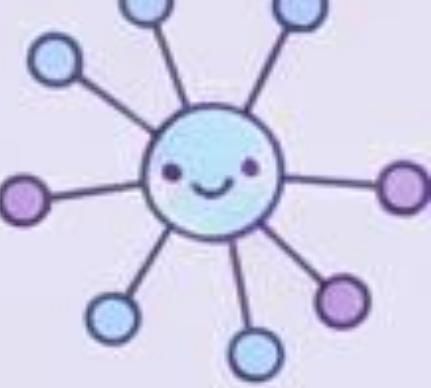


Team 5

# SmartQuizzer

## Adaptive AI-based Quiz Generator

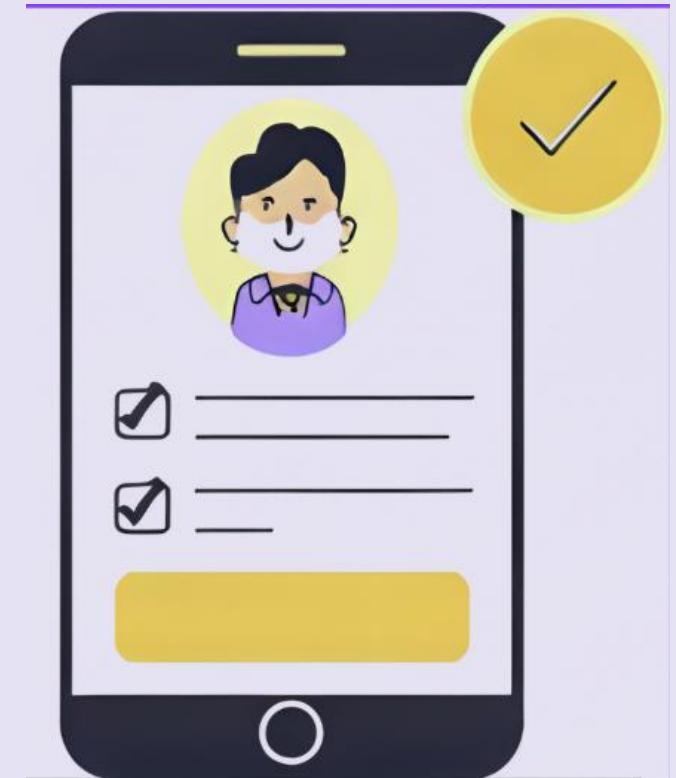
Personalized, Dynamic & Adaptive  
Quizzes for Smarter Learning



## Adaptive AI-based Quiz Generator

Backed by AI

Generates dynamic quizzes

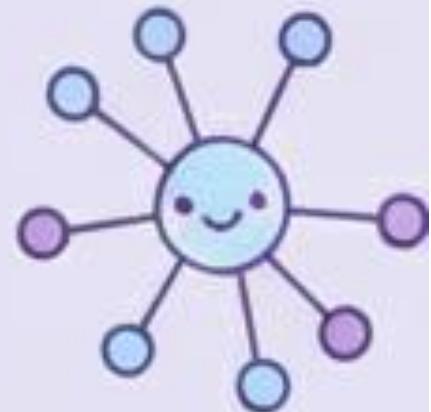
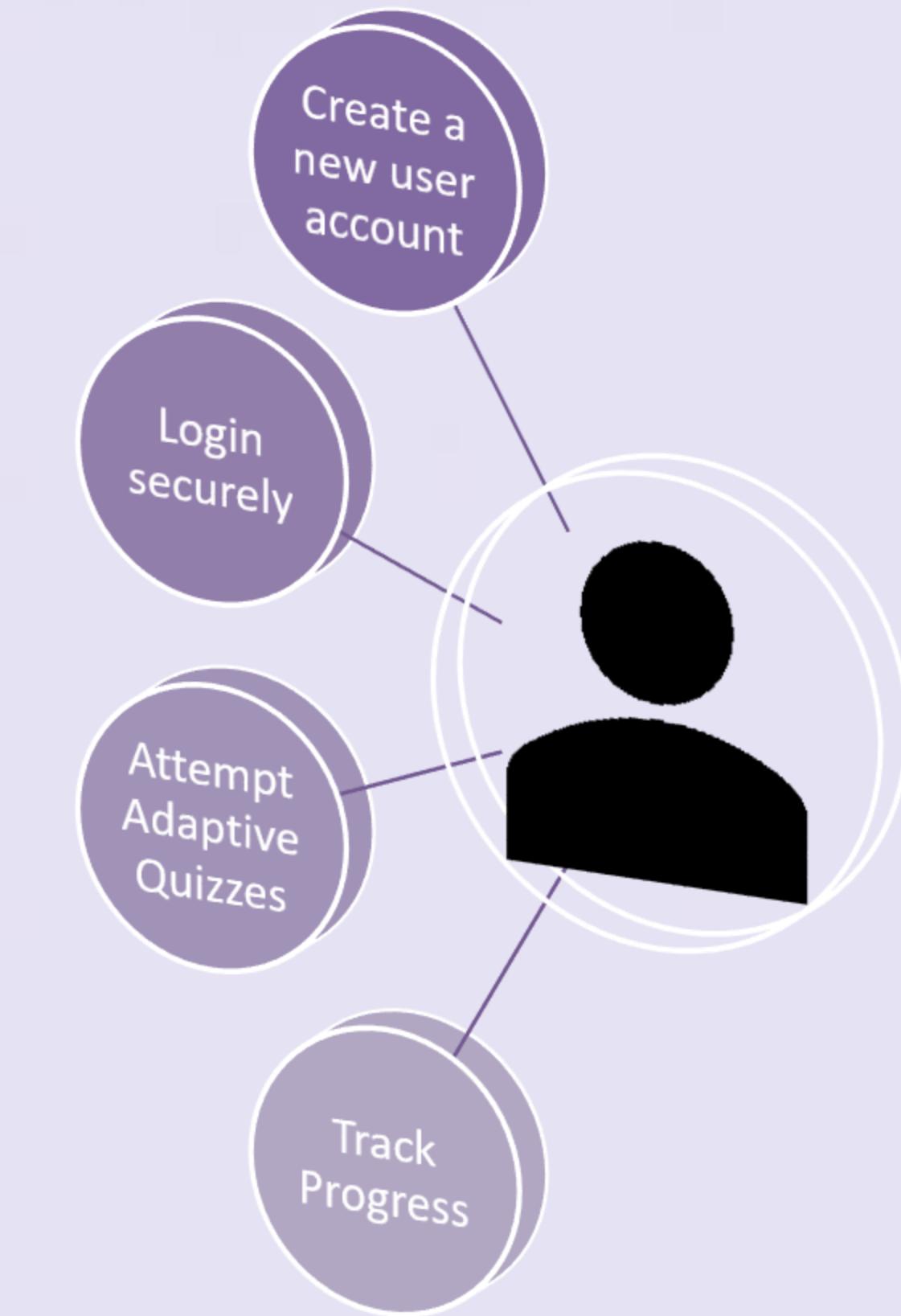


Adapts to user performance history

Supports multiple Languages

Learners can choose difficulty level

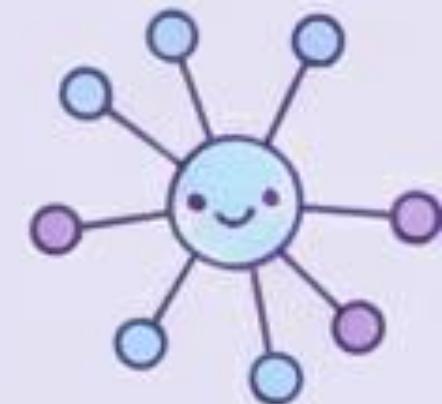
# Customer Features



# Administrator Features

- Manage quiz content and question rules.
- Moderate generated questions & flag inappropriate content.
- Monitor user activity and performance analytics.
- Add or remove subjects/domains.
- Collect and manage feedback for system improvement.

# Milestones



1

## Weeks 1–3

Focused on establishing the foundational user infrastructure, including secure account creation, profile management, and robust content upload capabilities for various learning materials.

2

## Weeks 4–5

Development and refinement of the central quiz generation engine, enabling the dynamic creation of diverse question types from uploaded educational content.

