CO21BTECH11002

Aayush Kumar

OS1 Assignment 2

The isPerfect( ) function:

This function takes the struct values as input and checks for all the integers between begin and end values (inclusive) if the integer is a perfect number or not.

This function also creates the log file for the thread.

For each integer, we start by initializing the sum variable equal to 1 (since every number is divisible by 1).

Then it runs a for loop from 2 till and checks if the iterator i divides n. If i is a divisor of n then we add i and n/i to the sum. We do not need to check after since if a number greater than and it divides n then the other divisor will be smaller than which we have already accounted.

Hence the time complexity for each integer is .

If a perfect number is found then the function puts the value in numbers array and increments the count variable.

The main( ) function:

We start by taking reading the value of n and k from the input file.

ct variable holds the number of integers each thread will work on.

The program initializes the starting and ending integers and thread index for each thread.

Then it creates and runs all the threads and waits for them to finish. After the threads have executed, it joins all the threads.

Then it creates the OutMain file and writes it using the values found by running the threads, stored in threadValues array.