Exercise 2

1. Given the string "Monty Python": ---**-test="Monty Python"**
2. Write an expression to print the first character.--**-print(test[0])**

print(Test[0])

1. Write an expression to print the last character.---- **print(test[-1])**

print(Test[-1])

1. Write an expression including len to print the last character.

**print(test[len(test)-1])**

1. Write an expression to print the length of the string.--**print(len(test))**

print(len(Test))

1. Write an expression that prints "Monty".----**print(test[:5]**)

1. Given the string "homebody": Test2="homebody"

1. Write an expression using slicing to print "home". --- Print(Test2[:4]
2. Write an expression using slicing to print "body". ----Print(Test2[4:]
3. Given a variable S containing a string of even length: Test3=”home”---- print(Test3[0.5)
4. Write an expression to print out the first half of the string.

def half(text):

middle = len(text) // 2

return text[0:middle]

data = input("Enter a String : ")

print("First Half of String is : ", half(data))

1. Write an expression to print out the second half of the string.

def half(test4):

middle = len(test4) // 2

return test4t[middle:]

Data 2 = input("Enter a String : ")

print("last Half of String is : ", half(data2))

1. Given a variable S containing a string of odd length:
2. Write an expression to print the middle character.

def middle(test5):

    middle = len(test5) //2

    return test5[middle]

Data3 = input("Enter a String : ")

print("middle of the String is : ", middle(Data3))

1. Write an expression to print the string up to but not including the middle character (i.e., the first half of the string).

def half(test6):

      middle=len(test6)//2

      return test6[0:middle -1]

data = input("Enter a String : ")

print("First Half of String is : ", half(data))

1. Write an expression to print the string from the middle character to the end (not including the middle character).

def half(test7):

      middle=len(test7)//2

      return test7[middle +1:]

data = input("Enter a String : ")

print("First Half of String is : ", half(data))

1. Given x = ‘water’, what is returned by x.replace('w','c',1)?

x="water"

print(x.replace('w','c',1)) == cater

1. Given the string S = "What is your name?":
2. What is returned by S[::2]?
3. What is returned by S[2:8:-1]?
4. Given the string variable x = 'acegikmoqsuwy' and y = '+bdfhjlnprtvxz', use indexing to create a string z that is the lowercase English alphabet.
5. The plus sign (+) is *overloaded* in Python. Explain why 5 + 4 equals 9, '5' + '4'

equals '54', and 5 + 4.0 equals 9.0.

1. What will be printed by the following?

x = 'This is a test.'

**print**(x \* 3)

1. (String operators) The Monty Python comedy troupe has a famous skit set in a restaurant whose menu is predominately Spam—a canned meat mixture of ham and pork. One menu entry was “Spam, Spam, Spam, Spam, Spam, baked beans, Spam, Spam, Spam, and Spam.” Write a Python string expression using both the concatenation (+) and repetition (\*) string operators to form that menu entry.
2. The following Python statement generates this error: “ValueError: too many values to unpack.” Why?

first,second = input('two space-separated numbers:')

1. We know that writing the following code: **print**("I like writing in Python.") **print**("It is so much fun.")

will result in:

I like writing **in** Python. It **is** so much fun.

when executed. However, can you manage to do this same task with only one line of code?

1. Five string methods manipulate case: capitalize, title, swapcase, upper, and lower. Consider the strings: s1 = "concord", s2 = "souix city", s3 = "HONOLULU", and s4 = "TopHat".
2. Describe what capitalize does.
3. Describe what swapcase does.
4. Describe what upper does.
5. Describe what lower does.
6. Describe what title does.
7. It is possible to combine string methods in one expression. Given the expression

s="CAT", what is s.upper().lower() ?

1. Two string methods left and right justify strings within a specified width. In addition, they default by filling in with spaces but can be specified to fill in with a character. Considers = "Topkapi" and s.rjust(20,".") or s.ljust(15). Experiment with right and left justification. Describe the rules for what ljust and rjust do.
2. Two string methods find where a character is in a string: find and index.
3. Both work the same if a character is found, but they behave differently if the character is not found. Describe the difference in how they behave when the character is not found.
4. The find and index methods are not limited to finding single characters. They can search for substrings. Given s = "Topkapi", what does s.find("kap")

print? Describe the rule for what find prints.

1. Using the input command, prompt for input and then convert the input to lowercase.
2. Convert a string that is all capitals into a string where only the first letters are capitals. For example, convert "NEW YORK" to "New York".
3. Experiment with the count method. What does it count? For example,

some string = "Hello world!" some string.count("o")

1. Experiment with the strip method. What does it do? For example,

some string = "Hi!. "

some string.strip(".!")

1. The string methods that start with “is” all return either True or False. Experiment with them to figure out how they work—i.e., what causes them to return “True” and what causes them to return “False.”
2. Let, name str = 'Albert Einstein'. How would you extract the first name and last name from name str using string operator ‘:’?
3. In British English, there is the word *flavour*. The American spelling is “flavor”. Suppose you have a string in Python called brit word = 'flavour' and you want to convert it into the American variant and store it in a string called amer word. How would you do it?
4. Which of the following works without any error?
5. var = 'xyz' \* 10.5
6. var = 'xyz' \* '5'
7. var = 'xyz' \* 5
8. var = 'xyz' \* 5.0
9. (Reversing a string) Given a string variable X = 'Alan Turing', write an expression to reverse it to get string Y = 'gniruT nalA'.
10. Suppose you have a string ab string = 'abababababababab'. Write an expression to remove all the *b*’s and create a string a string = 'aaaaaaaa'.
11. Given the string 'abcdefghij', write a single line of code that will print the following (Hint: Slicing is your friend):
12. 'jihgfedcba'
13. 'adgj'
14. 'igeca'
15. Using the find method, write a short program that will print out the index of both

*o*’s when given the input “Who’s on first?”

1. Write a program that given a name in the form of “Chapman, Graham Arthur” will convert it to the form “Graham Arthur Chapman.”
2. The expression ‘dog’ + ‘s’ will return ‘dogs’. What is returned by the expression ‘dog’− ‘g’ ? Explain.