3

## Weeks 6–7

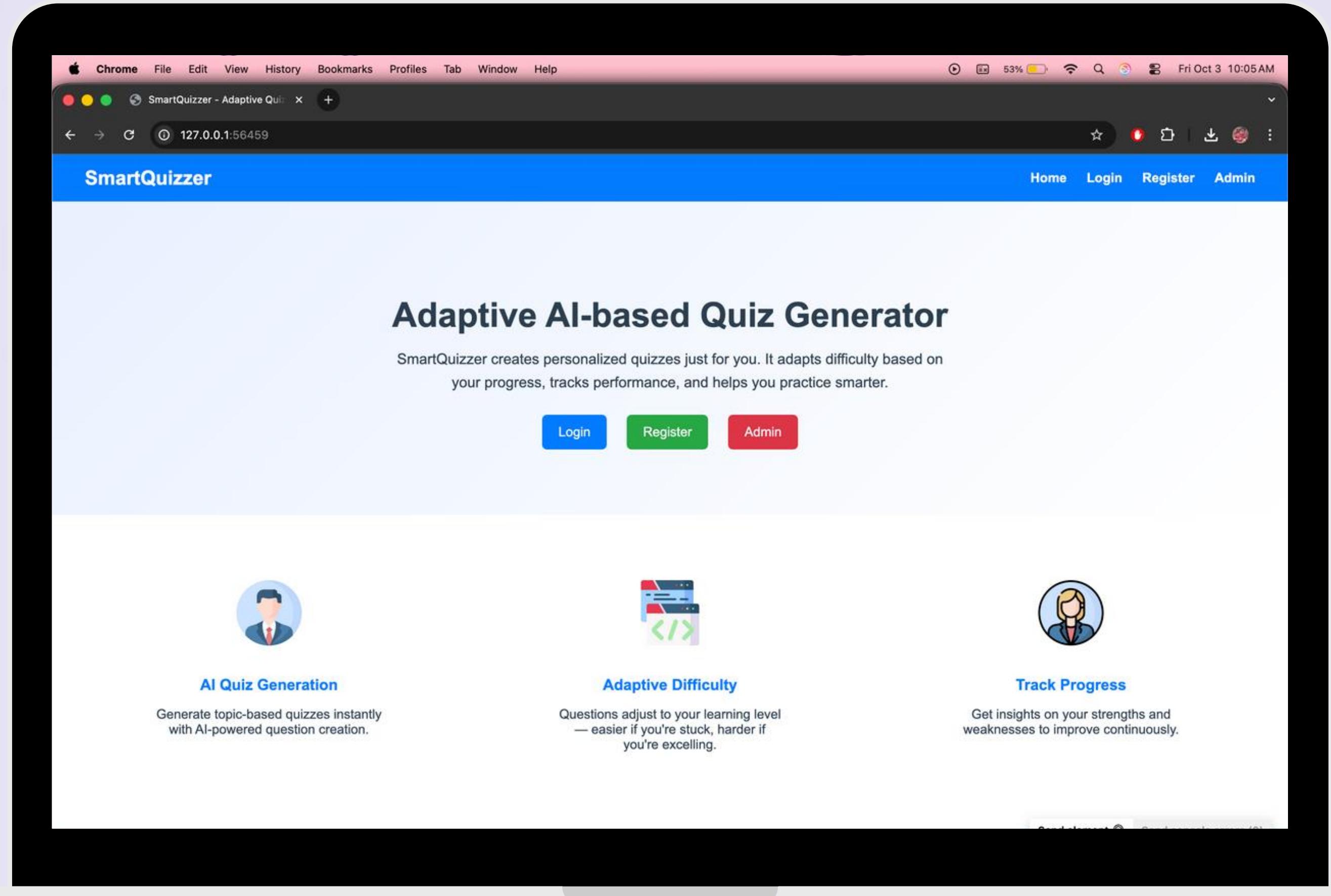
Integration of the adaptive learning engine, allowing the system to personalize quiz difficulty and question types based on user performance, enhancing learning efficiency.

4

## Weeks 8–9

Implementation of multi-language support and expansion into various knowledge domains, ensuring global accessibility and broader application for diverse learners.

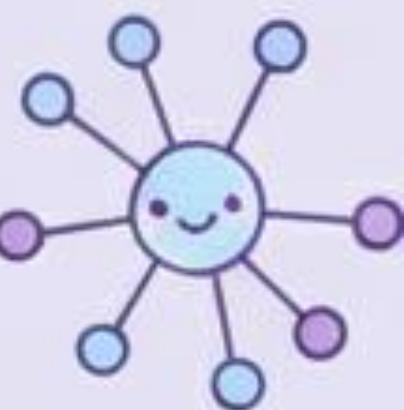
# Home Page



The image shows a screenshot of the SmartQuizzer Adaptive Quiz Generator home page. The page is displayed in a web browser window titled "SmartQuizzer - Adaptive Quiz Generator" with the URL "127.0.0.1:56459". The browser interface includes a top navigation bar with "Home", "Login", "Register", and "Admin" links. The main content area features a large title "Adaptive AI-based Quiz Generator" and a subtext explaining the service's purpose: "SmartQuizzer creates personalized quizzes just for you. It adapts difficulty based on your progress, tracks performance, and helps you practice smarter." Below this, there are three main features highlighted with icons and descriptions:

- AI Quiz Generation** (Icon: Person in a suit): "Generate topic-based quizzes instantly with AI-powered question creation."
- Adaptive Difficulty** (Icon: Code editor with brackets): "Questions adjust to your learning level — easier if you're stuck, harder if you're excelling."
- Track Progress** (Icon: Person in a blue shirt): "Get insights on your strengths and weaknesses to improve continuously."

At the bottom of the page, there is a footer with the text "SmartQuizzer © 2023 All Rights Reserved".



# Register Page



Chrome File Edit View History Bookmarks Profiles Tab Window Help

Register - SmartQuizzer 127.0.0.1:56459/register/ Fri Oct 3 11:11AM

Join SmartQuizzer Today

Username  Contact Number

Password  Confirm Password

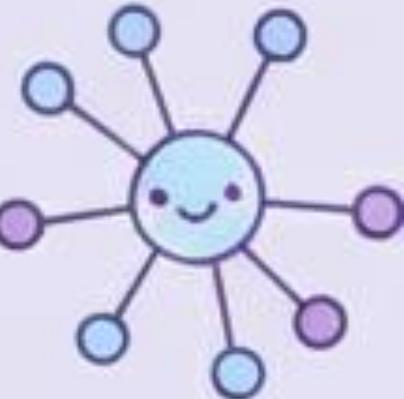
Gender  Other

**Create Account**

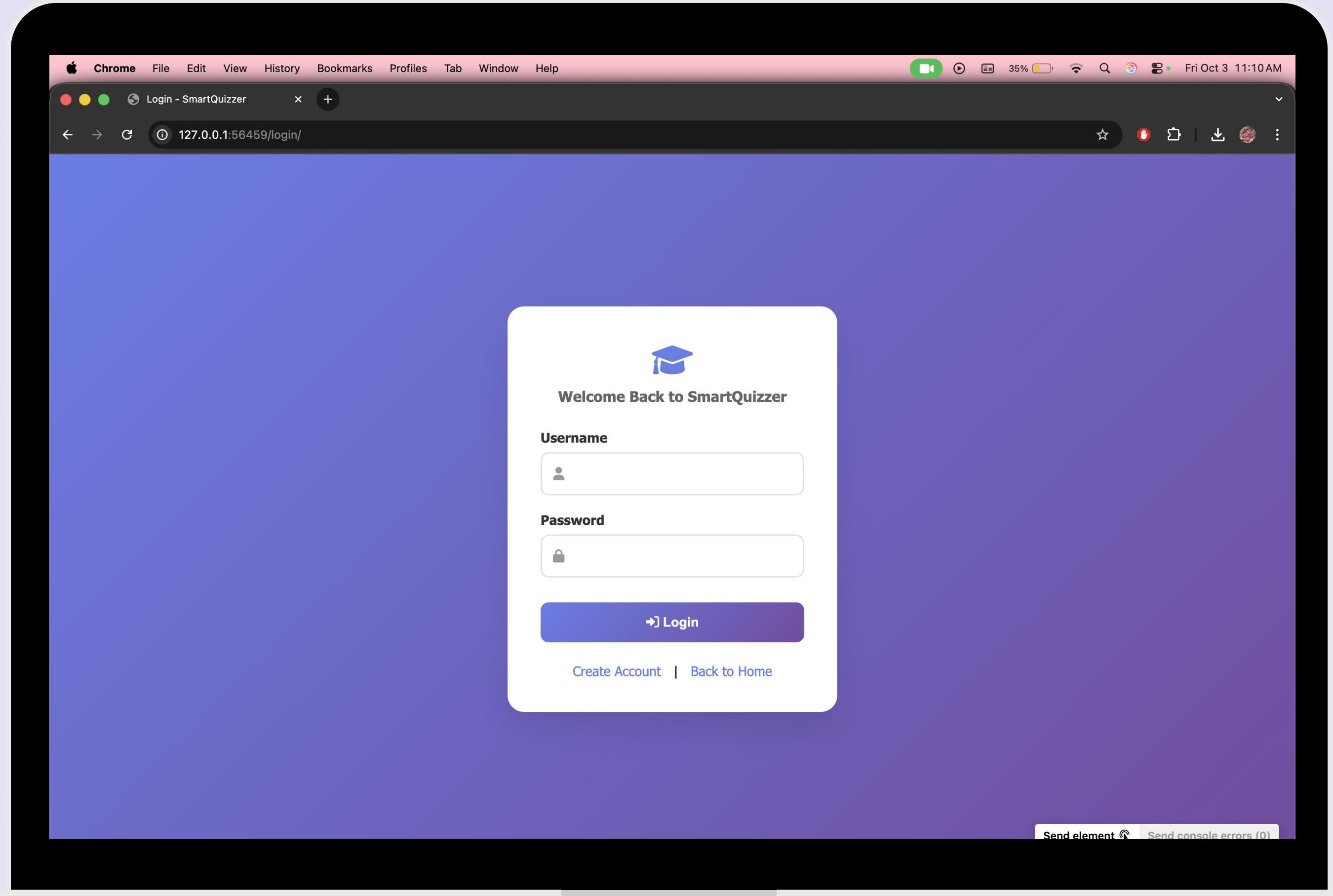
Already have an account? [Login](#) | [Back to Home](#)

