You will implement a compiler for a miniature programming language. Implementing this language will help getting hands on practice to those concepts you learn in this course. Programs written in our language consist of functions. The execution always begins with the main function. Programmers are allowed to define their own functions.

This language has some representative features available in a C like programming language. The only data type allowed in this language is integer. This language allows traditional if construct and while construct along with the conventional definitions of expressions. The compiler is divided into a few phases and implemented in stages. The target ISA is  x86 (Pentium). The intermediate representation is to be abstract syntax tree notation.

**Notes on implementation**

Implementation of the project "must" be done in C. Use of C++ for program structuring purposes may be permitted. This is to ensure

1. that all data structures and algorithms are hand-coded without the use of high level libraries and
2. fairness of evaluation by maintaing a level playing field (or the same set of tools).   
   Implementation must run on Linux (irrespective of what tools/platforms you use for coding/development).

**Assignment Administration**

* Project may be worked in teams of two. Choose your own team (and submit the team details when asked in the class.) but you will not be allowed to change your team-mate later. *You will be given a batch number, and use it to communicate for any project related issues with us.* All assignment related issues communicated over email should contain in the subject line, your batch number.
* Each stage will be evaluated through a viva-voce.
* Marking will be based not only on the implementation but also on your understanding of the implementation and the ability to explain your code and answer questions.
* Each stage will posted with a specific deadline. Among 3 stages, a batch can afford to take one day extension for one of the stages without any penalty. Any submission beyond the one-day extension will carry an automatic depreciation by 25% - of the weight of that submission - per day of delay.
* Submissions should be only made through <http://intrabits>.

**Fair Practice**

* **Teams are permitted to discuss the project with each other but not allowed to see nor use each others' solutions.**
* **Plagiarism in any form is unacceptable. Project submissions will be rigorously scrutinized for plagiarism and the team members will be questioned to verify the ownership of the solution.**
* **Use of unfair means (refer to the Course Handout - Part II) will result in strict penalties and it is the prerogative of the Instructor(s) to decide on the penalty which may include referrals to the Discliplinary Committee.**