

Exercise 2

bit.ly/SIC-2025

1. Create a list in python having 5 elements from 0 to 4.
2. Create a list in python containing elements "a", "aa", "aaa", "aaaa", "aaaaa"
3. Given the list `colors = ['red', 'blue', 'green', 'yellow']`, what is the output of
 - `colors[2]`
 - `numbers[1:4]`
 - `numbers[-10:]`
 - `numbers[-5:2]`
4. Create a list in python containing mixed data. It should have atleast one integer, one float, one string, and one boolean value.
5. Take marks of 5 subjects as input from user and give the maximum, minimum marks, the percentage and grade (Assume: Grade A is for > 90, B for <90 > 80, C for <80, Fullmarks = 100)
6. Create a list of 5 random elements and loop over it. Print the elements of the list.
7. Create two list in python and merge them to create third list
8. Take multiple numbers as input from user and process it so that it does not have any duplicate values . if user inputs 1, 1, 2, 3 you should print [1,2,3] telling those were the unique values for the list.
9. Given two lists, list1 = [1, 2, 3, 4, 5] and list2 = [4, 5, 6, 7, 8], write code to find the common elements.
10. How can we create a matrix in python using lists?

```
1 2 3
4 5 6
7 8 9
```

11. Write a Python function to flatten a nested list, e.g., `[[1, 2], [3, 4], [5, 6]]` into `[1, 2, 3, 4, 5, 6]`.
12. Write a Rock Paper Scissor game in python. YOU will play against computer. User will give input from keyboard on their selection and based on the combination tell either computer won or User. Also display input from user.
13. Explore methods for list using dir method eg. clear, sort, Which of them return None value

PP1.

There is a list with the string `s_list = ['abc', 'bcd', 'bcdefg', 'abba', 'cddc', 'opq']`. Implement the following function to this list.

Do not use the min function or sort method to print the shortest string from the strings of s_list. (If there are multiple shortest strings, print the string that shows the first as following.)

output example:

The shortest string : abc

PP2.

There is a list with the string s_list = ['abc', 'bcd', 'bcdefg', 'abba', 'cddc', 'opq']. Implement the following function to this list.

Do not use the max function or sort method to print the longest string from the strings of s_list. (If there are multiple longest strings, print the string that shows the first as following.)

output example:

The longest string : bcdefg

PP3.

There is a list with the string s_list = ['abc', 'bcd', 'bcdefg', 'abba', 'cddc', 'opq']. Implement the following function to this list.

- From the pair programming problem earlier, the length of 'abc', 'bcd', 'opq' are the same as 3. Likewise, if the string lengths are the same, write a program that prints all of the three shortest strings as follows. Use the sort(key=len) function to sort the strings by length and then write a code.

output example:

The shortest strings : 'abc', 'bcd', 'opq'