Send element Send console errors (0)

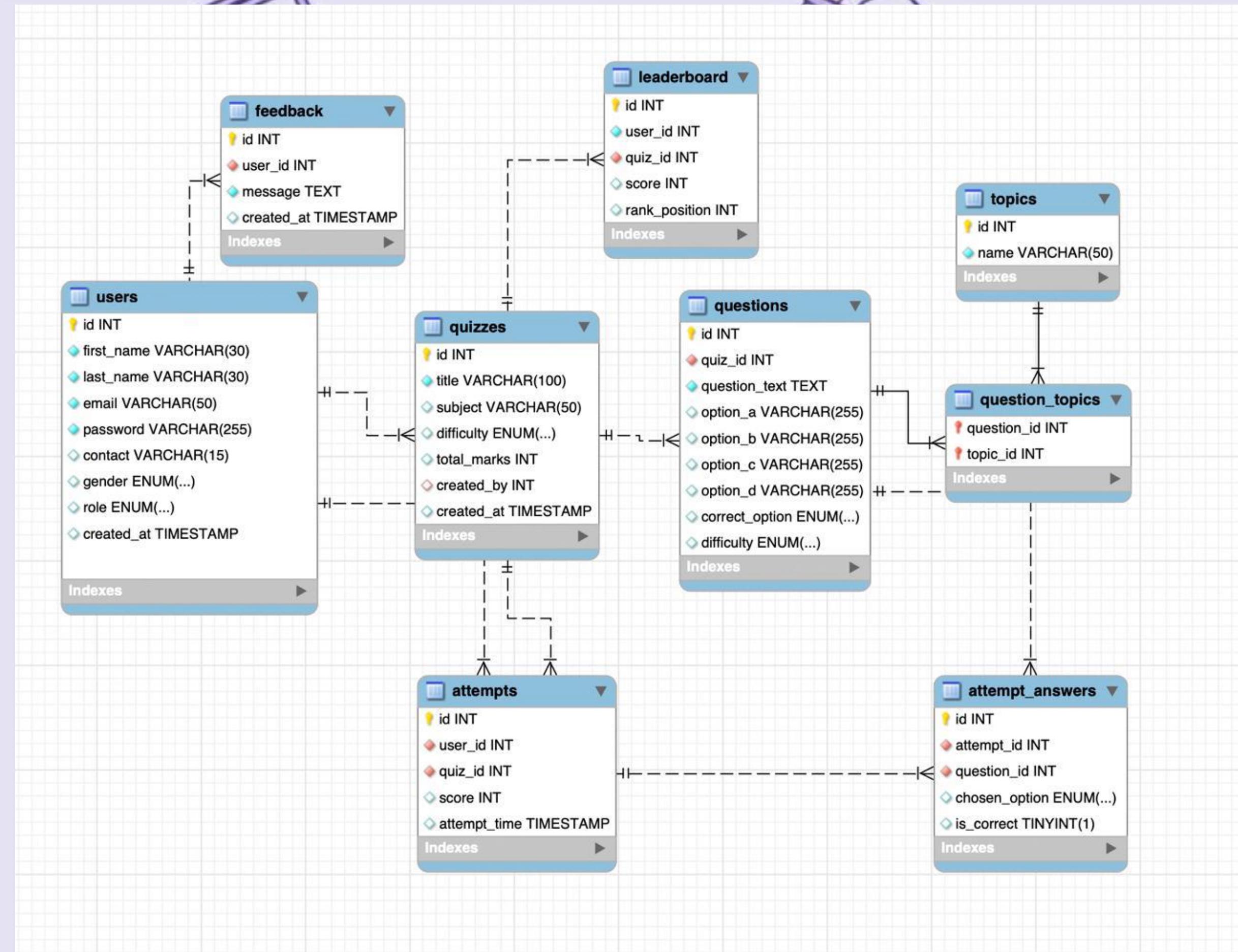
127.0.0.1:56459/register/



# Login Page



# Class Diagram



# Milestone 2

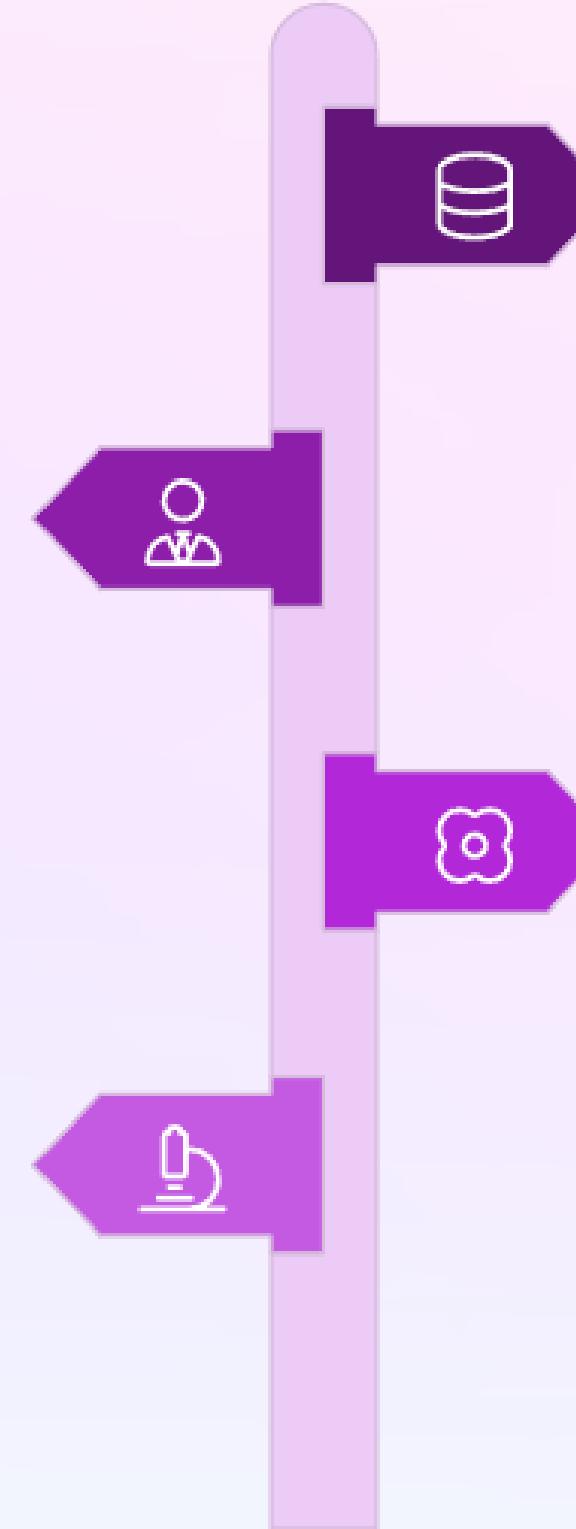


## Django Admin

Bulk uploads and dynamic dropdowns enabled.

## Testing & UI Fixes

Verified counts, dropdowns, and page transitions.

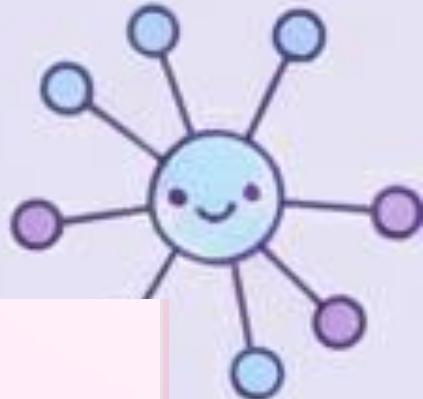


## Database Setup

MySQL created with topic/subtopic/difficulty tags.

## Adaptive Quiz Logic

Question flow adjusts to user performance.



# Admin Dashboard



Chrome File Edit View History Bookmarks Profiles Tab Window Help

Admin Dashboard - SmartQui x +

127.0.0.1:56459/admindashboard/

Admin Dashboard

shruthi\_sivaprasad Home Logout

Welcome, Admin shruthi\_sivaprasad!

