

Exercises

Basics and I/O

1. Can you run Python online?
2. Can you run Python offline? (on your computer)
3. What is the most recent version of Python
4. Create the “Hello World” program, output “Hello World”
5. Which types of variables does Python support
6. Create a program that outputs your name
7. Make it output your last name on the 2nd line
8. Create a program that outputs a tree
9. Create a program that replaces “World” by “Friend” in the program “Hello World”
10. Ask the user to type their name, then output it
11. Why does Python talk about “Strings” when they mean text?
12. What’s the difference between “Hello world” and ‘Hello World’ ?
13. What is a comment?
14. Create a program that draws a house (ASCII art)
15. Create a program that draws a cube (ASCII art)

Data types

16. What is a data type?
17. Which data types does Python support?
18. Which do you need to create a list { }, [] or ()
19. Create a list with 5 famous people and output the first one
20. Ask the user for a name (keyboard) and add it to the list
21. What’s the difference between a tuple and a list ?
22. What’s the difference between a list and a dictionary?
23. What index number is the last item of a list ? (count reverse)
24. Can lists be combined together ?
25. Can tuples be combined together?
26. What is the minimum number of items necessary in a list ?

Loops

27. Create a for loop that counts from 0 to 100
28. Must a Python program always use 4 spaces when indenting? (indentation)
29. Now do the same for a while loop
30. Do for loops always increase by one?
31. Can a for loop count in reverse direction, like count from 10 to 1?
32. Can you show the counter variable in a for loop?
33. Can you use a for loop to output list elements?
34. Can a while loop count in reverse direction?
35. To show the number of items in a database, would you use a while loop or for loop?
36. For a pace maker, would you use a while loop or for loop?
37. Create a list of student names, then output “Hello name” for each student
38. Create a program that outputs even numbers below 25
39. Create a program that outputs all odd numbers below 25

Functions

40. Why use functions instead of a list of only statements/commands?
41. How many parameters a function must have?
42. Can a function call another function?
43. What is the use of “return” in a function?
44. Create a function `def hello(name)` that outputs name when calling it with a parameter
45. Create a function `def addxy(x,y)` that outputs $x + y$
46. Can a function call itself?
47. Can a function take a list as parameter?
48. Can a function name start with a upper case letter?
49. Can function name start with a number?
50. Does Python have built-in functions?
51. Python modules contain functions, which modules exist?

If statements

52. What’s the difference between an if statement and for loop?
53. Make a program that asks the question “1+1” and if the answer is “2” it should output “Ok”
54. Make a program that asks a password and keeps asking if it’s wrong
55. Create a program that asks a question, then outputs the “Right” if it’s the right answer
56. Make it output “Wrong” if it’s the wrong answer
57. Can a for loop be inside an if statement?
58. Can an if statement be inside a for loop?
59. Can an if statement be inside an if statement?
60. Can a function call be inside an if statement?
61. Can a function definition be inside an if statement?
62. Create a function `def count(low,high)` that outputs all numbers from start to finish

Make programs

63. Create a program that asks a number, then outputs 1 to that number
64. Make a calculator program
65. Make a program that shows all letters of the alphabet
66. Make a program that outputs the prime numbers
67. Create a (text) game in Python
68. Create a program that reads a text file and outputs line numbers with the file data
69. Create a program that asks monthly salary and calculates income for 10 years
70. Create a bruto/netto salary calculator
71. Create a body-mass-index (bmi) calculator
72. Given the cost of electricity per hour, calculate the price if the user types the number of hours
73. Create a program that asks the GDP of two countries and calculates the difference
74. Create a program that outputs a calendar
75. Create a program that outputs a table with student names and scores
76. Given the average salary, create a program that calculates the total salary of all employees given the number of employees
77. Given the price of a hotel room, airplane cost and restaurant prices. Make a program that calculates the total price of the holiday if you let the user decide the number of days

78. Make a program that calculates the total distance (km/miles), given cities and distances between them **challenge**
79. Given information about the weather, make a program that recommends the best choice what to take (umbrella, sunglasses, jacket)
80. Given information about about programmers, create a program that recommends the best candidate to hire for the company
81. Create a task list program. Where the user can add new tasks and remove tasks
82. Create a program that can output text files, given the filename

General questions

83. Why is the programming language named “Python” ?
84. Why was Python created?
85. When was Python created?
86. Who created Python?
87. Java programs end with **.java** like **program.java**, What is the right extension for a program, **.py** or **.python** ?
88. What’s are the differences between Python and Java?
89. What’s are the differences between Python and Perl?
90. Is there a difference between Python 2 and Python 3?
91. What kind of software can you make with Python?
92. Can Python programs run on a mobile phone?
93. Can Python programs run on a watch?
94. Can a Java function be called inside a Python program?
95. Do you think Python will replace all other programming languages? If so, why or why not?
96. Which companies use Python? Find out
97. What can Python not do?
98. Do you think computers can program themselves in the future? Why yes or why not?
99. Why do software developers often use more than one language like SQL or JavaScript in combination with Python?
100. Did you know there’s another course and questions included? (Object oriented programming)