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>>> About Us

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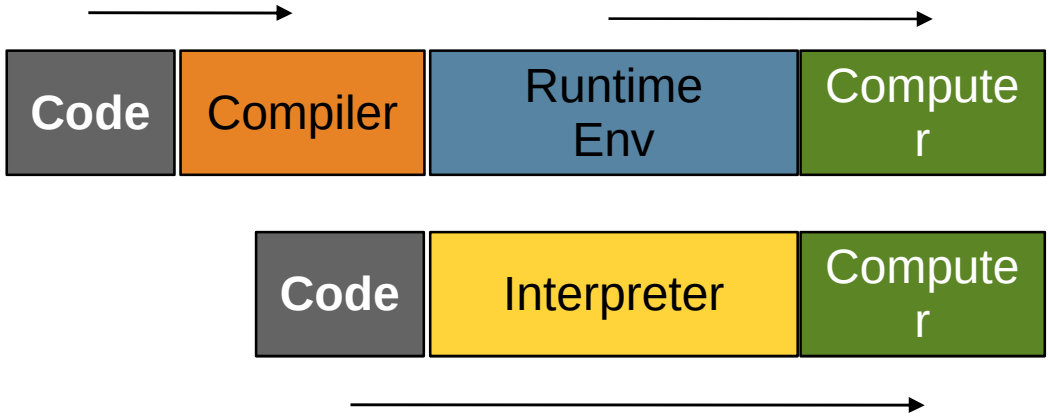
>>> Python Basics

- Interpreted
  - Not compiled like Java
  - This means: type commands and see results
- Targeted towards short to medium sized projects
- Useful as a scripting language

A whaa?

script – short program meant for one-time use.



>>> Getting it Going

Windows

1) Download Python from python.org.
2) Run 'python' using the run command.

-or-

Run Idle from the Start Menu.

Mac OSX

1) Python is already installed.
2) Open a terminal and run python or run Idle from finder.

Linux

1) Chances are you already have Python installed. To check run python from the terminal.
2) If not, install python through your distribution's package system.

Note: For step by step installation instructions, follow those provided on the course web site. Click on Python on the right hand side and follow the “Python Installation Instructions”

>>> Topic Review

* printing - System.out.println();
* methods – public static void <name>() ...

Hello.java

```
1  public class Hello {
2  public static void main(String[] args){
3          System.out.println("Hello world!");
4  }
5  }
```

Hello.java

```
1  public class Hello {
2  public static void main(String[] args){
3      hello();
4  }
5  public static void hello(){
6      System.out.println("Hello world!");
7  }
8  }
```

>>> Missing Main

Hello.java

```
1  public class Hello {
2  public static void main(String[] args){
3          System.out.println("Hello world!");
4  }
5  }
```

The entire file is interpreted as if it was typed into the interpreter. This makes it easy to write scripts with Python.

hello.py

```
1  print "Hello world!"
2
3
4
5
```

>>> Printing

Hello.java

```
1  public class Hello {
2  public static void main(String[] args){
3          System.out.println("Hello world!");
4          System.out.println();
5          System.out.println("Suppose two swallows carry it together.");
6  }
7  }
8
```

Escape sequences:
* \t – tab
* \n – new line
* \" - "
* \\ - \

hello.py

```
1  print "Hello world!"
2  print
3  print "Suppose two swallows carry it together."


4
```

>>> Methods

Hello.java

```
1  public class Hello {
2  public static void main(String[] args){
3          hello();
4  }
5  public static void hello(){
6          System.out.println("Hello \"world\"!");
7  }
8  }
```

Structure:

```
def <method name>():
    <statement>
    <statement>
    <statement>
        ...
    <statement>
```

hello.py

```
1  def hello():
2          print "Hello \"world\"!"
3
4  #main
5  hello()
```

Note: Python does not have a main method. However, methods must be defined first. Calls to methods can then be made. This is similar to having a "main" section of code. It is good practice to label this section of code with a comment.

>>> Whitespace

Unlike in Java, in Python whitespace (think tabs and spaces) matters. Instead of using braces ({}) to designate code blocks, Python uses the indentation. This was done to promote readable code. In Java you may or may not indent and it will work. In Python you **must** indent.

Hello.java

```
1  public class Hello {
2  public static void main(String[] args){
3          System.out.println(“Hello \"world\"!”);
4  }
5  }
```

hello.py

```
1  def hello():
2          print "Hello \"world\"!"
3
4  hello()
```

>>> Example 1

Example: Write a method that produces the following output.

We are the Knights Who Say... "Nee!"
(Nee! Nee! Nee!)

NO! Not the Knights Who Say "Nee"...

We are the Knights Who Say... "Nee!"
(Nee! Nee! Nee!)

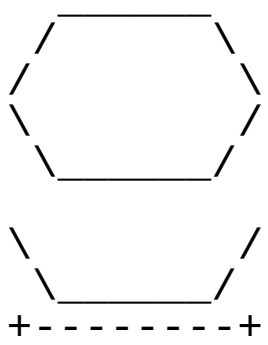
>>> Example 1

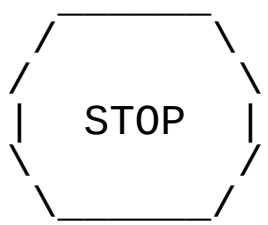
Solution:

```
def knights():
    print "We are the Knights Who Say... \"Nee!\""
    print "(Nee!  Nee!  Nee!)"
    print

def poorSouls():
    print "NO!\t Not the Knights Who Say \"Nee\"..."
    print


knights()
poorSouls()
knights()
```

>>> Example 2

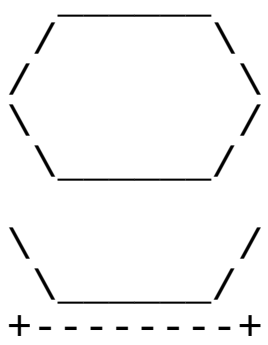
Example: Write a method that produces the following output.

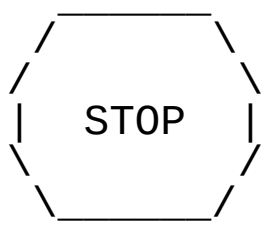




>>> Example 2

Example: Write a method that produces the following output.






```
def egg():
    top()
    bottom()
    print

def cup():
    bottom()
    line()
    print

def stop():
    top()
    print "|  STOP  |"
    bottom()
    print

def hat():
    top()
    line()
    print
```

```
def top():
    print "  _______"
    print " /       \\"
    print "/         \\"

def bottom():
    print "\\         /"
    print " \\_______/"

def line():
    print "+--------+"

egg()
cup()
stop()
hat()
```

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