## Admin Dashboard 🚀

Manage topics, users, upload documents, and oversee the learning platform

3 Total Topics

4 Registered Users

0 Topics with PDFs

9 Active Topics

### Upload MCQ PDF (UI)

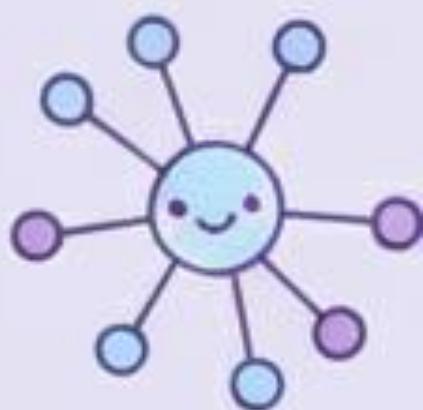
Topic Name

Sub Topic Name (Optional)

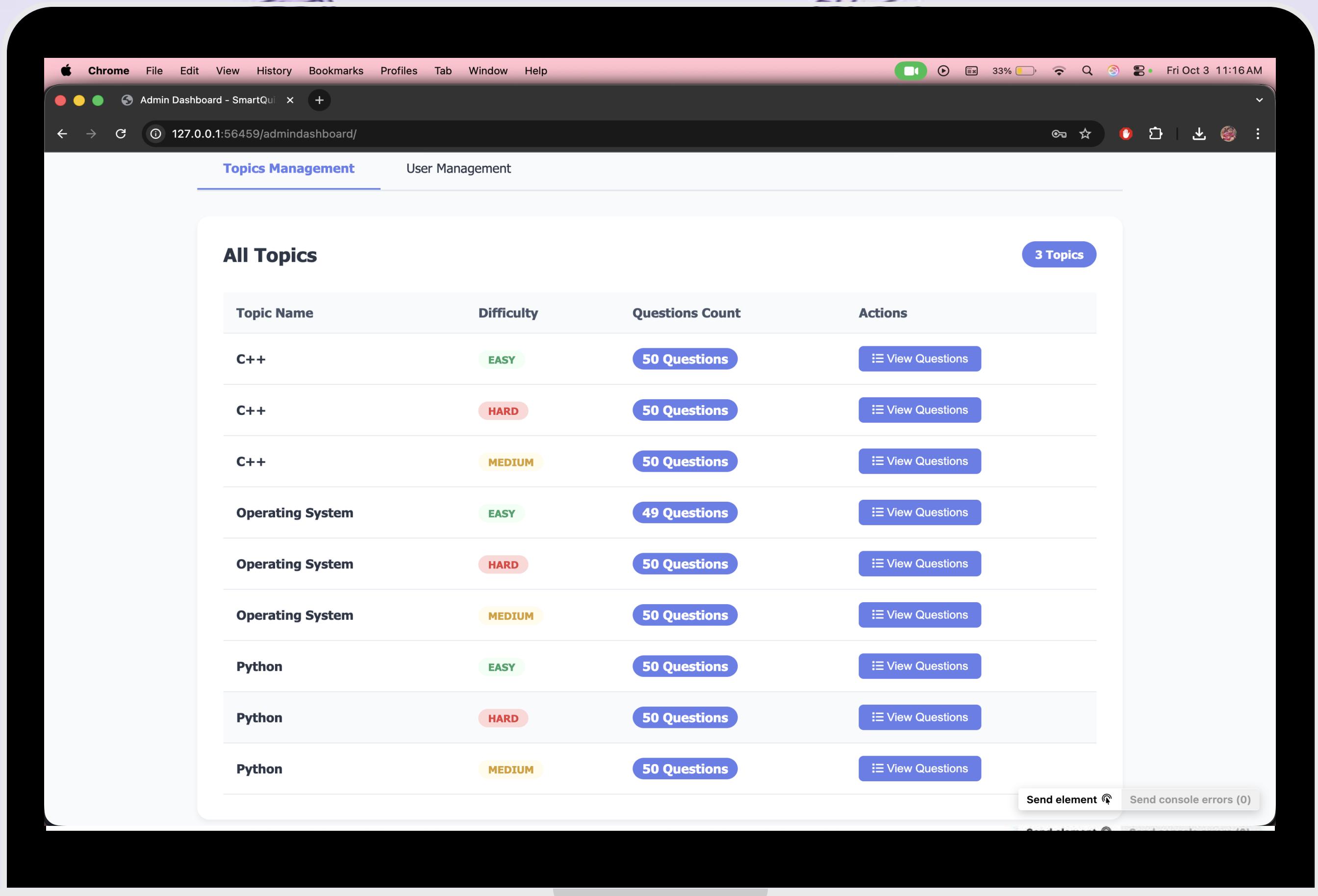
Difficulty Level

Medium

Send element ↗ Send console errors (0)



# Admin Dashboard



Topics Management User Management

### All Topics

Topic Name	Difficulty	Questions Count	Actions
C++	EASY	50 Questions	<a href="#">View Questions</a>
C++	HARD	50 Questions	<a href="#">View Questions</a>
C++	MEDIUM	50 Questions	<a href="#">View Questions</a>
Operating System	EASY	49 Questions	<a href="#">View Questions</a>
Operating System	HARD	50 Questions	<a href="#">View Questions</a>
Operating System	MEDIUM	50 Questions	<a href="#">View Questions</a>
Python	EASY	50 Questions	<a href="#">View Questions</a>
Python	HARD	50 Questions	<a href="#">View Questions</a>
Python	MEDIUM	50 Questions	<a href="#">View Questions</a>

3 Topics

# Database Page

MySQL Workbench - Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator Query 1 SQL File 3\*

SCHEMAS

- quizdb
- quizzzer
- Tables
- Views
- Stored Procedures
- Functions
- smartquizzzer
- testdb
- world

1 • CREATE DATABASE quizzzer;  
2 • CREATE DATABASE testdb;  
3 • USE quizzzer;  
4 • select \* from quizzzer;  
5 • select \* from base\_mcq;

Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content: Result Grid Form Editor Field Types Query Stats

	id	topic	subtopic	difficulty	question_no	question	option1	option2	option3	option4	correct_answer	c
▶	1	Java	Basics	easy	1	Which company originally developed Java?	Microsoft	Sun Microsystems	IBM	Oracle	2	20
	2	Java	Basics	easy	2	Which of the following is the correct file extensi...	.js	.java	.class	.py	2	20
	3	Java	Basics	easy	3	Which of the following is not a Java feature?	Object-Oriented	Platform Independent	Pointer Arithmetic	Robust	3	20
	4	Java	Basics	easy	4	Which of the following data types is used to cre...	String	char	int	boolean	1	20
	5	Java	Basics	easy	5	What is the size of an int data type in Java?	2 bytes	4 bytes	8 bytes	Depends on OS	2	20
	6	Java	Basics	easy	6	Which keyword is used to define a class in Java?	def	class	struct	define	2	20
	7	Java	Basics	easy	7	Which of the following loops in Java executes a...	for loop	while loop	do-while loop	foreach loop	3	20
	8	Java	Basics	easy	8	Which method is the entry point of any Java pr...	start()	run()	main()	execute()	3	20
	9	Java	Basics	easy	9	Which operator is used for comparison in Java?	=	==	:=	equals()	2	20
	10	Java	Basics	easy	10	Which of these is not a valid access modifier in J...	public	private	protected	internal	4	20
	11	Java	Basics	medium	1	Which of the following is true about Java?	Java uses a co...	Java uses an interpr...	Java uses both c...	Java does not ...	3	20
	12	Java	Basics	medium	2	What is method overloading in Java?	Two methods h...	Two methods having ...	Two methods ha...	None of the a...	2	20
	13	Java	Basics	medium	3	Which keyword is used to prevent a method fro...	static	constant	final	abstract	3	20
	14	Java	Basics	medium	4	Which exception is thrown when an array is acc...	NullPointerException	ArrayIndexOutOfBoundsException	NumberFormatException	IllegalArgumentException	2	20

