● **REQUIREMENTS**:

A model that shows 3 level of questions for any programming language (php, react, html, node, css , kotlin, flutter, xml)
•beginner •medium •advance
- main features:

- every time it runs it has to show different questions than the previous for each respectively.
- Check answers for each and give feedback, progress (i.e: 8/10 are correct)
- Compare progress with others (leadership board)

● **Use Case 1:** Generate Quiz Questions

Actors:
User (student attempting the quiz)
System (LLM model + Backend)
Description:
The user selects a programming language (PHP, React, HTML, Node.js, JavaScript or other) and a difficulty level (Beginner, Medium, Advanced).
The system requests an LLM to generate a unique question based on these parameters.
The LLM returns a new question that the user hasn't seen before.
The system displays the question and waits for user input.
Preconditions:
User is logged in.
LLM has been trained or fine-tuned to generate coding questions.
Postconditions:
A unique question is displayed to the user.
Exceptions:
LLM API fails → Show a fallback question from a stored database.

● **Use Case 2:** Answer Submission & Code Execution

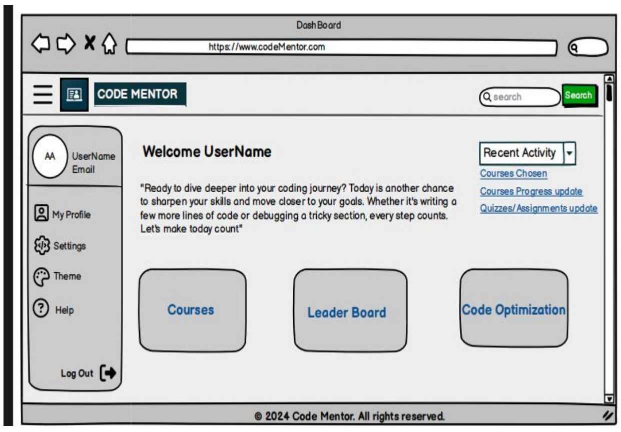
Actors:
User (submitting a code answer)
System (Backend, Code Execution Engine)
Description:
User writes a code solution and clicks Submit.
The system sends the code to the backend.
The backend runs the code against predefined test cases.
The backend validates if the output matches expected results.
The system returns feedback:
Correct Answer ✅ (if all test cases pass).
Incorrect Answer ❌ (showing test case failures).
The system updates the user's progress (e.g., 8/10 correct).
Preconditions:
User must submit valid syntax for execution.
Test cases must be defined for validation.
Postconditions:
User gets feedback on their answer.
Exceptions:
Infinite loop detected → Terminate execution & show a warning.
Syntax errors → Show error message instead of running the code.

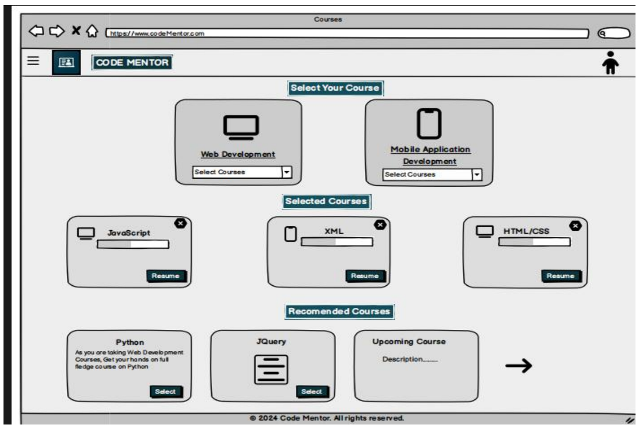
- **Use Case 3:** Generate Explanations for Questions

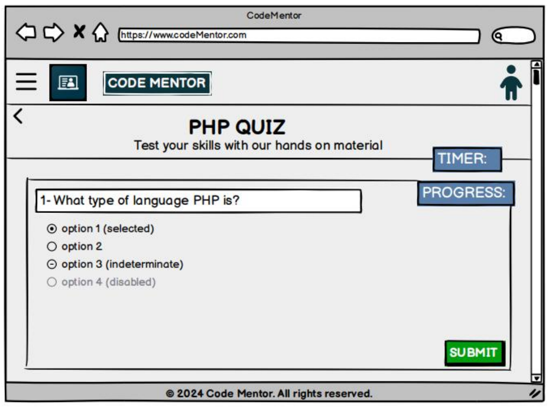
Actors:
User (after attempting a question)
System (LLM model)
Description:
User submits an answer (correct or incorrect).
The system requests an explanation from the LLM.
The LLM generates an explanation based on:
Why the correct answer is right.
Why incorrect answers are wrong.
Alternative approaches.
The explanation is displayed to the user.
Preconditions:
The system should track correct/incorrect attempts.
Postconditions:
The user receives an AI-generated explanation.
Exceptions:
If LLM fails, show a pre-written explanation from a database.

