Meeting 26: 4/16/2015: Final Exam Review

Announcements

- Guest lecture next Tuesday
- Final exam next Thursday
- Final project presentations following week.
- FCQs next week (online for distance students, Tuesday for in class)

Course Survey

- Course overall: 4.9 mean, 5 median (6 max)
- Instructor overall: 5.3 mean, 5 median (6 max)
- "This course has made me a stronger software engineer and computer scientist."*: 100%
  Strongly Agree/Weakly Agree, 66% Strongly Agree

- I read all of your comments, which I definitely reflect on carefully to improve. Thank you!
- FCQs are important!

Project

- Define stages so that you have something to show.
- Stages become (1) a set of test cases that are easy, (2) a set of test cases that you expect to handle by the end, and (3) a set of test cases that will be stretch.
- Be concrete by working out examples.
- Undergrad vs. grad. Grad asks a small amount of a literature survey (e.g., a particular research paper that you’re build on).
Presentation

An advertisement for your paper. Show off your excitement for your project.

Introduction

1. A catch.
2. What is the problem you’re solving?
3. Why is this problem important (i.e., why you should care) and this problem hard (i.e., why hasn’t it been solved before)?
4. What is my contribution (a claim)?

[Roughly 1-2 slides per point. One slide = one sentence.]

Body

1. A sense of contribution 1
2. A sense of contribution 2
3. Results of an evaluation that supports my claim

Conclusion

1. What is my contribution?
2. What follows from my contribution?

Paper

• Abstract
  • 4 sentences. The same as Introduction plus a sentence on “What follows from my contribution?”

• Introduction
  • Same as for the presentation (except roughly 1-2 paragraphs per point)

• Body
  • Same as for presentation (except 1 section per point)
• Related Work (for research papers)
• Conclusion
  • Same as for presentation (except a paragraph per point)
L: 
0. \[a, x, y, z^3\] 
1. while \( x \neq 10 \): 
2. \[a, x, y, z^3\] 
3. \(b = 0\) 
4. \[a, b, x, y, z^3\] 
5. \(\text{while}\ y = 20 :\) 
6. if \(z = 30\) : 
7. \[a, b, x, y, z^3\] 
8. \(a = a + 1\) 
9. \(y = y + 1\) 
10. \[e, a, x, y, b, z^3\] 
11. \(y = z + 1\) 
12. \[a, x, x, y, z^3\] 
13. \[a, x, y, z^3\]

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Static vs dynamic scoping

- Compile-time
  - before execution
  - code
  - \(x = 10\)
  - \(def f() :\)
  - \(x = c\)
  - \(y = x\)
  - \(print y\)
- Run-time
  - during execution
  - code + input
  - what variable does a var use correspond to
```python
def g():
    return x

def h(x):
    print(g())

h(45)
print(x)
```

HW1: flattening
HW2: parse - grammar, LALR(1)
HW3: register allocation - liveness, interference graph
HW4: explicit / ad-hoc polymorphism (type checking)
HW5: function as values
    closures
    closure on variable addresses ∈ Kapil
have classes, objects, methods