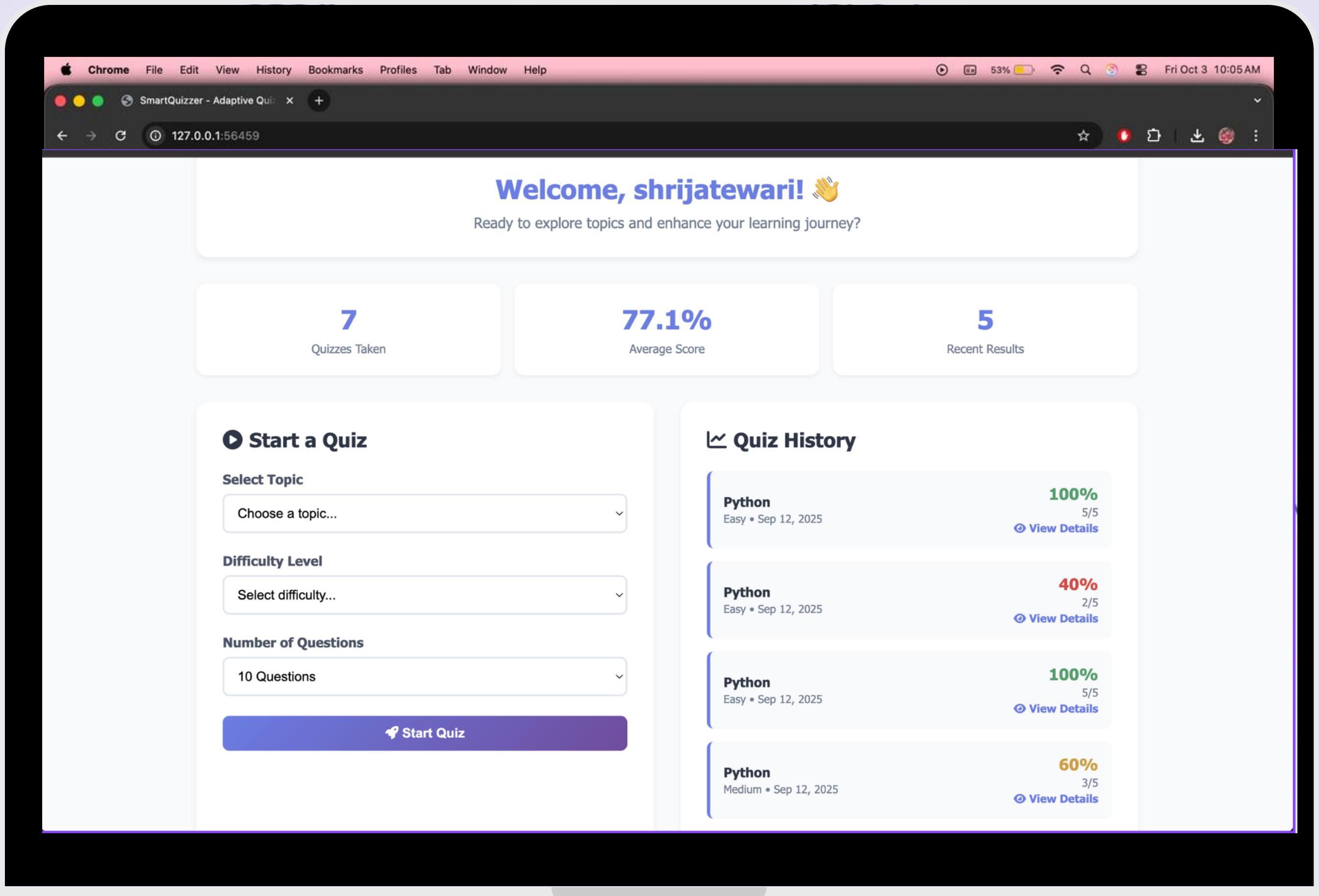
base\_mcq 1 x

Output

Action Output

#	Time	Action	Message
1	17:38:59	select * from base_mcq LIMIT 0, 1000	60 row(s) returned

# User Dashboard



SmartQuizzer - Adaptive Quiz

127.0.0.1:56459

Fri Oct 3 10:05 AM

## Welcome, shrijatewari! 🙌

Ready to explore topics and enhance your learning journey?

**7**  
Quizzes Taken

**77.1%**  
Average Score

**5**  
Recent Results

### Start a Quiz

Select Topic

Choose a topic...

Difficulty Level

Select difficulty...

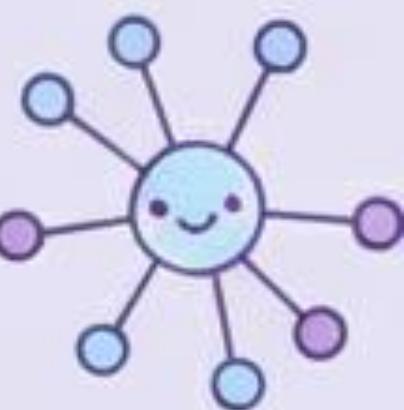
Number of Questions

10 Questions

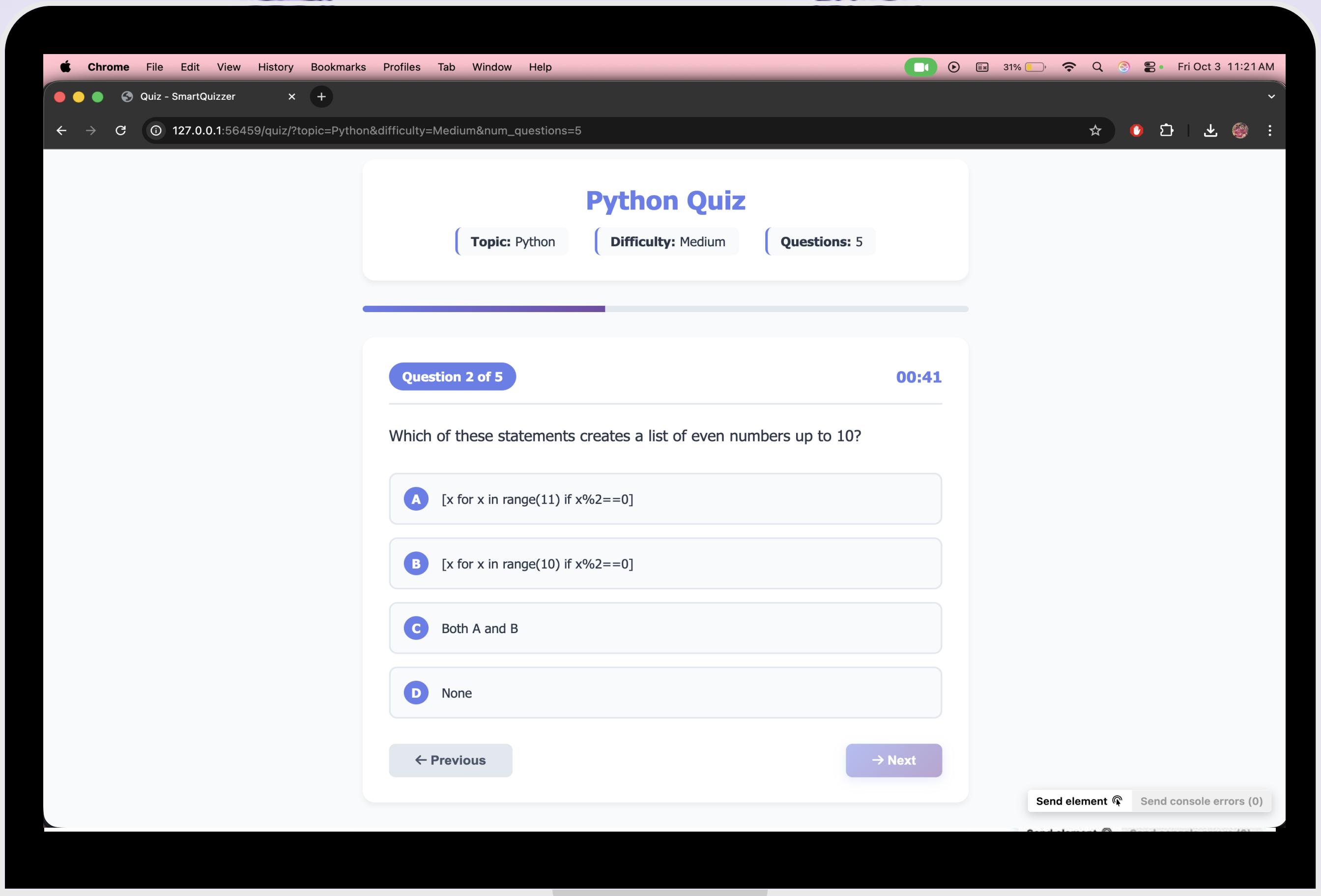
Start Quiz

### Quiz History

Python	Easy • Sep 12, 2025	100%	5/5	<a href="#">View Details</a>
Python	Easy • Sep 12, 2025	40%	2/5	<a href="#">View Details</a>
Python	Easy • Sep 12, 2025	100%	5/5	<a href="#">View Details</a>
Python	Medium • Sep 12, 2025	60%	3/5	<a href="#">View Details</a>



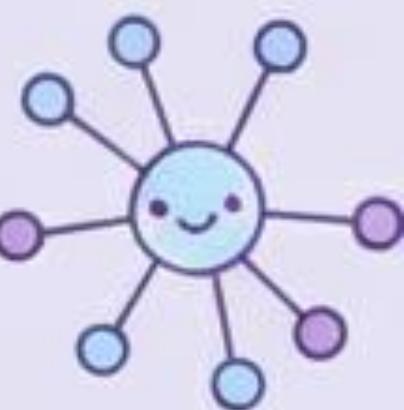
# Quiz Page



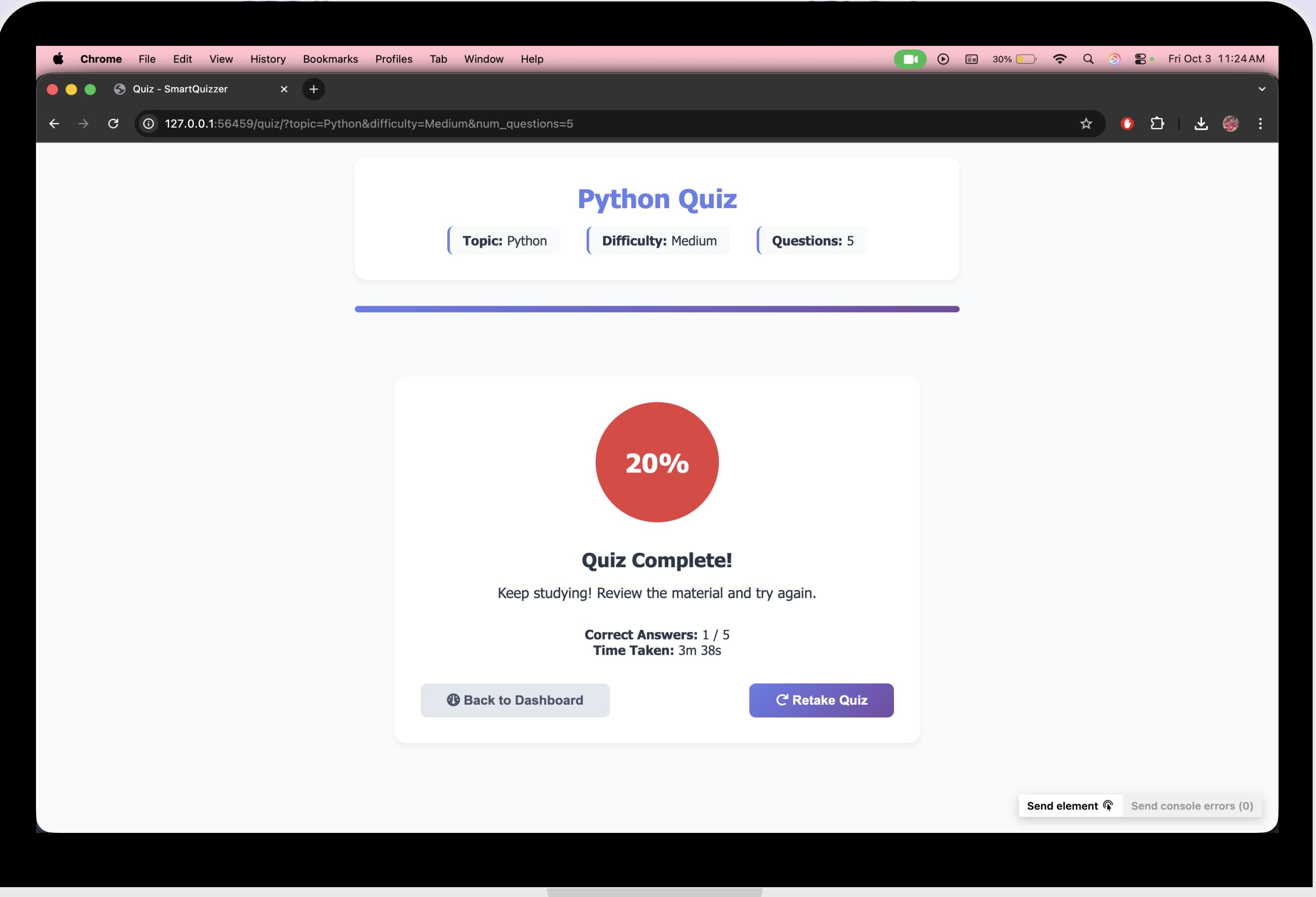
A smartphone is shown displaying a Python quiz page within a Chrome browser window. The browser's top bar shows the URL `127.0.0.1:56459/quiz/?topic=Python&difficulty=Medium&num_questions=5`. The quiz title is "Python Quiz" with filters for "Topic: Python", "Difficulty: Medium", and "Questions: 5". The current question is "Question 2 of 5" with a timer showing 00:41. The question asks: "Which of these statements creates a list of even numbers up to 10?". The options are:

