Linear search:

Tassavvur qiling men 1 dan 1000 oralig’ida 998 sonini o’yladim!

Siz Linear search orqali men o’ylagan sonni topmoqchi bolsangiz siz 997 ta qadamdankeyin topasiz bu juda ko’p vaqt, linear searchning kamchiligi shunda, lekin bu Binary search orqali atigi 10 ta qadam bilan topiladi

Binary Search:

Tassavvur qiling:

data = [3, 1, 6, 8, 12, 4, 9, 11, 2, 10] ruyxat bot

target = int(input("target = ")) bu biz qidirayotgan element

high = len(data) – 1 bu maximum qadamlar soni yani yuqori chegara

low = 0 eng quyi chegara

Binary search to’g’ri ishlashi uchun:

high > low bo’lishi kerak va data.sort() bo’lishi kerak

middle = (high + low) // 2 bu o’rta qiymatming indexi

i = 0 # i - qadamlarni hisoblash uchun

while True: # va kodining to’liq qismi

middle = (long + low) // 2

print("middle: ", middle)

if data[middle] == target:

print(f"bu son {middle}-indexda joylashgan")

i += 1

break

elif data[middle] < target:

low = middle + 1

elif data[middle] > target:

long = middle - 1

i += 1

print("Qadamlar soni: ", i)

Note:

agar target > middle dan bo’lsa chap

agar target < middle dan bo’lsa o’ng dan qidiramiz