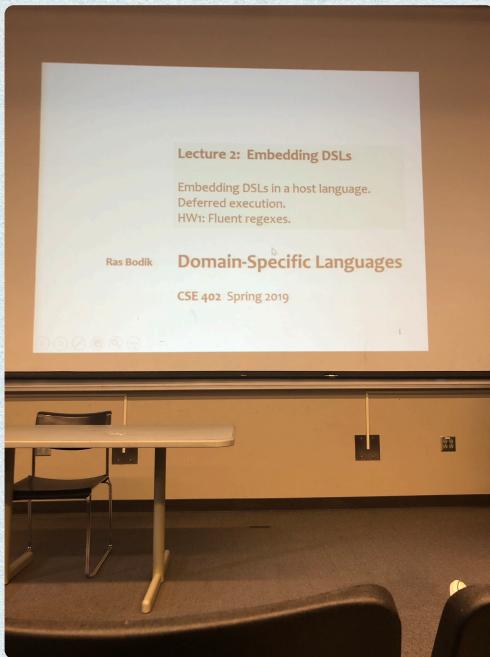
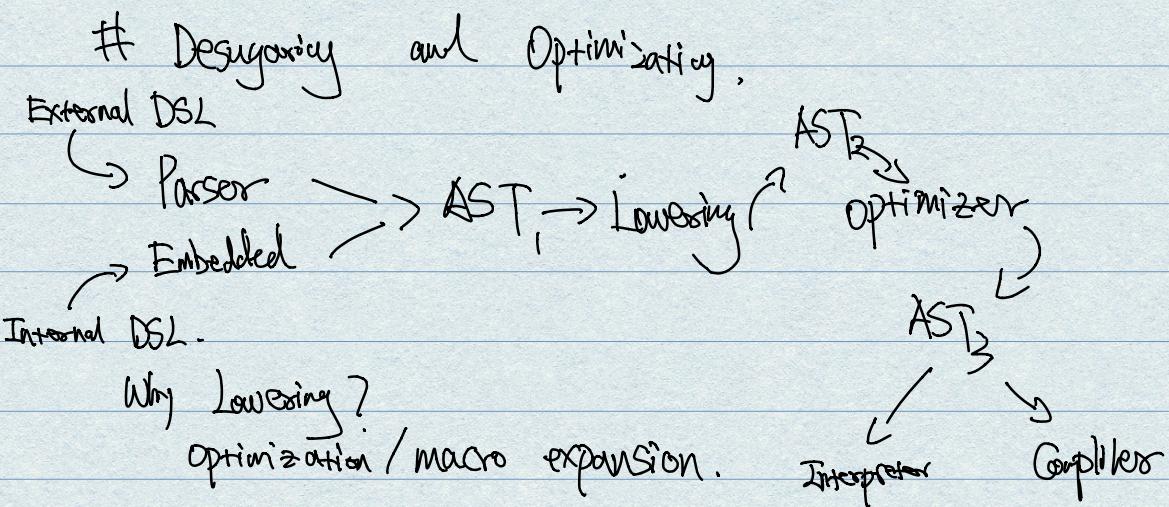


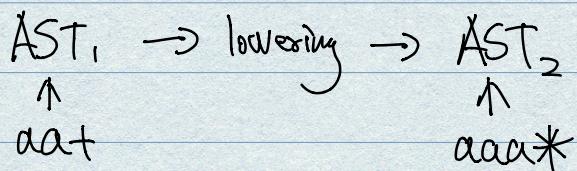
# Lecture 2

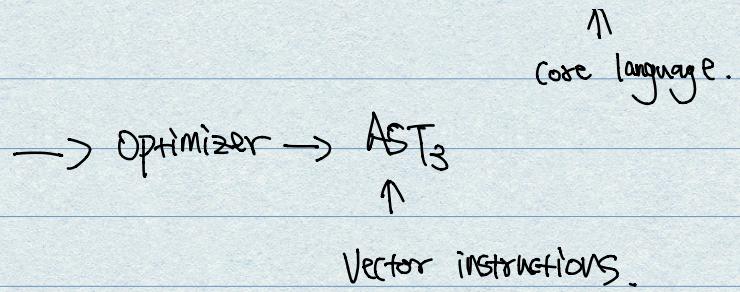


## Embedding DSLs.



E.g. Regex.





# Is the Program actually translated to AST?

- Yes : deep embedding  
enables optimization.

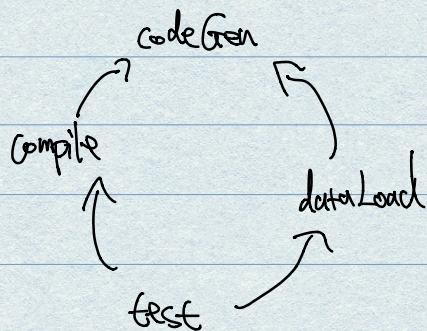
- No : shadow embedding  
⇒ used in HW,

Do not necessarily build an AST

3 methods for embedding a DSL into host language.

- rule-based syntax
- Operator overloading
- fluent syntax (aka call chaining)

⇒ Case study : rattle by Jim Weirich.



Ruby is the host language  
⇒ rake files are legal ruby files

Example rakefile

```
task :codeGen do
  # do the code generation
end
task :compile => :codeGen do
  # do the compilation
end
task :dataLoad => :codeGen do
  # load the test data
end
task :test => [:compile, :dataLoad] do
  # run the tests
end
```

procedure

task

argument

procedure call

Ruby symbol

task(hash)

hash table literal

dictionary

block (closure)

array

22

⇒ What is produced?

- dependency graph ("AST")

⇒ Who executes the rules?

- runtime in response.

# Operator Overloading.

$xx \cdot xy \cdot xty$ .

