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CSC 332 Section H

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Assignment #2 Report

Screenshot of the Output:

Using 1 thread:

```
stefantan@Stefans-MacBook-Air assignment_02 % gcc assignment_02.c -o assignment_02
stefantan@Stefans-MacBook-Air assignment_02 % ./assignment_02
Integer with the Largest Number of Divisors: 7560
Time in Seconds Spent to Calculate: 0.203504
stefantan@Stefans-MacBook-Air assignment_02 % █
```

Using 2 threads:

```
stefantan@Stefans-MacBook-Air assignment_02 % gcc assignment_02.c -o assignment_02
stefantan@Stefans-MacBook-Air assignment_02 % ./assignment_02
Integer with the Largest Number of Divisors: 7560
Time in Seconds Spent to Calculate: 0.148867
stefantan@Stefans-MacBook-Air assignment_02 % █
```

Using 4 threads:

```
stefantan@Stefans-MacBook-Air assignment_02 % gcc assignment_02.c -o assignment_02
stefantan@Stefans-MacBook-Air assignment_02 % ./assignment_02
Integer with the Largest Number of Divisors: 7560
Time in Seconds Spent to Calculate: 0.111700
stefantan@Stefans-MacBook-Air assignment_02 % █
```

Questions:

1. How long did it take your app to finish the job when using 1 thread?

It took my app 0.203504 seconds to finish the job of finding the integer between 1 and 10000 that has the largest number of divisors when using 1 thread.

2. How many threads can your machine run simultaneously?

My machine can run 100 threads simultaneously.

3. How long did it take your app to finish the job when using all available threads?

It took my app 0.088914 seconds to finish the job of finding the integer between 1 and 10000 that has the largest number of divisors when using all available threads.

4. Did you use task or data parallelization for this program? Why?

I used data parallelization for this program because the program is performing the same task on different subsets of the same data. The task in this case is calculating the number of divisors an integer has and the data are the integers from 1 to 10000. The integers from 1 to 10000 are divided into subsets where each thread will perform the same task of finding the number of divisors of an integer in the subset simultaneously.