

Computer Organization and Structure

Homework #2
Due: 2006/11/4

Please write the following programs in MIPS assembly language.

1. **Max & Min:**

Write a program that reads any amount of integer inputs then output the biggest and smallest number among these integer.

Hint : You can read the inputs one by one.

2. **Euclidean Algorithm:**

Write a program to compute the greatest common divisor (GCD) of the given integers by using the Euclidean algorithm.

Hint : Make sure you really understand how Euclidean algorithm works!

Note : We want you to use “for loops” and subtract operations instead of division operations in this problem. You can still use division operations, but will result in a little penalty.

BONUS

Factorial:

Write a program to compute $n!$, for any given input n . You have to implement big integer operations in order to deal with large numbers.

Ex : $15! = 1307674368000$, which is too big to be stored in an integer variable (or register). So without big integer operations, you can't deal with this problem very well.

Hint: The real problem is how to deal with big integers, not how to compute factorial. Think carefully before you start!

Submission & Grading

The deadline is 11/4. Please send your source code to TAs by E-mail before 11:59PM of that day. The file name should be your student id like B91705056.rar. If you want to submit a newer edition of your code, please rename it like B91705056_1.rar.

Please remember that you still have to demo your code to TAs. On the demo day please

- a. hand-in the the documentation of your programs in HARD COPY.
- b. demo your program and explain the code to TAs.

The demo time will be hold on 11/6 and 11/8, at the night time. Please fill your name into the demo schedule in the class of 10/31. If you have any problem with this, please contact us before its too late.

Grading-- program : 60%, documentation : 40%.

NOTE

- a. You can use any resources you found on the net, or discuss with others. However, **ANY KIND OF COPIED CODES WILL GET ZERO POINTS.** (include the “shared” one)
- b. You can Email TAs for any problems you encountered. But we will not help you to do your homework!
- c. **We will not accept any code after the deadline. And we will not give you any points if you don't show up on the demo day.**