

Lab #4

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1 Tasks 5 and 6 continuation

Please solve the problems using for loops and if statements!

1.1 Task 5

Given a vector $v = [10, -2, -331, 1, -100, 201]$

- create a new vector `v_positive` containing only positive elements of the vector `v`. The result should be `[10, 1, 201]`.
- create a new vector `v_negative` with the negative elements of `v`. The result should be `[-2, -331, -100]`.
- construct a vector `v_concat` as a concatenation of `v_positive` and `v_negative`. The result should be `[10, 1, 201, -2, -331, -100]`.
- print to output all 3 vectors and their sizes.

Hint: to create an empty vector `v_positive` you can use the following code

```
1 v_positive = [];
```

And you can later append elements to it by using **concatenation**

```
1 v_positive = [v_positive, new_element]; % to add a
   new element "new_element" to the vector
```

1.2 Task 6

Modify task 3 to compute the product of only **negative** numbers of the vector. For example, if the input vector $v = [-3, 100, -5, -6, 20, 7]$ the result should be -90.

2 Task 7

Please solve the problem using for loops and if statements! Given a vector $v = [1, 5, 11, 19, 4, 24, 31, 15]$

- create a new vector **v_and** containing only elements of the vector v which are greater or equal to 10 and less than 20. The result should be $[11, 19, 15]$.
- create a new vector **v_or** containing only elements of the vector v which are less than 10 or greater than 30. The result should be $[1, 5, 4, 31]$.
- create a new vector **v_not** containing only elements of the vector v which are not less than 20 and not greater than 30 (use not \sim operator). The result should be $[24]$.

3 Task 8

Modify Task 4 to display only pairs of two different numbers. For example for the vector $v = [4, 6, 9, 10]$ print

```
1 4 6
2 4 9
3 4 10
4 6 4
5 6 9
6 6 10
7 9 4
8 9 6
```

9	9	10
10	10	4
11	10	6
12	10	9