**1.Prime numbers between M and N**

def is\_prime(n):

if n <= 1:

return False

if n <= 3:

return True

if n % 2 == 0 or n % 3 == 0:

return False

i = 5

while i \* i <= n:

if n % i == 0 or n % (i + 2) == 0:

return False

i += 6

return True

def primes\_in\_range(M, N):

return [num for num in range(M, N+1) if is\_prime(num)]

# Example usage:

M, N = 10, 50

print(primes\_in\_range(M, N))