

Introduction to Python Programming

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Programming for Scientists

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What is a Computer?

- 1 Memory
- 2 Processor
- 3 Magic

Python Model

- 1 Objects
- 2 Operations on objects
- 3 Magic

Computer Program

```
helloworld.py
```

```
print 'Hello World'
```

Running a Program

1 Shell

2 IDE

Let me show you a demonstration. . .

More Complex Example

What is $25 + 20\%$?

More Complex Example

What is $25 + 20\%$?

```
print 25 * 1.2
```


Tip Calculator

Calculator

- 1 Input: initial amount and the tip percentage.
- 2 Output: final amount.

Blackboard demonstration

Tip Calculator (II)

- 1 Input: initial amount and service quality.
- 2 Output: final amount.

Conditionals

```
if <condition>:  
    <statement 1>  
    <statement 2>  
else:  
    <statement 3>
```

Lists

```
students = ['Luis', 'Mark', 'Rita']
```

```
print students[0]
```

```
print students[1]
```

```
print students[2]
```

Loops

```
students = ['Luis', 'Mark', 'Rita', ...]
```

```
for st in students:  
    print st
```

Loops (II)

```
students = ['Luis', ...]

looking_for = 'Anna'

i = 0
while students[i] != looking_for:
    i += 1

if students[i] == looking_for:
    print 'Found her'
else:
    print "Sorry, she's not registered!"
```