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Beta Presentation

clUML: A Browser-based UML Editor

The Capstone Experience

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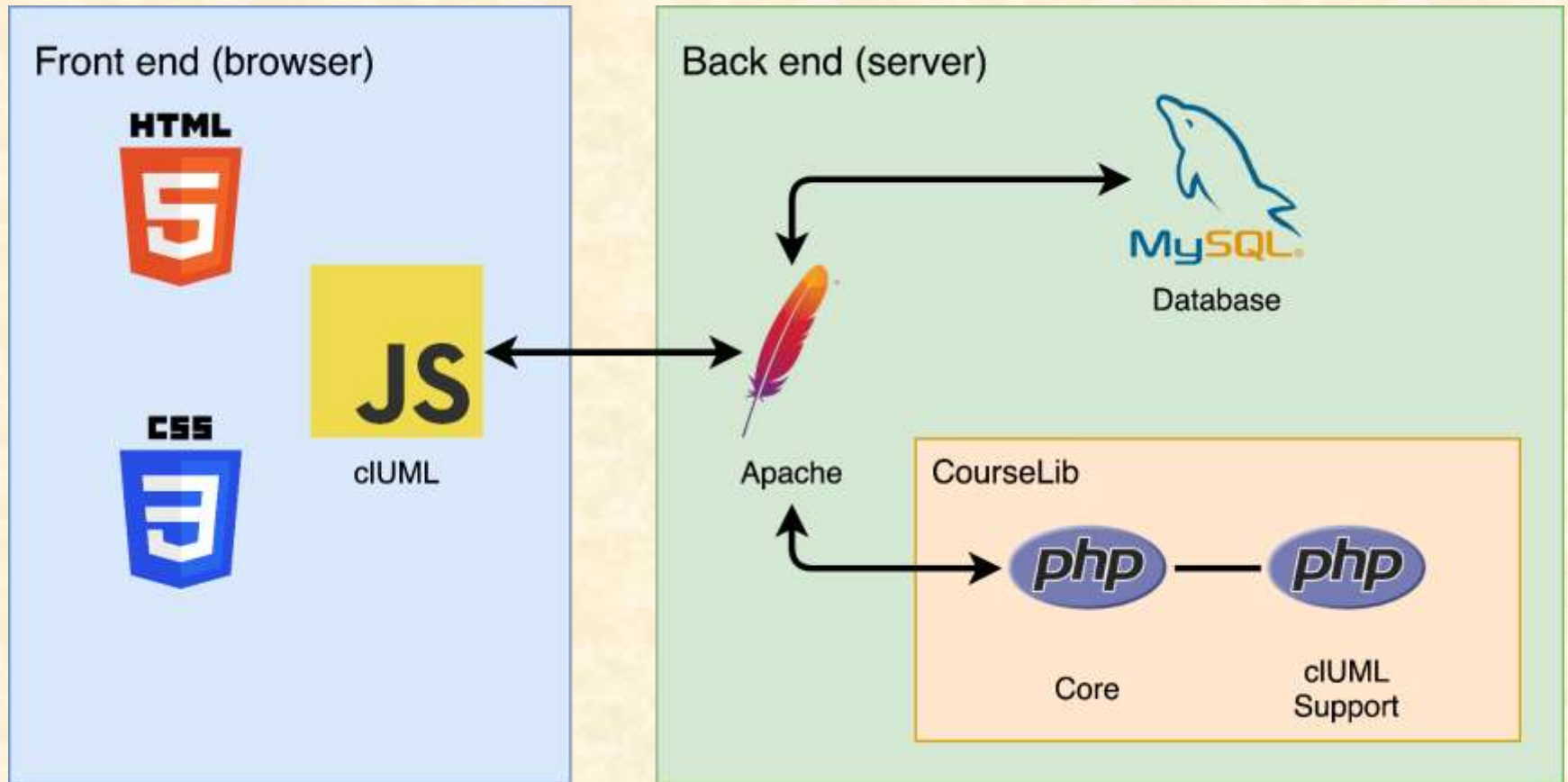
*From Students...
...to Professionals*

Project Overview

- Unified Modeling Language (UML) diagram editor embedded in a web page
- Made for CSE 335's CourseLib-based website
- Simpler and more customizable than Visual Paradigm; no academic license needed
- Students and instructors always interact with real UML diagrams instead of uploading screenshots of Visual Paradigm
- Supports assignments, quizzes, and demos



System Architecture



clUML in an Assignment Page

The screenshot displays a web browser window with the address bar showing 'localhost:8888/3c3grQ/page1'. The page title is 'CSE335 Design 3: Page 1'. Below the title, there is a problem description:

Problem Description: You are asked to write a program to track participants in the Ice Bucket Challenge. In this challenge people make a donation to the ALS association, then dump a bucket of ice over their head. They then challenge others to also participate in the challenge.

Your program needs to keep track of the participants in the challenge. A person has a name, an amount of the donation they have made, and an indication if they completed the challenge. We keep track of the date of every challenge.

Remember to save your diagram to the page by pressing File/Save.

