Assignment number 10 for Computer Architecture

The assignment is to create a MIPS program that corrects bad data using Hamming codes. ECC Hamming codes are explained on pages 420-424 in your text.

The program is to request the user to enter a 12-bit Hamming code and determine if it is correct or not. If correct, it is to display a message to that effect. If incorrect, it is to display a message saying it was incorrect and what the correct data is (the 12-bit Hamming code) again in hex. I will be testing only with single bit errors, so the program should be able to correct my tests just fine. You do not need to worry about multiple bit errors.

Make certain that you have lots of comments in your code as this is in MIPS. Also make the code neat: line up the command field, the register fields, and the comment fields (see page 134 in your text for a nice example).

For this assignment, turn in your code, a screenshot showing a working test case, and an observations file with comments about how much time you spent writing the programs and what you learned doing so.

Make certain that you have your name and the assignment number at the top of your observations file as well as at the top of your code files. As always, submit your work on the DropBox on the class website.

This assignment is worth 30 points.

This program is due on December 6 .

Note that this is an individual assignment, you are not to work with someone on it. It is OK to ask for and to give some help for a problem within the assignment, but the work must be your own. Note that you may freely borrow code from any example programs that I have placed out on class website.