- **Use Case 4:** Leaderboard & User Progress Comparison

Actors:
User (viewing leaderboard)
System (Backend storing quiz data)
Description:
The system stores each user's progress (e.g., correct answers, time taken).
Users can view a Leaderboard ranking them based on:
Accuracy (percentage of correct answers).
Speed (average time per question).
Users can compare their performance with friends or global users.
Preconditions:
The system tracks user quiz performance.
Postconditions:
Users see a ranked list of performance.
Exceptions:
If data is unavailable, show a message: "Leaderboard data not available at the moment." **(crafted interfaces to have a view)**


"Ready to dive deeper into your coding journey? Today is another chance to sharpen your skills and move closer to your goals. Whether it's writing a few more lines of code or debugging a tricky section, every step counts. Let's make today count"

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CODE MENTOR

PHP QUIZ

Test your skills with our hands on material

TIMER:

PROGRESS:

1- What type of language PHP is?

- option 1 (selected)
- option 2
- option 3 (indeterminate)
- option 4 (disabled)

SUBMIT

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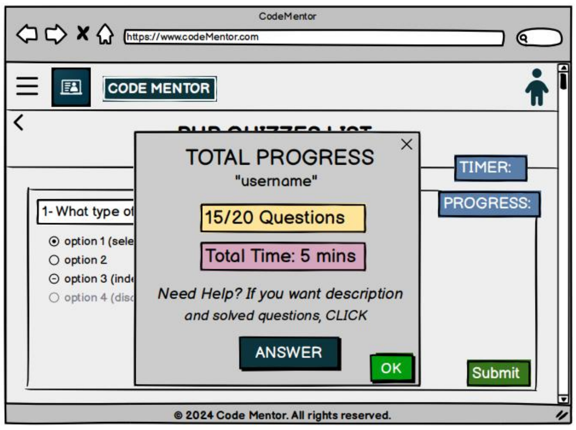
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CODE MENTOR

PHP QUIZZES LIST

TOTAL PROGRESS

"username"

15/20 Questions

Total Time: 5 mins

Need Help? If you want description and solved questions, CLICK

ANSWER

OK

TIMER:

PROGRESS:

1- What type of

- option 1 (sele
- option 2
- option 3 (inde
- option 4 (disc

Submit

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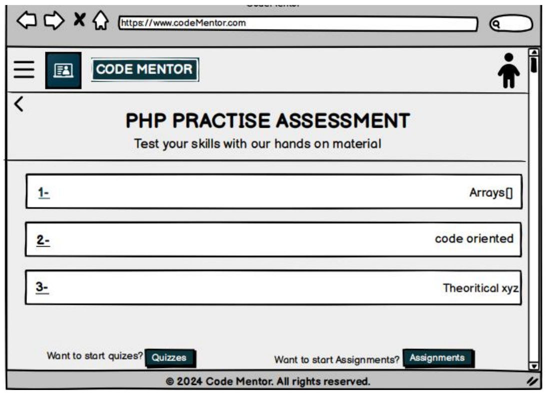
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PHP PRACTISE ASSESSMENT

Test your skills with our hands on material

1- Arrays[]

2- code oriented

3- Theoritical xyz

Want to start quizes? Quizzes

Want to start Assignments? Assignments

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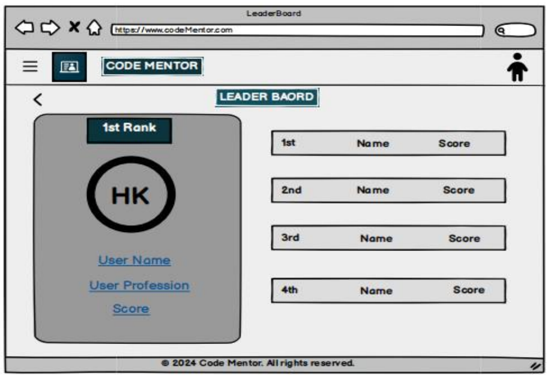
LeaderBoard

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LEADER BAORD

1st Rank

HK

User Name

User Profession

Score

1st	Name	Score
2nd	Name	Score
3rd	Name	Score
4th	Name	Score

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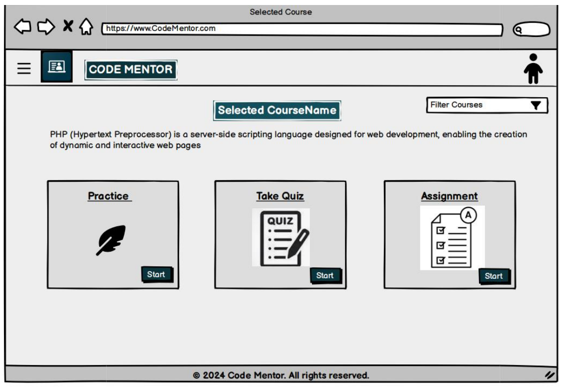
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PHP (Hypertext Preprocessor) is a server-side scripting language designed for web development, enabling the creation of dynamic and interactive web pages

