Pre-Assessment Tool

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Problem Statement

Students waste money on expensive tests:
Web based tool that predicts class placement via adaptive exams

- Math & English

- Outputs:
  - Predicted Placement
  - Resources

- Collects data for statistical analysis

- Stakeholders: ELAC, ISU, DMACC, JCTC

Functional Requirements

- Take math and English tests

- View results, placement and resources

- Admin: CRUD Tests, Topics, Questions

- Admin: Review student results

- Admin: CRUD Resources

Demo

Original Design

- Static, skeleton design

- PHP

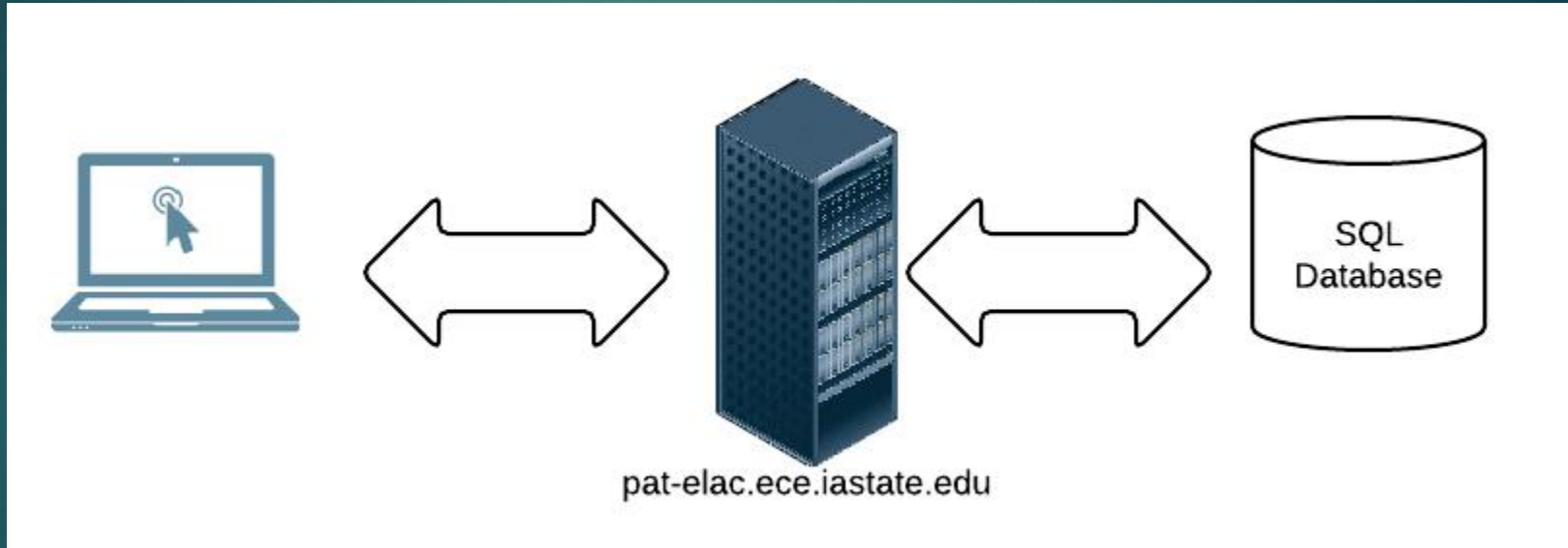- Basic functionality
  - Displays test
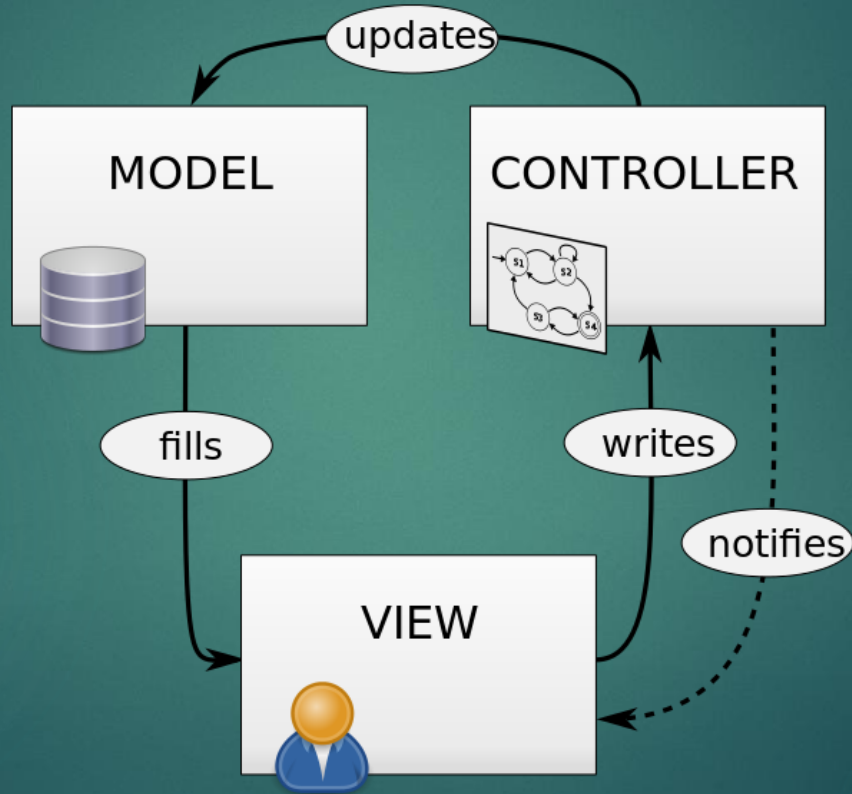
Original Design

