Python basic (Part -I) [150 exercises with solution]

[*An editor is available at the bottom of the page to write and execute the scripts.*]

1. Write a Python program to print the following string in a specific format (see the output).
Sample String : "Twinkle, twinkle, little star, How I wonder what you are! Up above the world so high, Like a diamond in the sky. Twinkle, twinkle, little star, How I wonder what you are" *Output :*

```
Twinkle, twinkle, little star,
        How I wonder what you are!
                Up above the world so high,
                Like a diamond in the sky.
Twinkle, twinkle, little star,
        How I wonder what you are
```

2. Write a Python program to get the Python version you are using.

3. Write a Python program to display the current date and time.
Sample Output :
Current date and time :
2014-07-05 14:34:14

4. Write a Python program which accepts the radius of a circle from the user and compute the area.
Sample Output :
r = 1.1
Area = 3.8013271108436504

5. Write a Python program which accepts the user's first and last name and print them in reverse order with a space between them.

6. Write a Python program which accepts a sequence of comma-separated numbers from user and generate a list and a tuple with those numbers.
Sample data : 3, 5, 7, 23
Output :
List : ['3', ' 5', ' 7', ' 23']
Tuple : ('3', ' 5', ' 7', ' 23')

7. Write a Python program to accept a filename from the user and print the extension of that.
Sample filename : abc.java
Output : java

8. Write a Python program to display the first and last colors from the following list.
color_list = ["Red","Green","White" ,"Black"]

9. Write a Python program to display the examination schedule. (extract the date from exam_st_date).
exam_st_date = (11, 12, 2014)
Sample Output : The examination will start from : 11 / 12 / 2014

10. Write a Python program that accepts an integer (n) and computes the value of n+nn+nnn.
Sample value of n is 5
Expected Result : 615

11. Write a Python program to print the documents (syntax, description etc.) of Python built-in function(s).
Sample function : abs()
Expected Result :
abs(number) -> number
Return the absolute value of the argument.

12. Write a Python program to print the calendar of a given month and year.
Note : Use 'calendar' module.

13. Write a Python program to print the following 'here document'.
Sample string :
a string that you "don't" have to escape
This
is a ..... multi-line
heredoc string --------> example

14. Write a Python program to calculate number of days between two dates.
Sample dates : (2014, 7, 2), (2014, 7, 11)
Expected output : 9 days

15. Write a Python program to get the volume of a sphere with radius 6.

16. Write a Python program to get the difference between a given number and 17, if the number is greater than 17 return double the absolute difference.

17. Write a Python program to test whether a number is within 100 of 1000 or 2000.

18. Write a Python program to calculate the sum of three given numbers, if the values are equal then return three times of their sum.

19. Write a Python program to get a new string from a given string where "Is" has been added to the front. If the given string already begins with "Is" then return the string unchanged.

20. Write a Python program to get a string which is n (non-negative integer) copies of a given string.

21. Write a Python program to find whether a given number (accept from the user) is even or odd, print out an appropriate message to the user.

22. Write a Python program to count the number 4 in a given list.

23. Write a Python program to get the n (non-negative integer) copies of the first 2 characters of a given string. Return the n copies of the whole string if the length is less than 2.

24. Write a Python program to test whether a passed letter is a vowel or not.

25. Write a Python program to check whether a specified value is contained in a group of values.
Test Data :
3 -> [1, 5, 8, 3] : True
-1 -> [1, 5, 8, 3] : False

26. Write a Python program to create a histogram from a given list of integers.

27. Write a Python program to concatenate all elements in a list into a string and return it.

28. Write a Python program to print all even numbers from a given numbers list in the same order and stop the printing if any numbers that come after 237 in the sequence.
Sample numbers list :

```
numbers = [
    386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953,
345,
    399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687,
217,
    815, 67, 104, 58, 512, 24, 892, 894, 767, 553, 81, 379, 843, 831, 445, 742,
717,
    958,743, 527
    ]
```

29. Write a Python program to print out a set containing all the colors from color_list_1 which are not present in color_list_2.
Test Data :
color_list_1 = set(["White", "Black", "Red"])
color_list_2 = set(["Red", "Green"])
Expected Output :
{'Black', 'White'}

30. Write a Python program that will accept the base and height of a triangle and compute the area.

31. Write a Python program to compute the greatest common divisor (GCD) of two positive integers.

32. Write a Python program to get the least common multiple (LCM) of two positive integers.

33. Write a Python program to sum of three given integers. However, if two values are equal sum will be zero.

34. Write a Python program to sum of two given integers. However, if the sum is between 15 to 20 it will return 20.

35. Write a Python program that will return true if the two given integer values are equal or their sum or difference is 5.

