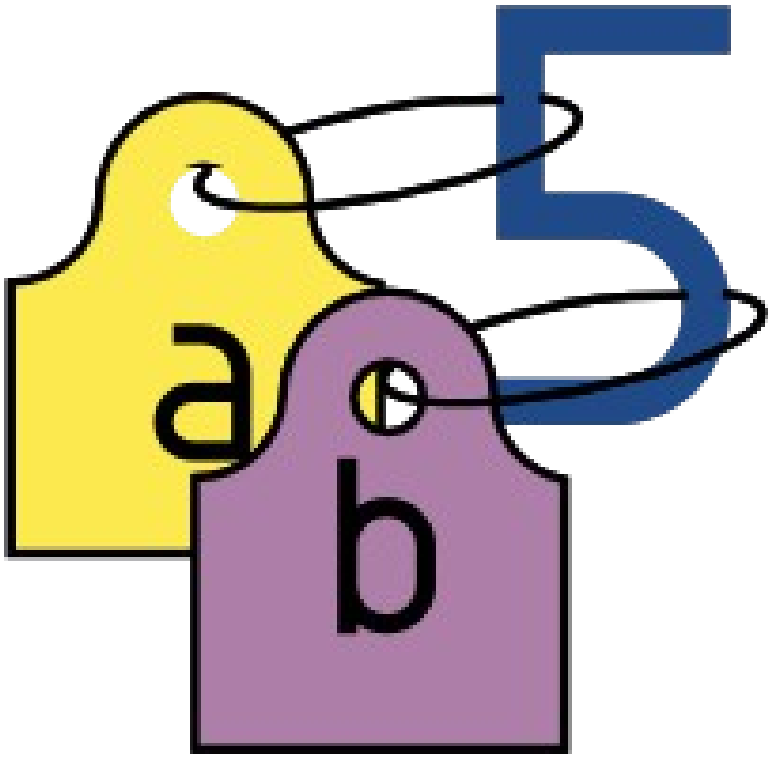

a
b

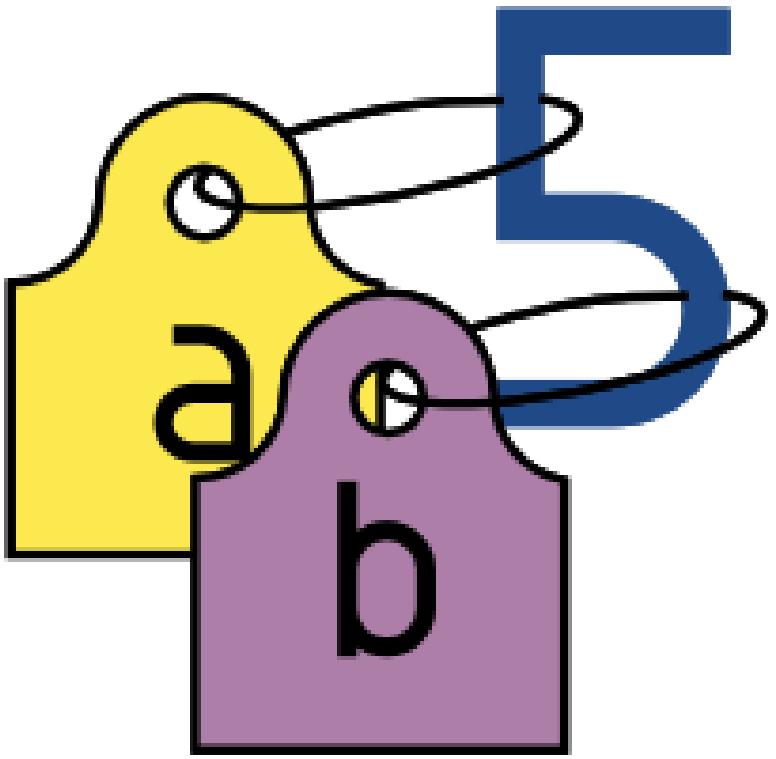
Variables

```
a = 5
b = 5
c = a + b
```

$$c = a + b$$



$$c = 5 + 5$$



$$c = 5 + 5$$

Variable Names

In *Python variables* are usually lower case. If they are more than one word, they have an underscore (_). They can't start with numbers.

Variable Names

Good	Bad
`a`	`A`
`full_name`	`fullName`
`two_names`	`2_names`
`name_1`	`name1`

Strings

Strings hold character data

Strings

```
a = 'hello'
b = "hi"
```

What does this do?

```
a = 'hello'
b = 'world'
c = a + b
```

Concatenation

Joining 2 strings together

Converting between *types*

Convert *string* to *integer* or *float*

```
num = int('4')
float_num =
float('4.0')
```

Converting between *types*

Convert *integer* to *string*

```
num_str = str(4)
```

`print`

`print` writes output to the screen

print

```
print 2+2
print "hello there"
```

Input

Ask a question and store the result

```
name = raw_input('what is your name?')
```

Saving programs

- Start Idle
- File->New Window
- Type in program
- hit *f5* to run

Assignment

- Write a program that asks the name of your school. Then print out the name
- Write a program that asks the length for a side of a square. Print out the area and perimeter.

credits

http://www.flickr.com/photos/tysonneil/1589

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