Essential expansions

- Login System
  - Secure and customizable

- Administrative System
  - Review student scores
  - Tweak PAT behavior

- Resources System
  - Useful feedback for students

Current Design

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Current Design

Current Design

- ASP.Net MVC Framework
  - Pros
    - Simple design principles
    - Easy to integrate with other frameworks
  - Cons
    - New to our team
    - Difficult to deploy

Detailed Design - Models

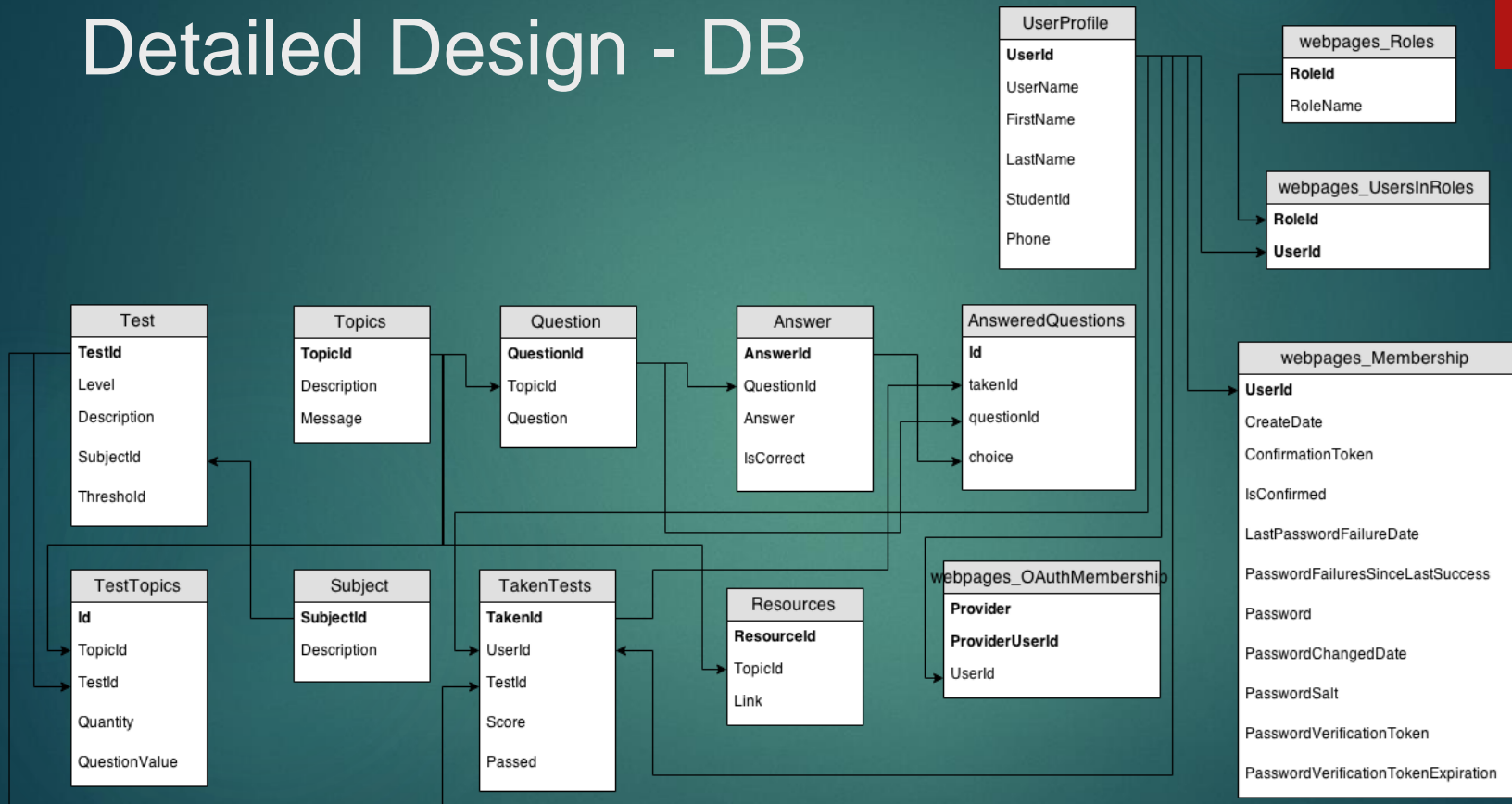| Name	Description
Student	Defines a student using our system
Admin	Defines an administrator using our systems
Test	Represents a test/set of questions
Question	Represents a test used for quizzes
Topics	Represents a topic related to questions
Resource	Represents the set of resources available to users.