36. Write a Python program to add two objects if both objects are an integer type.

37. Write a Python program to display your details like name, age, address in three different lines.

38. Write a Python program to solve (x + y) * (x + y).
Test Data : x = 4, y = 3
Expected Output : (4 + 3) ^ 2) = 49

39. Write a Python program to compute the future value of a specified principal amount, rate of interest, and a number of years.
Test Data : amt = 10000, int = 3.5, years = 7
Expected Output : 12722.79

40. Write a Python program to compute the distance between the points (x1, y1) and (x2, y2).

41. Write a Python program to check whether a file exists.

42. Write a Python program to determine if a Python shell is executing in 32bit or 64bit mode on OS.

43. Write a Python program to get OS name, platform and release information.

44. Write a Python program to locate Python site-packages.

45. Write a Python program to call an external command.

46. Write a python program to get the path and name of the file that is currently executing.

47. Write a Python program to find out the number of CPUs using.

48. Write a Python program to parse a string to Float or Integer.

49. Write a Python program to list all files in a directory in Python.

50. Write a Python program to print without newline or space.

51. Write a Python program to determine profiling of Python programs.
Note: A profile is a set of statistics that describes how often and for how long various parts of the program executed. These statistics can be formatted into reports via the pstats module.

52. Write a Python program to print to stderr.

53. Write a python program to access environment variables.

54. Write a Python program to get the current username.

55. Write a Python to find local IP addresses using Python's stdlib.

56. Write a Python program to get height and width of the console window.

57. Write a Python program to get execution time for a Python method.

58. Write a Python program to sum of the first n positive integers.

59. Write a Python program to convert height (in feet and inches) to centimeters.

60. Write a Python program to calculate the hypotenuse of a right angled triangle.

61. Write a Python program to convert the distance (in feet) to inches, yards, and miles.

62. Write a Python program to convert all units of time into seconds.

63. Write a Python program to get an absolute file path.

64. Write a Python program to get file creation and modification date/times.

65. Write a Python program to convert seconds to day, hour, minutes and seconds.

66. Write a Python program to calculate body mass index.

67. Write a Python program to convert pressure in kilopascals to pounds per square inch, a millimeter of mercury (mmHg) and atmosphere pressure.

68. Write a Python program to calculate sum of digits of a number.

69. Write a Python program to sort three integers without using conditional statements and loops.

70. Write a Python program to sort files by date.

71. Write a Python program to get a directory listing, sorted by creation date.

72. Write a Python program to get the details of math module.

73. Write a Python program to calculate midpoints of a line.

74. Write a Python program to hash a word.

75. Write a Python program to get the copyright information and write Copyright information in Python code.

76. Write a Python program to get the command-line arguments (name of the script, the number of arguments, arguments) passed to a script.

77. Write a Python program to test whether the system is a big-endian platform or little-endian platform.

78. Write a Python program to find the available built-in modules.

79. Write a Python program to get the size of an object in bytes.

80. Write a Python program to get the current value of the recursion limit.

81. Write a Python program to concatenate N strings.

82. Write a Python program to calculate the sum of all items of a container (tuple, list, set, dictionary).

83. Write a Python program to test whether all numbers of a list is greater than a certain number.

84. Write a Python program to count the number occurrence of a specific character in a string.

85. Write a Python program to check whether a file path is a file or a directory.

86. Write a Python program to get the ASCII value of a character.

87. Write a Python program to get the size of a file.

88. Given variables x=30 and y=20, write a Python program to print "30+20=50".

89. Write a Python program to perform an action if a condition is true.
Given a variable name, if the value is 1, display the string "First day of a Month!" and do nothing if the value is not equal.

90. Write a Python program to create a copy of its own source code.

91. Write a Python program to swap two variables.

92. Write a Python program to define a string containing special characters in various forms.

93. Write a Python program to get the Identity, Type, and Value of an object.

94. Write a Python program to convert a byte string to a list of integers.

95. Write a Python program to check whether a string is numeric.

96. Write a Python program to print the current call stack.

97. Write a Python program to list the special variables used within the language.

98. Write a Python program to get the system time.

Note : The system time is important for debugging, network information, random number seeds, or something as simple as program performance.

