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EECS 662
Project 2

CFAE Language:

```
CFAE$ ::= number |
          id |
          { + CFAE CFAE } |
          { - CFAE CFAE } |
          { * CFAE CFAE } |
          { / CFAE CFAE } |
          { fun id CFAE } |
          { CFAE CFAE } |
          { if0 CFAE CFAE CFAE }
```
Taken from Perry Alexander's course website for EECS 662 Programming Languages (Fall 2015)

The CFAE Language introduces the idea of deferred substitution to replace the *subst* function from project 1 (the WAE and WAEE languages). Instead of immediately substituting, we keep a list of identifier/value pairs in a mutable list. This list is added to as a new identifier is parsed, and is searched when an expression is evaluated. The CFAE Language also implements an *if* statement.

CFWAE Language:

```
CFWAE ::=
      number | id |
        { + CFWAE CFWAE } |
        { - CFWAE CFWAE } |
        { * CFWAE CFWAE } |
        { / CFWAE CFWAE } |
        { fun id CFWAE } |
        { CFWAE CFWAE } |
        { if0 CFWAE CFWAE CFWAE }
        { with { id CFWAE } CFWAE }
        { cond0 { CFWAE CFWAE }* CFWAE }
```
Taken from Perry Alexander's course website for EECS 662 Programming Languages (Fall 2015)

The CFWAE Language reintroduces the *with* statement and also implements a *cond* statement. The Interesting thing about the CFWAE Language is that it is not directly interpreted. Instead, an elaborator is used to essentially translate CFWAE syntax into CFAE syntax and evaluate it.

Program Testing Instructions:
1. Open the source code *Proj2-Ex1-CFAE.rkt* or *Proj2-Ex2-CFWAE.rkt* in DrRacket
2. Run the code (cmd + r)
3. The tests will run automatically
4. Review the output