Computer-Adaptive Student Evaluation System

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Advisor: Professor Amit Sahai

Class: CS 194 Research Seminar

Main idea for project: Professor Amit Sahai

Duration of research: 3 quarters

Student Evaluation System

-Accurately assesses the level of students' understanding

-Teachers will be able to better meet the needs of their students.

-Needs to accurately identify the topics that are not understood from just a few test questions.

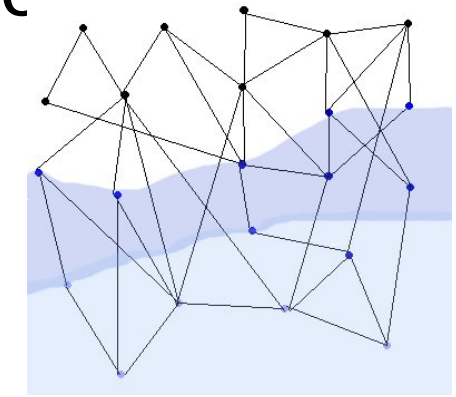
Approach

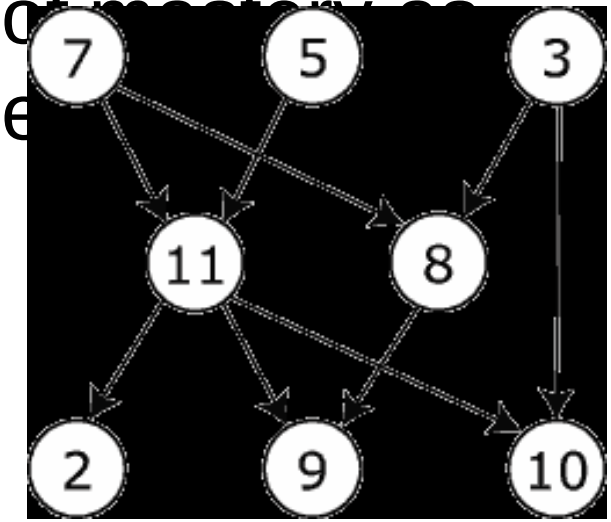
Previous approaches:

-Computer-Adaptive Testing (tailored testing)

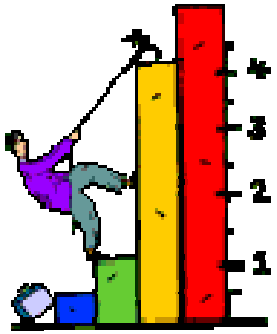
My approach:

- Traversal through a directed graph of subtopics
- Calculate the student's level of mastery as well as its confidence in that e





Challenges



Things that might prove to be hard:

- Figuring out the best and most effective way to evaluate student answers
- How to test students without asking too many questions
- Applying for approval and testing actual test subjects

Fall back plan / Testing

-Subject testing: has to go through OPRS for approval.

-Possible ways to conduct testing:

- high school or middle school students
- Using college students
- internet survey

-Current plan includes applying for all three possibilities

Methodology, Milestones & Deliverables

By end of Fall quarter:

1) Create initial version of directed graph
2) Begin amassing data base of questions and problems
3) Create a working algorithm that can create a test and evaluate answers.
4) Apply for approval from UCLA Office for Protection of Research Subjects

By end of Winter quarter:

5) Refine both directed graph and algorithm
6) Begin testing part of research: get some feedback from test subjects

By end of Spring quarter:

7) Conduct more tests
8) Analyze experimental results
9) Write final project thesis

Conclusion

This research is cool because

-It hasn’t been done before

-America doesn’t focus enough on education

-This could help and make education more effective