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Week 1, Examples 1

```python
# 1.py
print("Hello World!"

#---------------------------------------

# 2.py
# Read in and print whatever you type in
sometext = input("Enter any text you want ")
print("This is what you typed:"
print(sometext)

#---------------------------------------

# 3.py
# The \n (just as in the C-language) between quotes
# causes a new line wherever it occurs
sometext = input("Enter any text you want 
")
print("This is what you typed:"
print(sometext)

#---------------------------------------

# 4.py
# assign a character string to a variable, and then use that variable
waitforinput = "Enter any text you want 
"
sometext = input(waitforinput)
print("This is what you typed:"
print(sometext)
```

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#5.py
# a function with no parameters (i.e., nothing between the parents)

def print_some_text():
    print("This is an example of a function ")
    print("that prints these lines ")
    print("whenever you invoke it by name.")
    print("Note that each print is on a new line ")

#6.py
# A function can accept parameters as input so that you can use
# them flexibly

# Remember to use quotes for strings, i.e., name is "Jane", and
# shoe_colour is "pink"

def say_hello(name, shoe_colour):
    print("Hello there ", name)
    print("I do like your stunning ", shoe_colour, " shoes!")

# A function that computes y = f(x^2) (that is x squared) for integer x in
# the
# interval [-20,20]

def main():
    print ("A simple example of a for-loop")
    for x in range (-20,21): #x is an integer variable now used as an index
        y = x * x
# Example from textbook (chaotic function), but with two inputs (x and xprime) simultaneously

def main():
    print("We will demonstrate a chaotic function")
    x = eval(input("Enter any number between 0 and 1: "))
    xprime = x + 0.01
    print("",x,"",xprime)
    for i in range(10):
        x = 3.9 * x * (1-x)  # this is the
        xprime = 3.9 * xprime * (1 - xprime)  # chaotic function
        print(i,"",x,"",xprime)

# You'll notice that, even though we left spaces (blank characters) in the
# print statement, the numbers will not be printed in even vertical columns.
# Why? Because some output numbers have fewer digits after the decimal point
# than others. The extra zeroes are not printed.

# We will learn how to format strings later, to get prettier output.

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