Assignment 1

Posted on: 1/8/14

Due on: 1/20/14 at 11:55 pm (SAKAI)

Part I:

Write a **C++** code for calculating the **GCD** (Greatest Common Divisor) between two **positive integer numbers.** You should use **Euclid's original subtraction based GCD** algorithm **(**not using modulo operator**).**

You should write a function following the prototype below:

```
int GCD(int a, int b)
```

Part II:

Write a **C++** for calculating **LCM** (Least Common Multiple) between two **positive integer numbers.** You should use **the output of the GCD function** you have written.

You should write a function following the prototype below:

```
int LCM(int a, int b, int gcd)
```

Submission Structure:

- You should write one **.h** file which must have two functions, **GCD and LCM** (as above). You can use other supporting functions (needed for **GCD or LCM**) in the **.h** file.
- You should write one **.cpp** file which should implement the following tasks:
  - Take two **positive integers** as input from the user **via standard input (i.e., keyboard).**
  - Call the function **GCD** using the two input integers and store the result in an integer**, say x**.
  - Call the function **LCM** using two input integers and the gcd output of the previous function, i.e., **x**.
  - Display the two integers and their **gcd** and **lcm** values, **e.g.,**

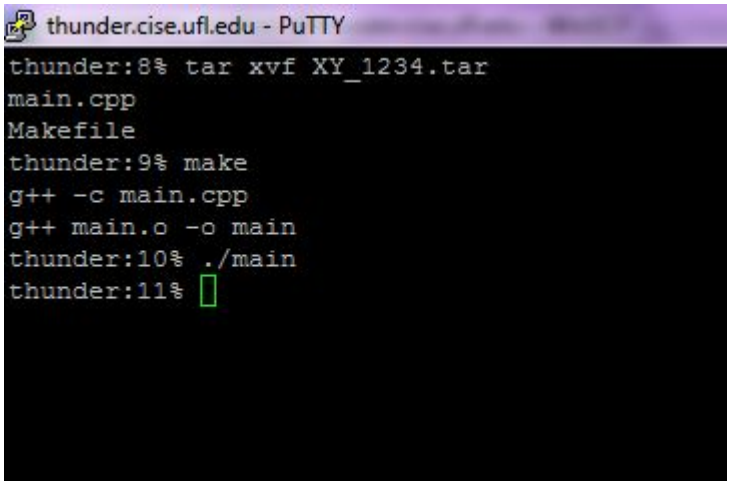
    ```
    The GCD and LCM between two integers 20 and 25 are : 5 and 100.
    ```
- You should write one **Makefile**.
- You should submit a **.tar** file through **SAKAI** consisting the **.h, .cpp and Makefile**.

Creating and Extracting a tar file:

- To create a tar file: **tar cvf (tar file name) (file 1) (file 2) (file 3)...**
- To extract the contents of a tar file: **tar xvf (tar file name)**

Things to Remember before Submission:

1. Check for the submission deadline (**both date and time**) and make sure you submit your **.tar file** before the deadline.
2. **LATE SUBMISSIONS ARE NOT ALLOWED.**
3. You should test your code on **thunder machine. TA will run your code on thunder machine and if it fails to compile there, you will be penalized.**
4. TA will only do **make** and then run the executable file, **e.g. ./main**.
5. You should submit in a single **.tar** file. The name of the **.tar** file should contain your name and UFID.
6. The program body of **GCD** and **LCM** should be in **.h** file, **not in .cpp file.**
7. You should test you submission in thunder machine before uploading it to **SAKAI**. The steps for that are given below.



Make sure your submission satify these above three steps to avoid penalty.