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CS360

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Final Paper Outline

* Intro
  + Outline the project we did
    - We created a an evaluation system that grades student proofs involving functional dependencies
      * Briefly explain what functional dependencies are
        + Give an example
      * The grading system uses set definitions
* Theory
  + Logical Consequence of F
  + Attribute Closure
  + Functional dependency set definitions
* Previous Failed Solutions???
  + F\*
    - Book of truth
      * Are the FDS in it
      * If yes then good
      * If not no
      * Computationally infeasible
      * Back to the start
* Methodology
  + Overview of how we verified if the proofs for the logical consequence of F and attribute closure are correct
    - We used a binary implementation: We represented the functional dependencies in binary
      * Give examples
      * Enabled us to see if the functional dependency derived and the initial functional dependency met the set definitions relevant to the derivation
        + Done using binary set operators

Demonstrate how you can test if a set is a subset of another set using the binary and operator

* + - * + If the definition is met between the initial and derived functional dependency, then we can say the step is valid
    - Calculate correct answer of what the final step of the proof should be
    - If all steps the student submitted are valid and the final answer/step the student submitted matches the correct answer we calculated, then the proof for if a functional dependency is the logical consequence of a set of functional dependencies is correct
      * Returned 1 for success and 0 for failure as well as the step of where the proof failed
        + Only covers up to where it first fails

So doesn’t check for additional failures after the first found failure

* + Compare how the implementation for the logical consequence and attribute closure how methods varied
  + Database design decisions
* Design Features of Interface we created
  + Mention that the interface we created only exists to verify that the code works
    - The code still needs to be integrated with project 360
      * Are code should be able to be translated over there cleanly
  + Describe the interface
  + Student feedback
  + Show pictures
* Future Improvements
  + Address other question types
  + Better feedback and scoring
    - Partial credit
    - Indicate unnecessary steps
    - Indicate other invalid steps
* Our Accomplishments
  + We did create an evaluation algorithms for both:
    - The logical consequence of F
    - Attribute closure
  + We designed a database and successfully queried it
  + We created a testing display that effectively shows testing results.
  + We laid the groundwork for the project to be finished in the future.
    - A lot of brainstorming and careful thought went into how we were going to implement the evaluation algorithms
      * Our work and its binary implementation can be referenced by future groups
        + We did not have this as we had to creatively design this solution ourselves

Future groups will not have to spend time doing this like we had to

* Conclusion