99. Write a Python program to clear the screen or terminal.

100. Write a Python program to get the name of the host on which the routine is running.

101. Write a Python program to access and print a URL's content to the console.

102. Write a Python program to get system command output.

103. Write a Python program to extract the filename from a given path.

104. Write a Python program to get the effective group id, effective user id, real group id, a list of supplemental group ids associated with the current process.
Note: Availability: Unix.

105. Write a Python program to get the users environment.

106. Write a Python program to divide a path on the extension separator.

107. Write a Python program to retrieve file properties.

108. Write a Python program to find path refers to a file or directory when you encounter a path name.

109. Write a Python program to check if a number is positive, negative or zero.

110. Write a Python program to get numbers divisible by fifteen from a list using an anonymous function.

111. Write a Python program to make file lists from current directory using a wildcard.

112. Write a Python program to remove the first item from a specified list.

113. Write a Python program to input a number, if it is not a number generates an error message.

114. Write a Python program to filter the positive numbers from a list.

115. Write a Python program to compute the product of a list of integers (without using for loop).

116. Write a Python program to print Unicode characters.

117. Write a Python program to prove that two string variables of same value point same memory location.

118. Write a Python program to create a bytearray from a list.

119. Write a Python program to round a floating-point number to specified number decimal places.

120. Write a Python program to format a specified string limiting the length of a string.

121. Write a Python program to determine whether variable is defined or not.

122. Write a Python program to empty a variable without destroying it.

Sample data: n=20
d = {"x":200}
Expected Output : 0
{}

123. Write a Python program to determine the largest and smallest integers, longs, floats.

124. Write a Python program to check whether multiple variables have the same value.

125. Write a Python program to sum of all counts in a collections.

126. Write a Python program to get the actual module object for a given object.

127. Write a Python program to check whether an integer fits in 64 bits.

128. Write a Python program to check whether lowercase letters exist in a string.

129. Write a Python program to add leading zeroes to a string.

130. Write a Python program to use double quotes to display strings.

131. Write a Python program to split a variable length string into variables.

132. Write a Python program to list home directory without absolute path.

133. Write a Python program to calculate the time runs (difference between start and current time) of a program.

134. Write a Python program to input two integers in a single line.

135. Write a Python program to print a variable without spaces between values.
Sample value : x =30
Expected output : Value of x is "30"

136. Write a Python program to find files and skip directories of a given directory.

137. Write a Python program to extract single key-value pair of a dictionary in variables.

138. Write a Python program to convert true to 1 and false to 0.

139. Write a Python program to valid a IP address.

140. Write a Python program to convert an integer to binary keep leading zeros.
Sample data : x=12
Expected output : 00001100
0000001100

141. Write a python program to convert decimal to hexadecimal.
Sample decimal number: 30, 4
Expected output: 1e, 04

142. Write a Python program to check if every consecutive sequence of zeroes is followed by a consecutive sequence of ones of same length in a given string. Return True/False.
Original sequence: 01010101
Check if every consecutive sequence of zeroes is followed by a consecutive sequence of ones in the said string:
True
Original sequence: 00
Check if every consecutive sequence of zeroes is followed by a consecutive sequence of ones in the said string:
False
Original sequence: 000111000111
Check if every consecutive sequence of zeroes is followed by a consecutive sequence of ones in the said string:
True
Original sequence: 00011100011
Check if every consecutive sequence of zeroes is followed by a consecutive sequence of ones in the said string:
False

143. Write a Python program to determine if the python shell is executing in 32bit or 64bit mode on operating system.

144. Write a Python program to check whether variable is integer or string.

145. Write a Python program to test if a variable is a list or tuple or a set.

146. Write a Python program to find the location of Python module sources.

147. Write a Python function to check whether a number is divisible by another number. Accept two integers values form the user.

148. Write a Python function to find the maximum and minimum numbers from a sequence of numbers.
Note: Do not use built-in functions.

149. Write a Python function that takes a positive integer and returns the sum of the cube of all the positive integers smaller than the specified number.

150. Write a Python function to check whether a distinct pair of numbers whose product is odd present in a sequence of integer values.