

Use Callable and CompletableFuture to return a result from a task.

1. Write a program to find the integer in the range of 1 and 111111 that has the largest number of divisors. The program will divide the task into several concurrent sub-tasks. Each sub-task processes at most 1000 integers; and returns the integer with the largest number of divisors and its number of divisors.

After all the sub-tasks have been completed and their results returned, all the sub-task results are compared to get the final results, i.e. the integer with the largest number of divisors and its number of divisors among ALL the integers.

A sample output is given below for the range of integers between 1 and 2500.

In the range of 1 to 2500, 1680 has the most divisors of 40

2. Write a program that computes 2 Fibonacci values, one using sequential calculation (e.g. recursion) and another using asynchronous task with `CompletableFuture`. Compare the time taken for these two calculations (recursion vs asynchronous). Below is a sample output of the program.

```
run:
Sequential Calculation
  Calculating Fibonacci(30)
  Fibonacci(30) = 832040
  Start at 1684198345429    Finish at 1684198345432    Calculation time for Fibonacci(30) = 3 milliseconds
  Calculating Fibonacci(31)
  Fibonacci(31) = 1346269
  Start at 1684198345442    Finish at 1684198345447    Calculation time for Fibonacci(31) = 5 milliseconds
Earlier Start: 1684198345429 Later Finish 1684198345447
  Total calculation time = 18 milliseconds
Asynchronous Calculation
  Calculating Fibonacci(30)
  Calculating Fibonacci(31)
  Fibonacci(30) = 832040
  Start at 1684198345518    Finish at 1684198345521    Calculation time for Fibonacci(30) = 3 milliseconds
  Fibonacci(31) = 1346269
  Start at 1684198345518    Finish at 1684198345526    Calculation time for Fibonacci(31) = 8 milliseconds
Earlier Start: 1684198345518 Later Finish 1684198345526
  Total calculation time = 8 milliseconds
BUILD SUCCESSFUL (total time: 0 seconds)
```