קורס

Basic Python

תרגולים

\*כל הזכויות שמורות למכללת NET4U\*

תוכן עניינים:

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**תרגולים מעשיים**

**1.**Write a Python program to print the following string in a specific format (see the output).    
Sample String : "Net4U, is the best place…in the world" Output :

"Net4U, is the best place

…in the world"

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

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

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

5. 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

6. 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.  
  
7. 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.  
  
8. 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

]

9. Write a Python program to add two objects if both objects are an integer type.  
  
10. Write a Python program to locate Python site-packages.

11. Write a python program to access environment variables.

12. Write a Python program to convert height (in feet and inches) to centimeters.  
  
13. Write a Python program to convert seconds to day, hour, minutes and seconds.

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

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

15. Write a Python function that takes a sequence of numbers and determines if all the numbers are different from each other.  
  
16. Write a Python program to get the top stories from Google news.

17. Write a Python program which solve the equation:  
ax+by=c  
dx+ey=f  
Print the values of x, y where a, b, c, d, e and f are given.  
**Input:**  
a,b,c,d,e,f separated by a single space.  
(-1,000 = a,b,c,d,e,f = 1,000)  
Input the value of a, b, c, d, e, f:  
5 8 6 7 9 4  
Values of x and y:  
-2.000 2.000

18. Write a Python program which adds up columns and rows of given table as shown in the specified figure.    
Input number of rows/columns (0 to exit)  
4  
Input cell value:  
25 69 51 26  
68 35 29 54  
54 57 45 63  
61 68 47 59  
Result:  
25 69 51 26 171  
68 35 29 54 186  
54 57 45 63 219  
61 68 47 59 235  
208 229 172 202 811  
Input number of rows/columns (0 to exit)

19. Write a Python program to count the number of characters (character frequency) in a string.    
Sample String : google.com'  
Expected Result : {'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}

20. Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.

Sample String : 'The lyrics is not that poor!'  
'The lyrics is poor!'  
Expected Result : 'The lyrics is good!'  
'The lyrics is poor!'  
  
  
21. Write a Python function to get a string made of 4 copies of the last two characters of a specified string (length must be at least 2).    
Sample function and result :   
insert\_end('Python') -> onononon  
insert\_end('Exercises') -> eseseses  
  
  
22. Write a Python program to print the following integers with zeros on the left of specified width.  
  
23. Write a Python program to remove spaces from a given string.  
  
24. Write a Python program to remove leading zeros from an IP address.  
  
25. Write a Python program to replace the last element in a list with another list.    
Sample data : [1, 3, 5, 7, 9, 10], [2, 4, 6, 8]  
Expected Output: [1, 3, 5, 7, 9, 2, 4, 6, 8]   
  
26. Write a Python program to match key values in two dictionaries.   
Sample dictionary: {'key1': 1, 'key2': 3, 'key3': 2}, {'key1': 1, 'key2': 2}  
Expected output: key1: 1 is present in both x and y.  
  
27. Write a Python program to sort a tuple by its float element.

Sample data: [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')]  
Expected Output: [('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]

28.  Write a Python program to find maximum and the minimum value in a set.  
  
29. Write a Python program to find the length of a set.  
  
30. Write a Python program to insert a new item before the second element in an existing array.  
  
  
  
31. Write a Python program to convert an array to an ordinary list with the same items.  
  
32.   
Write a Python program to print alphabet pattern 'A'.   
Expected Output:

\*\*\*

\* \*

\* \*

\*\*\*\*\*

\* \*

\* \*

\* \*

33.  
Write a Python program to construct the following pattern, using a nested loop number.    
Expected Output:

1

22

333

4444

55555

666666

7777777

88888888

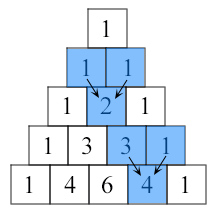
999999999

34. Write a Python function to sum all the numbers in a list.

Sample List : (8, 2, 3, 0, 7)  
Expected Output : 20

35. Write a Python function that prints out the first n rows of Pascal's triangle.    
Note : Pascal's triangle is an arithmetic and geometric figure first imagined by Blaise Pascal.

Sample Pascal's triangle :



Each number is the two numbers above it added together

36. Write a Python program to create a FIFO queue.    
Expected Output:  
0 1 2 3

37. Write a Python program to create a LIFO queue.    
Expected Output:  
3 2 1 0

38. Write a Python program for sequential search.    
Sequential Search : In computer science, linear search or sequential search is a method for finding a particular value in a list that checks each element in sequence until the desired element is found or the list is exhausted. The list need not be ordered.  
Test Data :  
Sequential\_Search([11,23,58,31,56,77,43,12,65,19],31) -> (True, 3)  
  
39. Write a Python class to get all possible unique subsets from a set of distinct integers.   
Input : [4, 5, 6]  
Output : [[], [6], [5], [5, 6], [4], [4, 6], [4, 5], [4, 5, 6]]  
  
40. Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle.  
  
41. Write a Python program to calculate the area of a trapezoid.

Note : A trapezoid is a quadrilateral with two sides parallel. The trapezoid is equivalent to the British definition of the trapezium. An isosceles trapezoid is a trapezoid in which the base angles are equal so.  
Test Data:  
Height : 5  
Base, first value : 5  
Base, second value : 6  
Expected Output: Area is : 27.5  
  
  
  
42. Write a python program to find the next previous palindrome of a specified number.  
  
43. Write a Python program to read first n lines of a file.  
  
44. Write a Python program to get the file size of a plain file.  
  
45. Write a Python program to remove newline characters from a file.  
  
46. Write a Python program that matches a string that has an a followed by one or more b's.  
  
47. Write a Python program that matches a word at the beginning of a string.  
  
48. Write a Python program to insert spaces between words starting with capital letters.