

# Introduction to python

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# Why python?

- good trade off between human time and machine time
- easy to pick up
- widely used
- well documented
- many libraries for research
- most popular alternatives: R, perl, (java)

# Definitions

- variables

```
a = 1  
b = 3.14  
c = 'charles'
```

- loops

```
for i in range(0, 10, 1):  
    print i
```

```
i = 0  
while i < 10:  
    # print i  
    i = i + 1
```

- conditionals

```
for i in range(0, 10, 1):  
    if i == 3:  
        print 'we have 3'  
    elif i > 3:  
        print 'we have many'  
    else:  
        print 'we have few'
```

# Definitions

- lists, tuples, dictionaries
- classes and objects

```
a = [0, 1, 2, 3, 4]
b = (0, 1, 2, 3, 4)
c = {'one': 11, 'two': 22,
     'three': 33, 'four': 79}
```

```
class MyClass:
    variable = "blah"

    def function(self):
        print("This is a message.")

myobjectx = MyClass()
print(myobjectx.variable)
```

# Quick start

- Open a shell and type “python”
- try previous examples on the “python shell”
- write these lines together in a text file and run it