- A** `[x for x in range(11) if x%2==0]`
- B** `[x for x in range(10) if x%2==0]`
- C** Both A and B
- D** None

At the bottom of the screen, there are "← Previous" and "→ Next" buttons, and a footer with "Send element" and "Send console errors (0)".



# End of Quiz Page



Chrome File Edit View History Bookmarks Profiles Tab Window Help

Quiz - SmartQuizzzer 127.0.0.1:56459/quiz/?topic=Python&difficulty=Medium&num\_questions=5

**Python Quiz**

Topic: Python | Difficulty: Medium | Questions: 5

**20%**

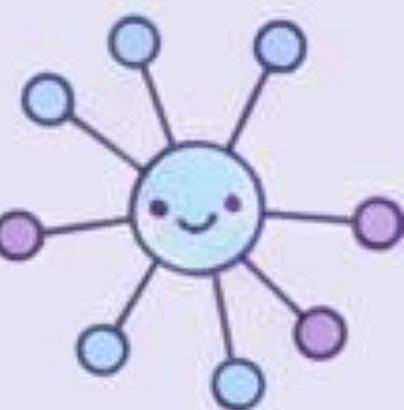
**Quiz Complete!**

Keep studying! Review the material and try again.

Correct Answers: 1 / 5  
Time Taken: 3m 38s

Back to Dashboard | Retake Quiz

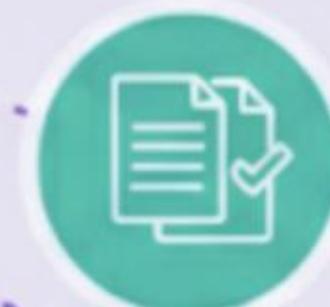
Send element | Send console errors (0)



# Milestone 3

## Topic & Subtopic:

- Subject areas



## Number of Quizzes Taken

- Total attempts



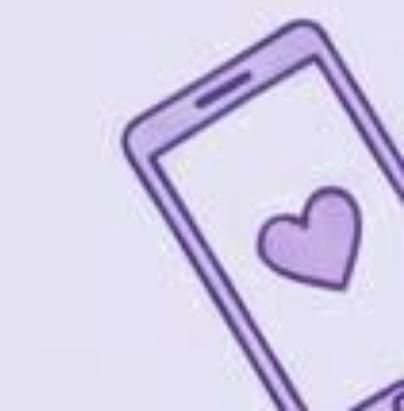
## Personalized Learning

- Reflect & improve
- Data-driven insights

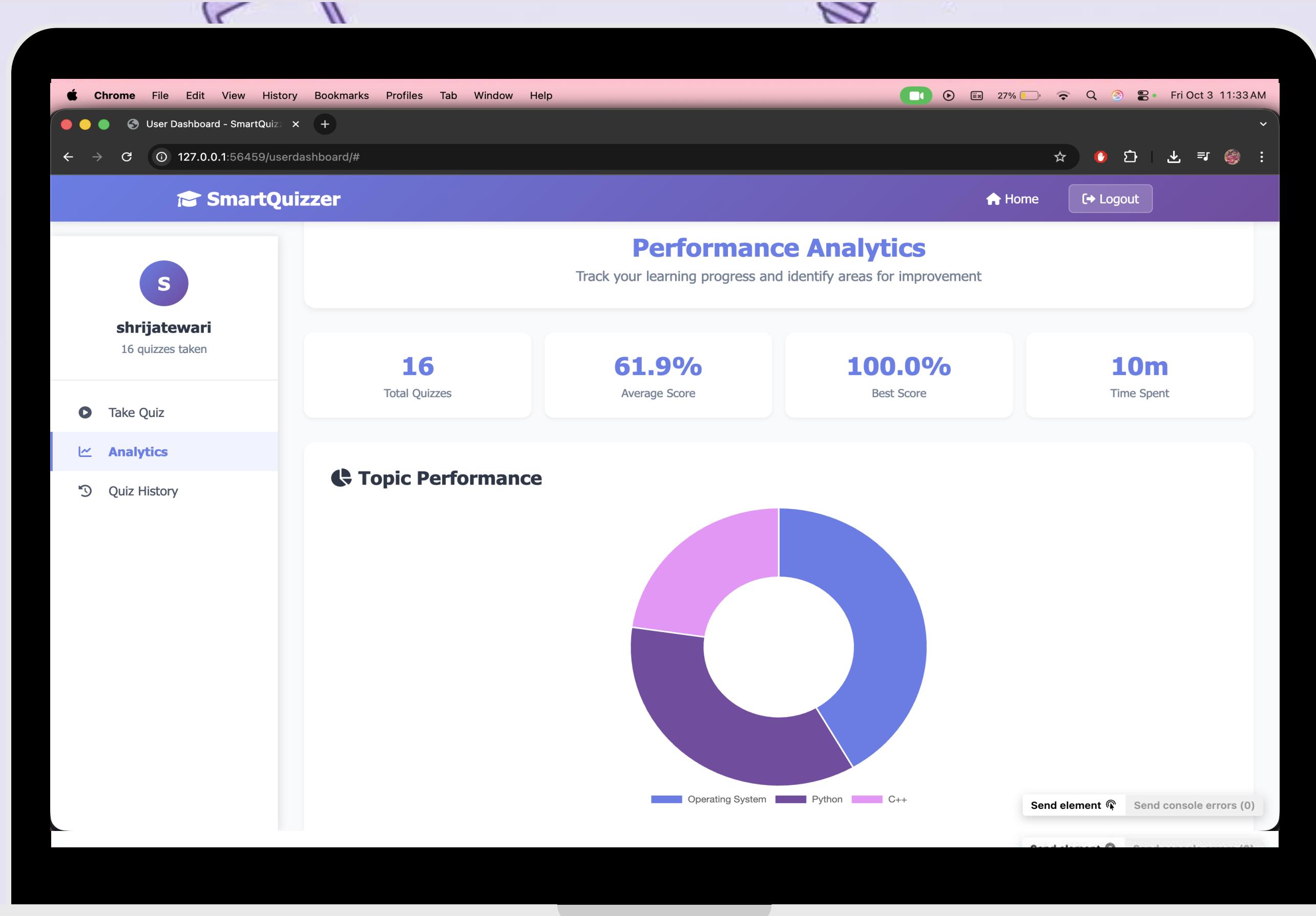


## Average Score/Performance

Snapshot of progress



# User dashboard-Results section



The image shows a screenshot of the SmartQuizzer User Dashboard results section. The dashboard is titled "Performance Analytics" and features a sub-section titled "Topic Performance".

**Performance Analytics**  
Track your learning progress and identify areas for improvement

**Topic Performance**

A donut chart showing the distribution of topics: Operating System (blue), Python (dark purple), and C++ (pink).

