Homework / Lab Lec 23:

1.Classify complexity of these tasks:

-Checking if a list has duplicates.

-Sorting a dataset of 1M entries.

-Training k-NN on n samples.

-Running BFS on a graph with V vertices, E edges.

2.Write your own binary search and prove its Θ(log n).

Compare runtime of:

fib\_recur(n) vs an iterative Fibonacci implementation.

Plot time taken for n = 10…40.