

Fundamentals of Python Programming

Homework Assignments

Module: Generators. Higher order functions. Decorators. Modules. API testing

Part 1

Task 1

Create a function that returns all odd numbers in a range. The function takes the beginning and the end of the range as parameters. Use the generator mechanism within the function.

Task 2

Create a function that returns all values from a list that are not in a range specified by a user. The function takes the list, the beginning and the end of the range as parameters. Use the generator mechanism within the function.

Task 3

To solve this task, be sure to use the mechanism of higher order functions. Create a function that displays a line (horizontal or vertical) using a symbol specified by a user. A user determines the symbol and which line to display.

The function's signature:

```
def show_line(symbol, function_to_call)
```



- `symbol` — a symbol to display.
- `function_to_call` — a function for drawing a line (vertical line or horizontal line, one function per line type).

Task 4

Create a function that returns a list with all even numbers, from 0 to 100,000.

Using the decorator mechanism, count how many seconds it took to compute all the numbers. Display the number of seconds and all even numbers from 0 to 100,000.

Task 5

Add to the task 4 the ability to pass a range boundary to search for all even numbers.