

Project Guidelines

Goal

This is a team project, where each team needs to develop a **compiler** for a basic experimental programming language that is largely designed by the team. Throughout the project, the TA will introduce a couple of very useful tools (`flex` and `bison`) to help you implement the compiler.

Team

The size of a team is **3 - 4 students**. A team gets a team score regardless of the team size. You can only form teams with students from **the same lab section** (or you may find a student in the other section who is willing to switch).

Requirements

Requirements will be provided at the beginning of each phase of the project.

Project Management

Each team needs to work on a Github repository (assigned by our TA). Each team member needs to make commits on a regular basis. The number of commits will be used as a reference for evaluating individual contributions.

Grading

Each team will be assigned a team grade based on the completion and quality of the developed compiler. On top of that, each team member is assigned a **contribution percentage**, based on peer evaluation (from teammates). We will also use Github commits as a reference. Finally, we calculate the individual grade of each team member.

Timeline (Tentative)

Lab	Task	Phase Due
Lab 1 (Sep 26th)	Form your team; Design your language; Write code examples for each language construct	Informal language specification [4 points]
Lab 2 (Oct 3rd)	Learn <i>flex</i> tool; Work on your tokenizer	
Lab 3 (Oct 10th)	Demo your tokenizer to the TA;	Tokenizer [8 points]
Lab 4 (Oct 17th)	Learn <i>Bison</i> tool	
Lab 5 (Oct 24th)	Work on your parser	
Lab 6 (Oct 31st)	Demo your parser to the TA; Learn <code>MIL</code> code generation using <i>Bison</i>	Parser [10 points]
Lab 7 (Nov 7th)	Work on the 1st half of code generator	
Lab 8 (Nov 14th)	Demo the 1st half of code generator	Code generator [8 points]
Lab 9 (Nov 21st)	Work on the 2nd half of code generator	
Lab 10 (Nov 28th)	Demo the 2nd half of code generator	Code generator [10 points]

Submission/demo policy

For each submission/demo, the team needs to create a new “snapshot” (e.g., a tag) on Github.

A late submission/demo can still be accepted if it is submitted **within a week**, with a **20% grade deduction**.