Home Assignment <8>: List Slicing and Indexing

Learning Objective:

The objective of this assignment is to practice list slicing, negative indexing, reversing lists, and sorting techniques in Python.

Expected Completion Time:

Best Case: 10 minutes
Average Case: 15 minutes

Assignment Details:

You are given a list of the first ten prime numbers:

- prime_numbers = [2, 3, 5, 7, 11, 13, 17, 19, 23, 29]

Perform the following operations using list slicing and indexing techniques:

a) **Extract the middle five primes:** Create a new list containing the five primes in the middle of the original list.

b) **Get every second prime:** Create a new list containing every second number from the original list, starting from the beginning.

c) **Use negative indexing:** Create a new list containing the last three primes of the list.

d) **Reverse the list:** Create a new list that contains all the elements of the original list in reverse order.

e) **Descending Order:** Sort the list in descending order and store it in a new list.

Expected Outcome:

Upon completion of this assignment, you should be able to:

- Apply list slicing with different step values.
- Use negative indexing to access elements from the end of a list.
- Reverse lists using slicing.
- Sort lists in descending order.
- Gain confidence in working with Python list operations.