

**ENGR 101 - INTRODUCTION TO PROGRAMMING**  
**Study Questions - Week 9**

**Q1**

Write a function which takes a list as input, it should change items which are integers to strings and return the list after the changes have been made.

**Q2**

Write a function that takes two lists as inputs and finds the one with the highest length. Print out the elements of that list in uppercase. **Note:** List should only have strings as elements.

**Q3**

Write a function which takes two lists as input and checks if the first list contains the same items as in list 2 but in reverse order (e.g., [1,2,3,4,5] and [5,4,3,2,1] are two reverse ordered lists).

**Q4**

Write a function that takes a list as input and it should print out the elements of the list in reverse order.

**Q5**

Write a function that will take a list as an input and it will create a string out of the elements of the list, in reversed order.

```
>>reverse_str(["s","e","h","i","r"])
rihes
```

**Q6**

Define a function list\_intersection that takes two lists as inputs and print only the elements that are common to the two input lists.

```
>>print list_intersection([-1, 33, 4, 9], [9, 5, "t", -1, "lol"])
9
-1
```

### Q7

Define a function `multi_stats` that takes a list with numerical elements arranged in ascending order and prints the sum, mean and median of the given list. For example,

```
>>print multi_stats([1, 2, 3, 4])
```

```
Sum: 10
```

```
Mean: 2.5
```

```
Median: 2.5
```

Note: You can refer to Google for definitions of mean and median.

### Q8

Define a function `max_min` that takes a list as input and returns the maximum and minimum of the list. You CANNOT use the built-in `max` or `min` functions.

### Q9

Assume a list of integers from 1 to 10 is given with possibly some missing values. You are going to find the missing values in the list. Write a function called `missed_values()` that takes a list and return the missing value.

For example: `missed_values([1,2,3,5,6,8,9,10])`

```
4
```

```
7
```

### Q10

In this question, you are going to modify the Q9 question. In this question, write a function, called `insert_missing_values()` that takes the same list as in question 2 as input and inserts the missing values into that list in ascending order. (Note: Your output should be a sorted list)

### Q11

Write a function which takes a list of strings and integers, and prints the occurrences of integer and strings elements to the screen.

For example: if your input is `['araba', 3, 'python', 'bosisler', 5]`  
your output should be:

```
strings=3
```

```
integers=2
```

**Q12**

Write function `top_Numbers()` that takes a list of integers and a number `n` and return the top `n` element in this list.

For example: `top_numbers([3,54,1,5],2)`

5

54

**Q13**

Write a function called `ngrams_list()` that takes a string and a number `n` and return the `n`-grams of the this string as a list.

For example: `ngrams_list("computer", 2)`

`["co","om","mp","pu","ut","te","er"]`

**Q14**

What will be the output of following code?

```
def f(x,l=[]):  
    for i in range(x):  
        l.append(i*i)  
    print(l)
```

`f(2)`

`f(3,[3,2,1])`

`f(3)`

**Q15**

Write a function called `remove_squares()` that takes a list as an input and check if a integer in list has its square also in list, it should remove both integer and its square from the list.

For example: `remove_squares([1,2,6,4,13,36,18])`

`[13,18]`

**Q16**

Write a function that takes a list of words and create a sentence from these words. Your sentence should be tab separated and if list has duplicate words, your sentence should have only one of the duplicate words.

### Q17

Write a function which takes the string below, creates a list and puts heroes in this list as a member of this list. Try to do it without using the built-in split function, which we have not covered yet.

```
text = "batman-arrow-superman-daredevil-hulk-robin-gandalf"  
output will be:  
['batman', 'arrow', 'superman', 'daredevil', 'hulk', 'robin', 'gandalf']
```

### Q18

Take the list, which is created in Q17. Create a string like “batman arrow superman daredevil hulk robin gandalf” from this list. Try to do it without using the built-in join function, which we have not covered yet.

### Q19

Write a function which takes an integer as an input, and saves all digits of this integer into a list and returns it.

E.g. If the input is 182389, the function will return [1,8,2,3,8,9]

### Q20

Write a function it takes a string str as an input, checks all letters of the string, and constructs a list that contains the list of character that appear in str. This list should not contain any duplicates.

Eg. If the input is “ankara” the output should be ['a', 'n', 'k', 'r']