Practice — Start

Take Quiz — QUIZ — Start

Assignment — Start

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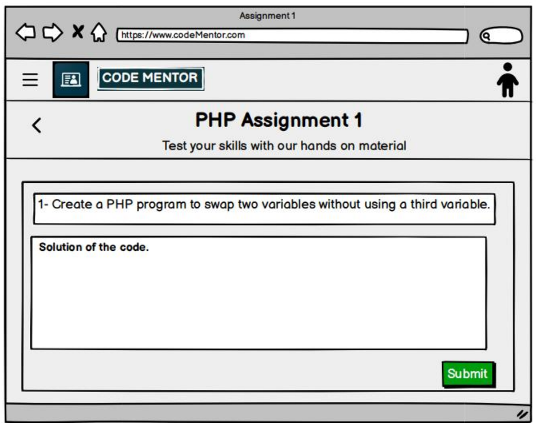
Assignment 1

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PHP Assignment 1

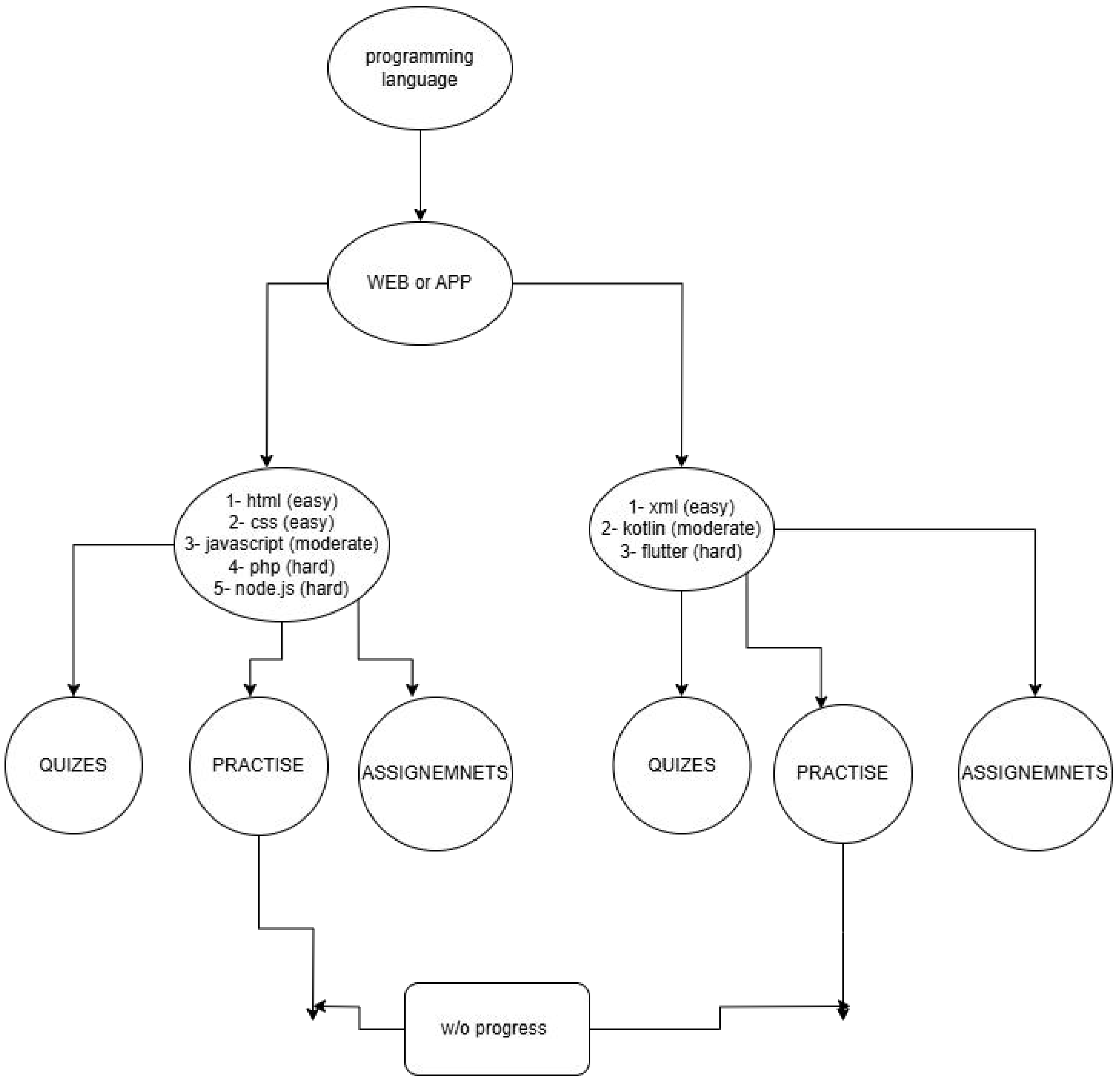
Test your skills with our hands on material

1- Create a PHP program to swap two variables without using a third variable.

Solution of the code.

Submit

FLOW:



- Compares progress of quizes and assignments for leadership board.
- Questions = mixtures of mcqs, code written, and theory.