Topic	Percentage
Operating System	~33%
Python	~33%
C++	~34%

Legend: Operating System (blue), Python (dark purple), C++ (pink)

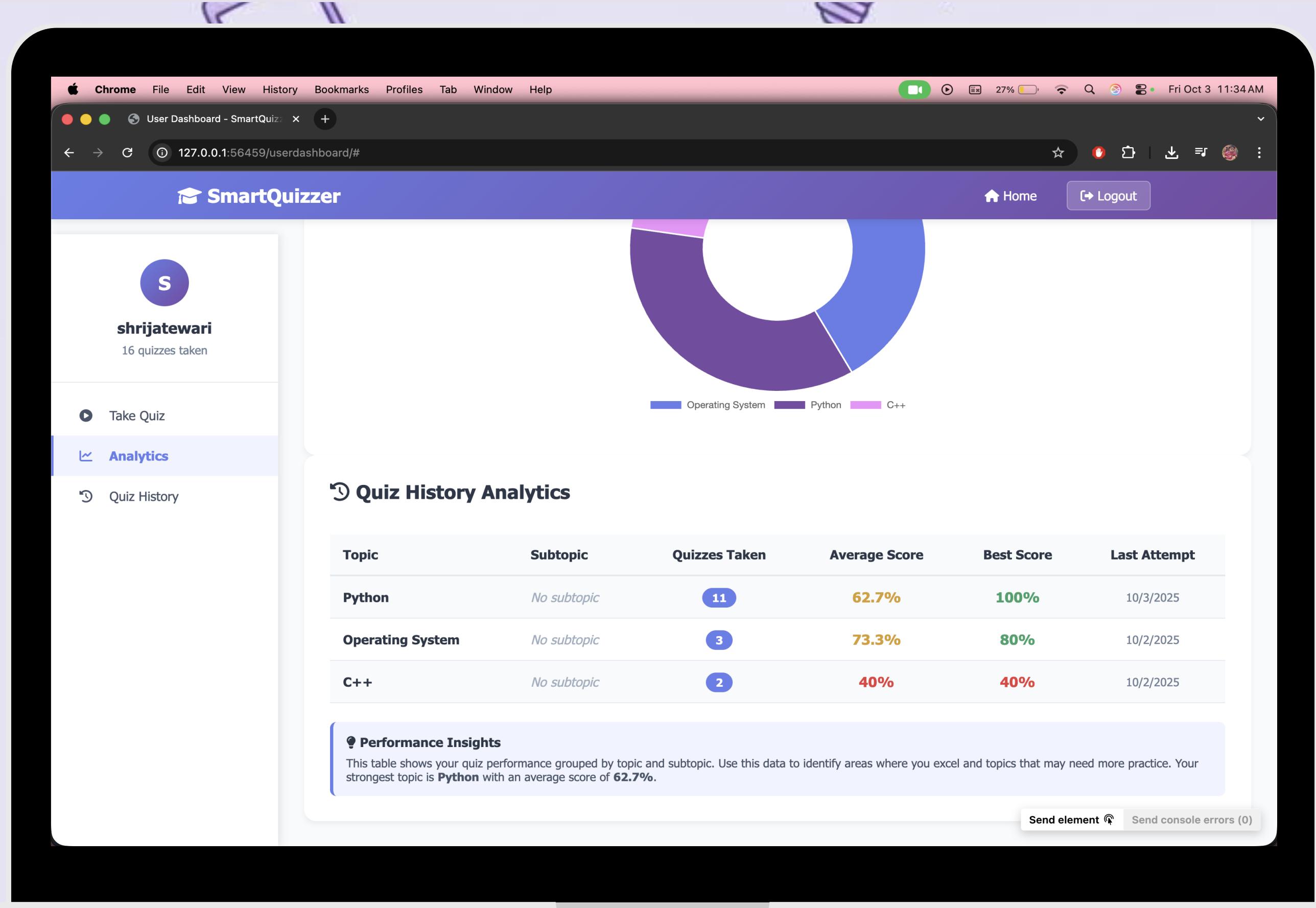
**User Profile**  
shrijatewari  
16 quizzes taken

**Performance Metrics**

Metric	Value
Total Quizzes	16
Average Score	61.9%
Best Score	100.0%
Time Spent	10m

**Navigation**  
Home Logout  
Take Quiz  
Analytics  
Quiz History

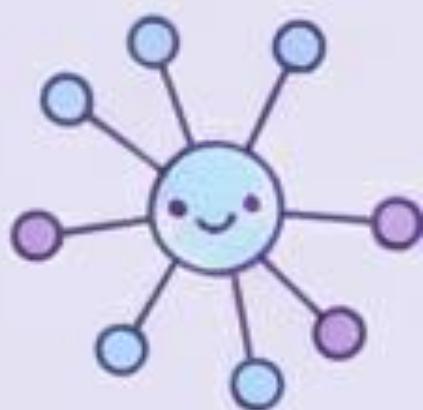
# User dashboard-Results section



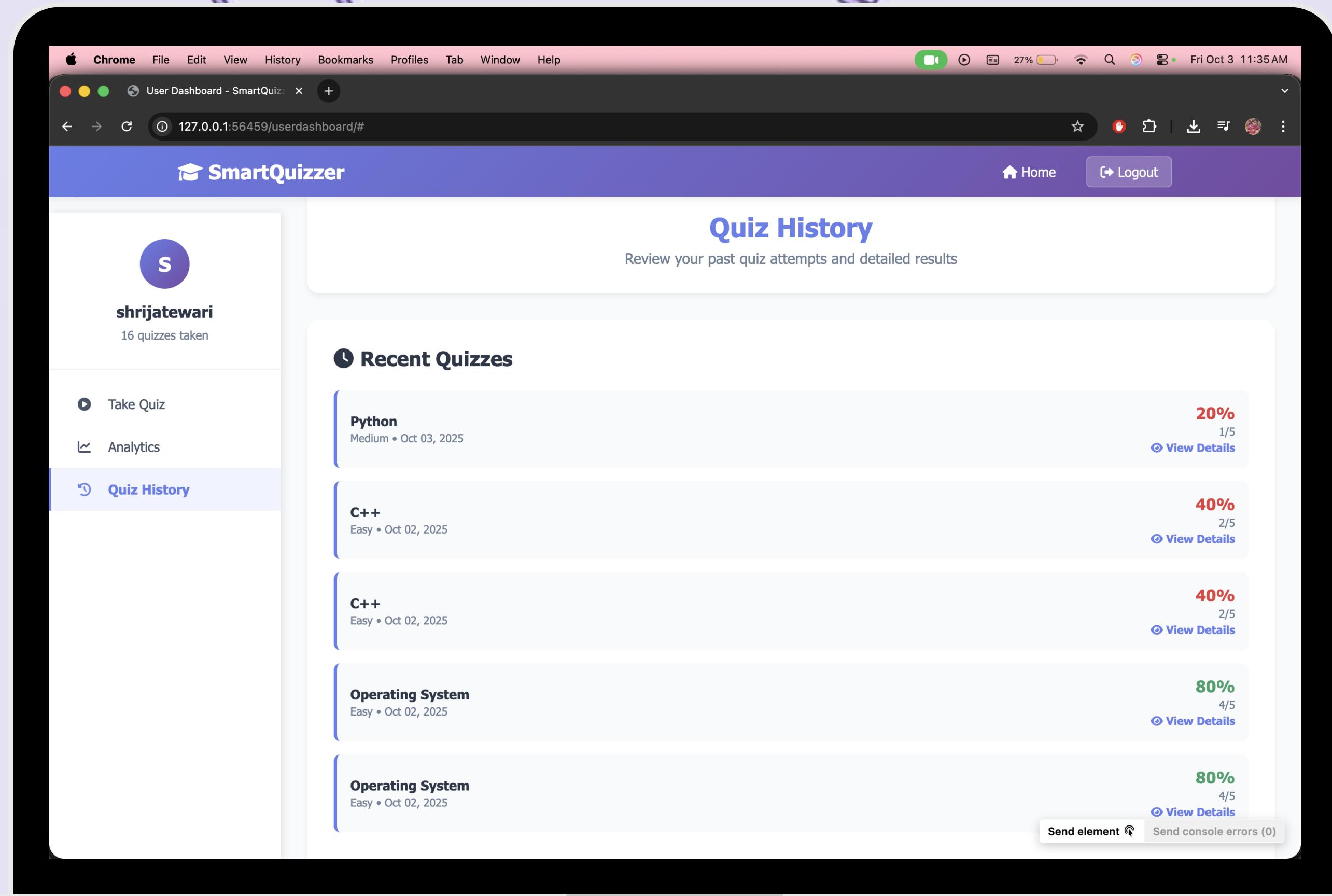
The image shows a screenshot of the SmartQuizzer user dashboard results section. The dashboard is displayed on a laptop screen with a black background. The main header is "SmartQuizzer" with a graduation cap icon. The user profile on the left shows a blue circular icon with a white 'S', the name "shrijatewari", and the text "16 quizzes taken". Below the profile are three buttons: "Take Quiz", "Analytics" (which is highlighted in blue), and "Quiz History". The main content area starts with a large donut chart at the top right. The chart has three segments: a large purple segment labeled "Python", a smaller blue segment labeled "Operating System", and a very small pink segment labeled "C++". Below the chart is a section titled "Quiz History Analytics" with a table. The table has columns: Topic, Subtopic, Quizzes Taken, Average Score, Best Score, and Last Attempt. The data is as follows:

Topic	Subtopic	Quizzes Taken	Average Score	Best Score	Last Attempt
Python	No subtopic	11	62.7%	100%	10/3/2025
Operating System	No subtopic	3	73.3%	80%	10/2/2025
C++	No subtopic	2	40%	40%	10/2/2025

Below the table is a box titled "Performance Insights" with the following text: "This table shows your quiz performance grouped by topic and subtopic. Use this data to identify areas where you excel and topics that may need more practice. Your strongest topic is **Python** with an average score of **62.7%**." At the bottom right of the dashboard are two buttons: "Send element" and "Send console errors (0)".



