# Homework # 4

First draft of the web page is due on **Wednesday, February 21, 2001.**
Final version of the web page is due on **Monday, March 5, 2001.**
*A useful example of a project from previous year is posted on the class web site.*

## General instructions

The goal of the project is to have fun while having a 'hands-on' experience with the concepts we were studying in class. The idea is to create an interactive web demonstration of a concept. Please observe the following guidelines:

- You can work in groups of two or three.
- The final result is an interactive web page (you hand in a url).
- By Wednesday, February 21, 2001, you are to choose your partner(s) and indicate your choices on a draft of the final web page (each group needs to e-mail ta188@paradise.caltech.edu the url of the draft web page).

## The Project

We would like to design an interactive, web-based, *LT* **Calculator** which implements following functions:

1. Input an *LT* function by entering its number of variables, $n$, and its weights, $w_0, .., w_n$.
2. Compute the value of the function for a given input.
3. Given two sets of weights, indicate whether or not they implement the same *LT* function.
4. Given a set of decimal weights convert them to integer weights without changing the function.
5. Given a set of integer weights modify them without affecting the function so that $\sum_{i=0}^{n} |w_i|$ is as small as possible.

## Grading of The Project

- Functionality and efficiency of the interactive LT calculator are the key criteria.
- Bonus points will be awarded for the ease of use of the interface and the elegance of the design.
- There will be an in-class competition (on **March 6, 2001**) to determine which group has the best minimization algorithm. First, and foremost, quality will be measured by the resulting sum of weights. The second criterion is time complexity, namely, the time it takes to complete the calculation.