# Cheat Sheet

### Structure of a Python program

def main():

 statement

 statement

 ...

 statement

main()

### print statement (displays output on the console window)

print("text")

 or,

print() (prints a blank line)

### Escape sequences (for printing special characters in a print message)

|  |  |
| --- | --- |
| **Sequence** | **Description** |
| \t | tab |
| \n | new line |
| \" | quotation mark |
| \\ | backslash |
| \' | Single quote |

### Function (a group of statements that improves your program's structure and reduces redundancy)

 def name():

 statement

 statement

 ...

 statement

Example:

 def draw\_egg\_top():

 print(" \_\_\_\_\_\_")

 print(" / \\")

 print("/ \\")

### Comment (notes written in your program for the programmer to read)

# text

Example:

# CSc 110, Stan Smith

# This program prints the steps of my favorite recipe.

# This function displays the preamble of the US Constitution.

# Problems

### Ballparking

1. (We don't know the exact answers to these questions; mainly we ask them to stimulate discussion.)

a) Approximately how many slices of pizza do college students in the US consume each month?

b) Approximately how many gas stations are there in the US?

c) Assuming that a sheet of paper could be folded in half over and over, each time doubling its thickness, how many times would you have to fold a single sheet until it reached from the Earth to the Sun?

### print

**2.** Write a complete Python program that produces the exercise's output. For now, put all of your code into the program's main function.

There's one thing every coder must understand:

The print command.

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The print command.

**3.** Write the output of the program shown.

def main():

 print("Dear \"DoubleSlash\" magazine,")

 print()

 print("\tYour publication confuses me. Is it ")

 print("a \\\\ slash or a //// slash?")

 print("\nSincerely,")

 print("Susan \"Suzy\" Smith")

main()

**4.** Write a complete program that produces the output shown.

What is the difference between

a ' and a "? Or between a " and a \"?

One is what we see when we're typing our program.

The other is what appears on the "console."

### Functions

**5.** Write the output of the program shown.

def function1 ():

 print("I am function 1.")

def function2():

 function1()

 print("I am function 2.")

def function3():

 function2()

 print("I am function 3.")

 function1()

def main ():

 function1()

 function3()

 function2()

 function3()

main()

**6.** Improve the Mantra program from Problem #2. Remove its redundancy by adding a function.

**7.** Write a complete program that generates the output shown. Use functions to show structure and to eliminate redundancy in your solution.

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 If you have time, consider adding a comment heading with your name and section at the top of the program.

# Solutions

1. no answer provided

2.

def main():

 print("There's one thing every coder must understand:")

 print("The print command.")

 print()

 print("There's one thing every coder must understand:")

 print("The print command.")

main()

3.

Dear "DoubleSlash" magazine,

 Your publication confuses me. Is it

a \\ slash or a //// slash?

Sincerely,

Susan "Suzy" Smith

4.

def main():

 print("What is the difference between")

 print("a ' and a \"? Or between a \" and a \\\"?")

 print()

 print("One is what we see when we're typing our program.")

 print("The other is what appears on the \"console.\"")

main()

5.

I am function 1.

I am function 1.

I am function 2.

I am function 3.

I am function 1.

I am function 1.

I am function 2.

I am function 1.

I am function 2.

I am function 3.

I am function 1.

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# Solutions (continued)

6.

def main():

 **message()**

 print()

 **message()**

**def message():**

 print("There's one thing every coder must understand:")

 print("The print command.")

main()

7.

# Philip J. Fry, CSc 110, Autumn 3097, Section AX

# This program draws several repeated figures of stars

# using print statements.

# It uses functions to improve structure and redundancy.

def main():

 figure1()

 print()

 figure2()

 print()

 figure3()

def figure1():

 horizontal\_bar()

 print\_x()

def figure2():

 figure1()

 horizontal\_bar()

def figure3():

 print(" \*")

 print(" \*")

 print(" \*")

 figure1()

def horizontal\_bar():

 print("\*\*\*\*\*")

 print("\*\*\*\*\*")

def print\_x():

 print(" \* \*")

 print(" \*")

 print(" \* \*")

main()