Homework 01

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Data Structure Documentation

3.1 PrimeStartEnd Struct Reference

`#include <prime.h>`

Data Fields

- int start
- int end

3.1.1 Detailed Description

This holds the start and end of the prime calulations.

3.1.2 Field Documentation

3.1.2.1 int end

3.1.2.2 int start

The documentation for this struct was generated from the following file:

- prime.h

Chapter 4

File Documentation

4.1 main.c File Reference

```
#include <stdio.h>
#include "prime.h"
#include <math.h>
#include "mpi.h"
```

Defines

- #define WORKTAG 1
- #define N 100000000

Functions

- int main (int argc, char **argv)

4.1.1 Define Documentation

4.1.1.1 #define N 100000000

4.1.1.2 #define WORKTAG 1

4.1.2 Function Documentation

4.1.2.1 int main (int *argc*, char ** *argv*)

Find how many odd consecutive numbers there are between 1 and 100,000,000.

Splits the data evenly into ranks. It then processes and find how many odd consecutive numbers there is for a given rank.

4.2 prime.c File Reference

```
#include "prime.h"
```

Functions

- int isPrime (int num)
- int do_work (struct PrimeStartEnd primeStartEnd)
- int is_odd (int num)

4.2.1 Function Documentation

4.2.1.1 int do_work (struct PrimeStartEnd *primeStartEnd*)

Does the actual calculations of the odd consecutive numbers.

Parameters

primeStartEnd A struct that holds where to start and stop the calculatios of prime numbers.

Returns

How many odd consecutive numbers there are.

4.2.1.2 int is_odd (int *num*)

Checks if a given number is odd or not.

Parameters

num The number to check if it is a odd number.

Returns

True if it is a odd number.

4.2.1.3 int isPrime (int *num*)

Tests for prime number.

Parameters

num The number to test if it is a prime number.

Returns

This will return true if it a prime false otherwise.

4.3 prime.h File Reference

```
#include <math.h>
```

Data Structures

- struct PrimeStartEnd

Functions

- int isPrime (int num)
- int do_work (struct PrimeStartEnd primeStartEnd)
- int is_odd (int num)

4.3.1 Function Documentation

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