CS 444

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1 Administrata

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1.1 Grading

- Project - 75%
  - Marmoset tests - 60% (of total)
  - Written report - 15% (of total)
- Final exam - 25%

The project is split into 5 assignments – approximately 1 month for each.

We may not use any tool whose output is code except for things that are provided and things we wrote ourselves.

Learn x86 assembly for code generation

Ask about scala parser combinators =(

2 Introduction

2.1 What is a compiler?

Find an isomorphic program in a different language.

Phases:

- scan
- parse

- weed
- symbol table
- name resolution
- type checking
- static analysis
- ——-backend begins——
- intermediate form
- optimize
- code generation

Split into two phases – frontend: the analysis; figuring out what the source program means. Backend: the synthesis; building target code.

2.2 Review of Formal Languages

LATEX IS SO STUPID
Definition 'alphabet': A finite set of symbols Σ
Definition 'word': A finite sequence of words from Σ
Definition 'language': A set of words over Σ
Definition 'Regular language': Specified by a regular expression, and can be recognized by a DFA