The main content area shows a UML class diagram editor. The diagram includes the following classes and relationships:

- IceBucketChallenge**: A class with a self-referencing association.
- Participant**: A class with attributes: name: string, donation: double, completed: boolean.
- Challenge**: A class with an attribute: date: Date.

Relationships shown in the diagram:

- IceBucketChallenge** has a self-referencing association.
- IceBucketChallenge** has a 1-to-many association with **Participant**.
- Participant** has a 1-to-many association with **Challenge**.
- Challenge** has a many-to-many association with **Challenge**, labeled as **challenge** and **challenge**.

The interface includes a menu bar (File, Edit, Options, Help) and a toolbar on the left with icons for Class, Interface, Package, Association, Inheritance, Composition, and Aggregation. A toolbar at the bottom contains a 'New' button.



Inline Demo

The screenshot displays a web-based UML class diagram editor. At the top, a browser window shows the URL 'localhost:8080/coverage/3/step2'. The main content area is titled 'CSE335 Design 3: Page 2' and contains the text: 'Here is what the correct Class diagram looks like. Fix your diagram if it does not match.'

The reference class diagram is enclosed in a pink box and features the following elements:

- Challenge** class: Attributes include 'id: int'.
- Participant** class: Attributes include 'name: string', 'description: double', and 'completed: boolean'.
- Challenge** class (bottom): Attributes include 'id: int'.
- System** class: Attributes include 'participants'.
- Relationships:**
 - Challenge (top) has a 1-to-many relationship with Challenge (bottom) labeled 'challenges'.
 - Challenge (top) has a 1-to-many relationship with Participant labeled 'challenges'.
 - Participant has a 1-to-many relationship with Challenge (bottom) labeled 'challenges'.
 - System has a 1-to-many relationship with Participant labeled 'participants'.

The editor interface includes a menu bar (File, Edit, Options, Help), a toolbar with icons for Class, Interface, Case, Package, Association, Inheritance, Composition, Aggregation, and Containment, and a workspace showing a single class box with attributes 'id: int' and 'description: string'. A footer at the bottom right reads 'Course Tools by Dr. Charles S. Deane'.



clUML in a Quiz

The screenshot displays a web browser window with the title "CSE335 Design 3: clUML Quiz". The main content area is divided into two sections. The top section, titled "QUESTION DESCRIPTION", contains the text "Make a UML diagram for the following scenario:" and "QUESTION DESCRIPTION:" followed by a "Submit" button. The bottom section, titled "Staff Question Previews", contains the text "These links allow you to preview quiz questions. If the question is randomly selected from multiple files, the files appear below the question." and "This part of the page appears for staff members only:". Below this text is a preview for "Question 1" which shows a class diagram element: a class box with the name "Class" and the signature "operation: string" and "(operation): string".

The browser window also shows a menu bar with "File", "Edit", "Tools", "Options", and "Help". The bottom of the browser window shows a status bar with "© Course Tools by Dr. Charles E. Dool" and a "Print" button.



Split Screen Demo

CSE335 Design 3: Page 3

Create an Object Diagram based on this Scenario: Taylor Swift contributed \$100 and completed the challenge on 8/16/14 she challenged Emma Stone and Selena Gomez. Selena Gomez completed the challenge and on 8/24/14 she nominated James Franco.

The screenshot shows a UML modeling tool interface with a split-screen view. The top bar contains the title 'CSE335 Design 3: Page 3' and a navigation toolbar. Below the title is a text box with a scenario: 'Create an Object Diagram based on this Scenario: Taylor Swift contributed \$100 and completed the challenge on 8/16/14 she challenged Emma Stone and Selena Gomez. Selena Gomez completed the challenge and on 8/24/14 she nominated James Franco.' The main workspace is divided into two panes. The left pane, titled 'main x', shows a class diagram for a 'System' package. It includes three classes: 'IceBucketChallenge' (a subclass of 'System'), 'Participant' (with attributes 'name: string', 'donation: double', and 'completed: boolean'), and 'Challenge' (with attribute 'date: Date'). Relationships include 'IceBucketChallenge' having 'participants' (multiplicity 1 to *), 'Participant' having 'challenges' (multiplicity 1 to *), 'Challenge' having 'challengedBy' (multiplicity * to *), and 'Participant' having 'challengee' (multiplicity 1 to 1). The right pane, titled 'obj x', shows an object diagram. It contains three objects: 'ben : Participant' (name = "Benny Scholz", donation = 100, completed = true), 'luke : Participant' (name = "Luke Soumis", completed = false), and 'challenge1 : Challenge' (date = 4/4/24). Lines connect 'ben' to 'challenge1' (labeled 'challenge'), and 'luke' to 'challenge1' (labeled 'challenge'). A context menu is open over the 'luke' object, showing options: 'Edit Multiplicity/Label', 'Swap Start and End', and 'Delete Link'. The bottom of the interface features a toolbar with an 'Interact!' button and a footer that reads 'Course Tools by Dr. Charles S. Owen'.



What's left to do?

- All features in project requirements implemented
- Stretch Goals
 - Diagram converter – XMI (export from Visual Paradigm) to clUML
 - Team support
- Other Tasks
 - Bug fixes
 - Test rigorously – build real diagrams on many different devices
 - Visual refinements



Questions?

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