Computer Organization Project 2 – MIPS Assembly 2

Due: 23:59, Apr. 3, 2024

In this project, you are required to write a **recursive program** for binomial coefficient computation. In combinatorics, the binomial coefficient, $\binom{n}{k}$, is the number of distinct k-element subsets of an n-element set. (i.e., the number of ways that k things can be 'chosen' from a set of n things.) Hence, $\binom{n}{k}$ is often read as "n choose k" and is called the choose function of n and k. There are several alternative notations, includes $C(n,k)$ and C_k^n. There are several ways to compute the binomial coefficient. A recursive definition is listed below.

$$C_k^n = C_k^{n-1} + C_{k-1}^{n-1}, \text{where } C_0^n = C_n^n = 1 \text{ and } 0 \leq k \leq n.$$

Please submit your source code according to the following rules:
1- Write down enough comments such that you would receive higher scores.
2- The filename is your student ID (e.g., B12345678.asm).

Example:

```
Please input first positive integer n:
10
Please input second positive integer k:
2
The binomial coefficient C(10, 2) = 45

Please input first positive integer n:
10
Please input second positive integer k:
5
The binomial coefficient C(10, 5) = 252
```