



# Project Checkpoint 2

Graph-based Adaptive Diagnosis

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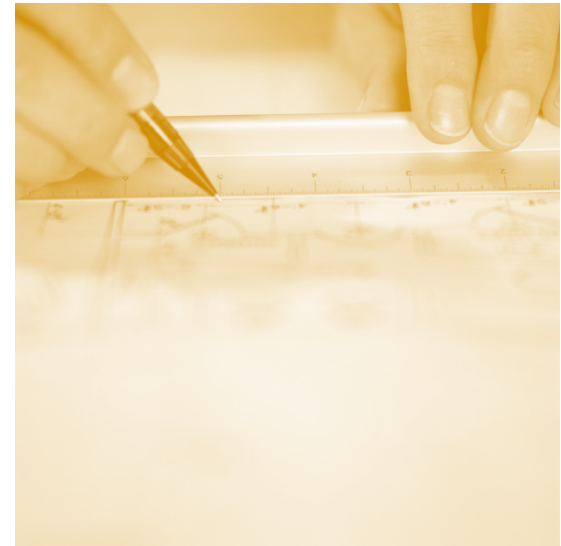
Advisor: Professor Amit Sahai

CS 194

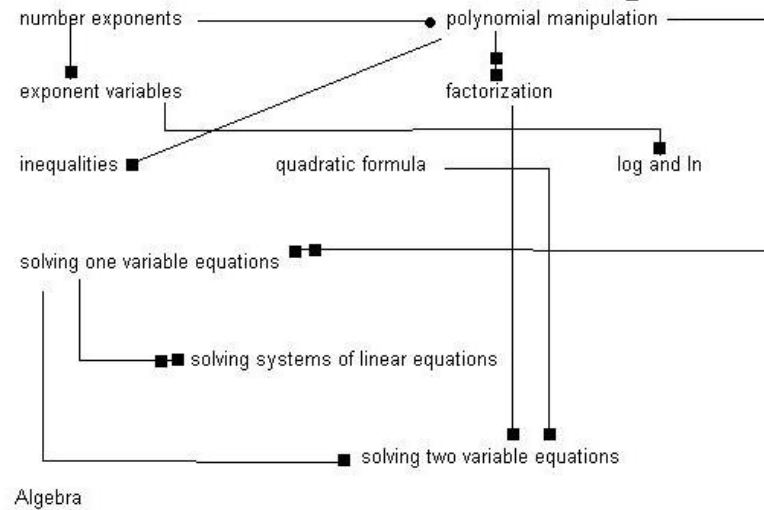
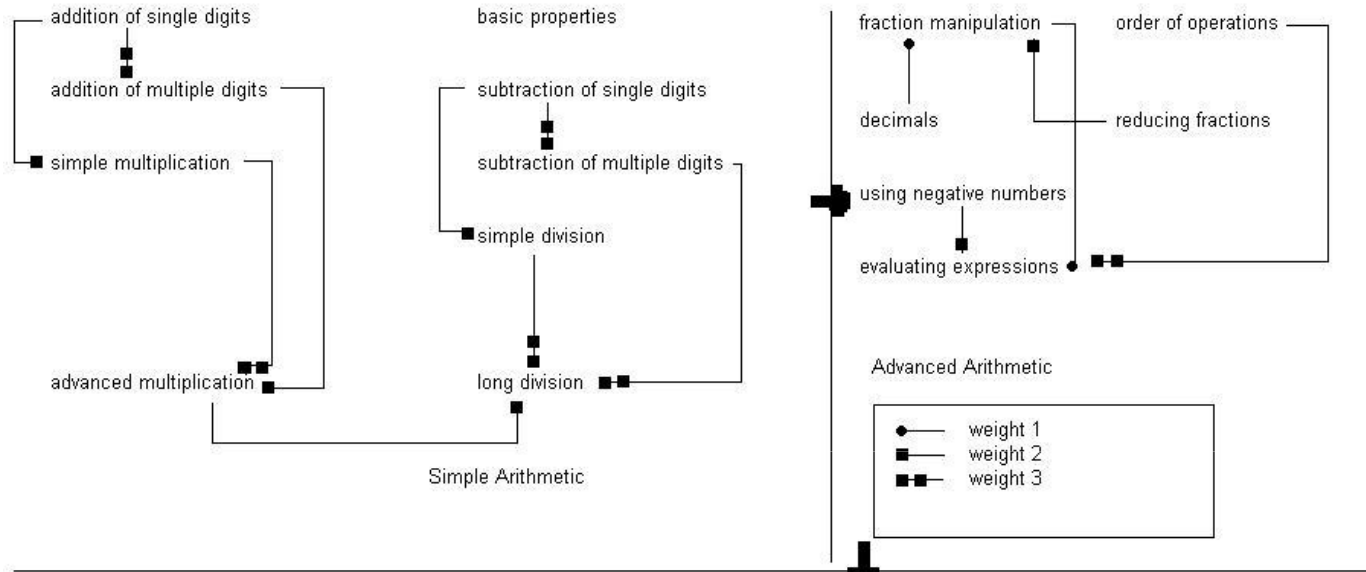
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# Proposed Action

- Increase number of nodes/size of library
- Refine test algorithm
- Compare test efficiency
- Get approval for research study



# Accomplishments



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- Tripled the number of nodes (from 8 to 26)
- Divided the nodes into various regions based on progression of learning/difficulty
- Changed the test algorithm
  - 2 parts:
    - 1) Identifying the border region (where everything below is understood and everything above is not mastered)
    - 2) Exploring the nodes in this region
- Turned in addendum to the UCLA OPRS (hopefully will be approved soon)



# Difficulties/Surprises

- Turn human reasoning into code
  - Planned pseudocode has different actions based on specific cases (evaluate like a human tester), difficult turning this reasoning into general code
- When results are ambiguous (not sure if student has mastered a certain region)
  - do we want to evaluate the harder region (and scare them/make them feel bad?) or evaluate the easier region (perhaps not as accurate)
- How many questions is enough to truly get a sense of the student's capability
  - Maybe asking 3 all the time is too many? (currently asking 2 sometimes depending on the circumstances)
- How many points to deduct
  - Deduct points depending on whether it is the nth question asked (more deducted from questions answered incorrectly later)



# Steps/Deliverables

- **Spring break:**
  - Expand the library from 3 regions to 6 regions
  - Test code thoroughly for bugs
  - Adjust code so that user can specify how many questions max to ask (and test will adjust)
- **Week 2 spring quarter:**
  - Improve code through testing (answer some of the questions on the previous slide by comparing results)
- **Week 3 – 4 spring quarter:**
  - Conduct testing at middle school to see how well the test works
- **By week 6 spring quarter:**
  - Have results analyzed and more changes to reflect results