Detailed Design - Views

Name	Description
Login	Defines the login page
Register	Defines the page that allows registration
EditUser	Defines the page that allows users to change their information
StudentAccount	Defines the student account page
AdminAccount	Defines the admin account page
Test	Defines the page for tests
ReviewStudents	Defines the page for admins to review student results

Detailed Design - Controllers

Name	Description
Home	Controls flow between accounts and test
Account	Controls login and registration of a user
Test	Controls flow of test data
CRUD	Controls modifications of tests, questions and topics

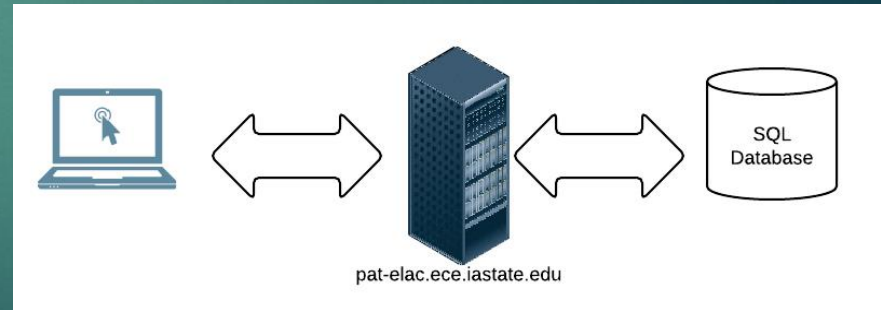Detailed Design - DB

Detailed Design - CRUD

- Create
  - Disallow duplicate questions
  - Validates inputted data

- Read

- Update
  - Error check against known conflicts

- Delete
  - Disallow if referenced elsewhere
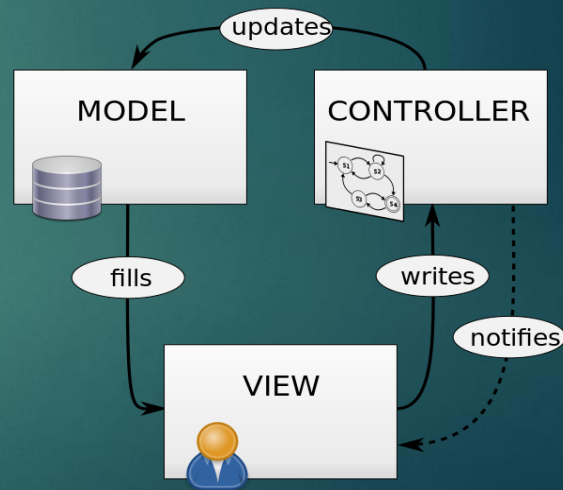 - Verify successful deletion

Technical Challenges

- Server/Database Interface
  - Configuring Windows Server
    - Inexperience with deployment
    - Limited database-application interfacing experience
  - Local Deployments
    - Unreliable local host

- Meeting Technical Requirements
  - Scalability & Reusability

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SQL Database

Technical Challenges

- Test Integration Hierarchy
    - Complex data retrieval structure
    - Total model interdependency

- Adapting the team to a new framework
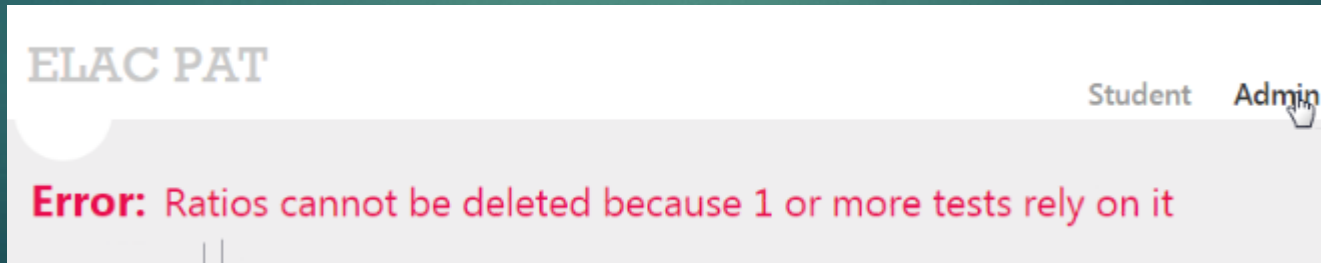   - MVC, C#, Visual Studio
    - ASP.NET Razor

Test Plan

- Usability tests
  - Functional testing

- Regression tests
  - Ensure commits do not introduce errors

- Mobile development testing

Scenarios

- Student tries to access admin functions
  - Deny access and redirect

- Admin tries to delete questions needed for test
  - Do not allow

- User attempts to submit an invalid model
  - Inform user what needs updated

ELAC PAT   Student   Admin

Error: Ratios cannot be deleted because 1 or more tests rely on it

Current Project Status

- Minimal Viable Product
  - All CRUD is implemented
  - Tests can be taken and reviewed
  - Resource page is available

- Working on mobile views

- Client is beginning to test