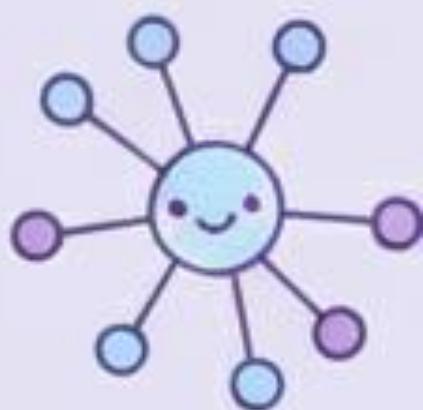
# User dashboard-Quiz History



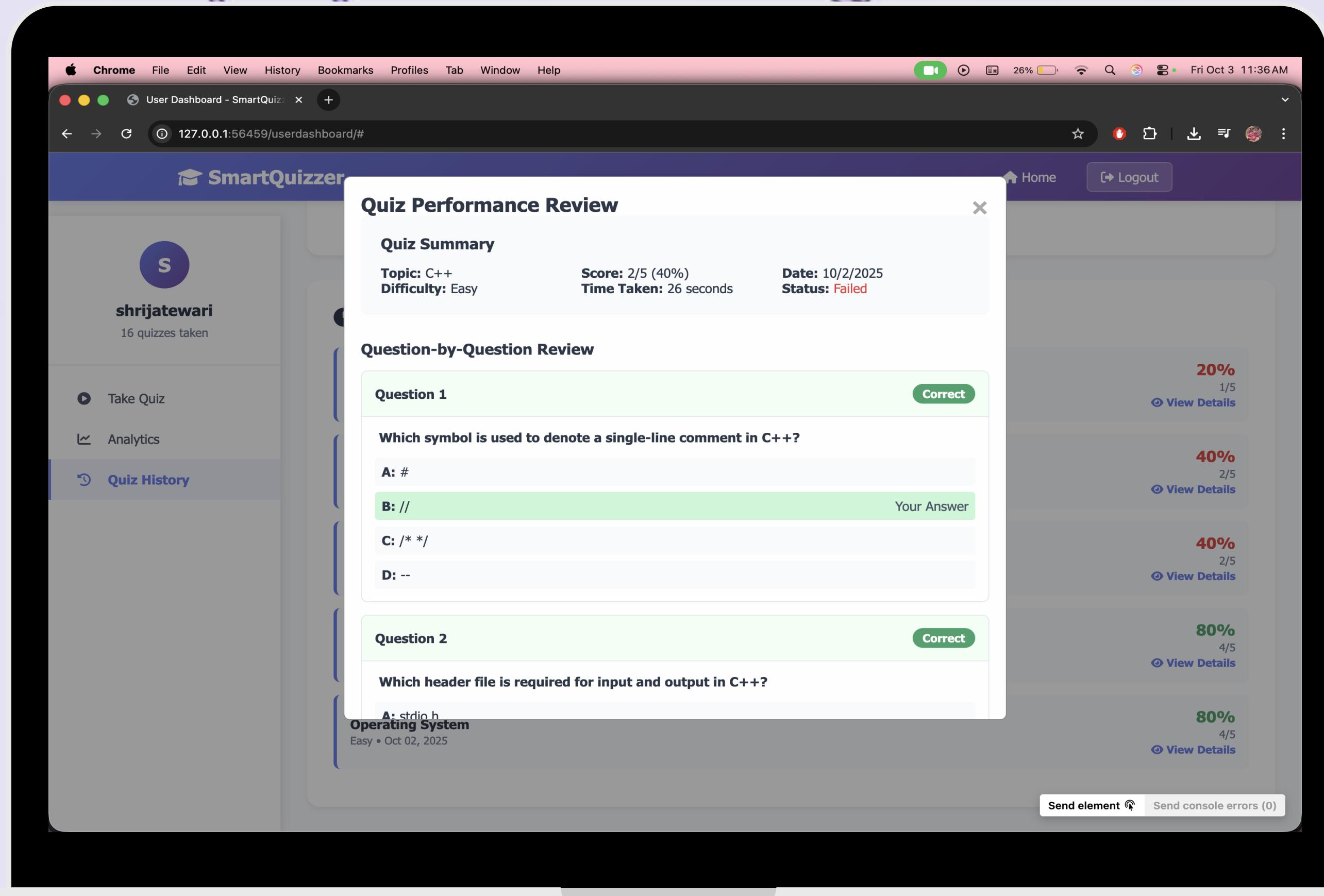
The image shows a screenshot of a web browser displaying the 'User Dashboard - SmartQuizzler' page. The browser is an Apple Chrome window with a dark theme, showing the status bar with the date 'Fri Oct 3 11:35 AM' and battery level '27%'. The page has a purple header with the 'SmartQuizzler' logo and navigation links for 'Home' and 'Logout'. On the left, a sidebar for the user 'shrijatewari' (16 quizzes taken) includes 'Take Quiz', 'Analytics', and 'Quiz History' (selected). The main content area is titled 'Quiz History' with the sub-instruction 'Review your past quiz attempts and detailed results'. A section titled 'Recent Quizzes' lists five quizzes with their details and results:

Quiz Name	Difficulty	Date Taken	Score	Attempts	Action
Python	Medium	Oct 03, 2025	20%	1/5	<a href="#">View Details</a>
C++	Easy	Oct 02, 2025	40%	2/5	<a href="#">View Details</a>
C++	Easy	Oct 02, 2025	40%	2/5	<a href="#">View Details</a>
Operating System	Easy	Oct 02, 2025	80%	4/5	<a href="#">View Details</a>
Operating System	Easy	Oct 02, 2025	80%	4/5	<a href="#">View Details</a>

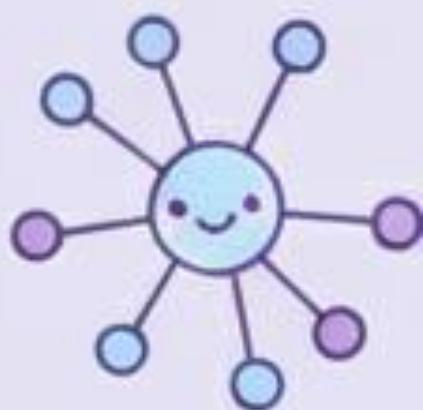
At the bottom right of the dashboard, there are buttons for 'Send element' and 'Send console errors (0)'. The background of the dashboard features a light purple gradient with floating question marks and a network of nodes.

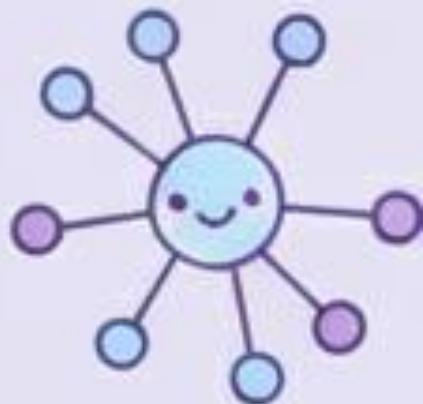


# User dashboard-Quiz History



The image shows a screenshot of a web browser displaying the 'User Dashboard - SmartQuizzer' page. The dashboard has a purple header with the title 'SmartQuizzer' and a user profile icon for 'shrijatewari' (16 quizzes taken). The main content area is titled 'Quiz Performance Review' and shows a 'Quiz Summary' for a C++ quiz taken on 10/2/2025. The summary includes the topic 'C++', difficulty 'Easy', score '2/5 (40%)', time taken '26 seconds', and status 'Failed'. Below this, a 'Question-by-Question Review' section displays two questions. Question 1 asks 'Which symbol is used to denote a single-line comment in C++?' with options A: #, B: //, C: /\* \*/, and D: --. The user's answer 'B: //' is marked as 'Correct'. Question 2 asks 'Which header file is required for input and output in C++?' with options A: stdio.h, B: stdlib.h, C: iostream.h, and D: Operating System. The user's answer 'A: stdio.h' is marked as 'Correct'. The dashboard also features a sidebar with 'Take Quiz', 'Analytics', and 'Quiz History' buttons, and a footer with 'Send element' and 'Send console errors (0)' buttons.





# Results Stored Database



Data Tracking



AI Suggestion Engine



Rules Implementation



Testing & Validation



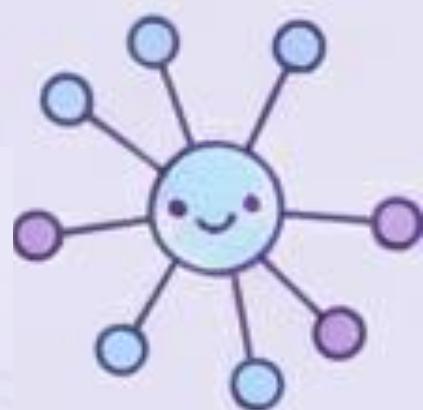
Integration



Scalability & Future Enhancement

Milestone  
4

# AI Model- Decision Trees



## 1. TRAINING DATA & RULES

200 SYNTHETIC SAMPLES

Rule 1: Easy Mastery > Medium  
≥5 Easy attempts AND  
>80% average



Rule 2: Medium Mastery > Hard  
≥5 Medium attempts  
>75% average



Rule 3: Hard Mastery > Next Topic  
≥3 Hard attempts AND  
>80% average

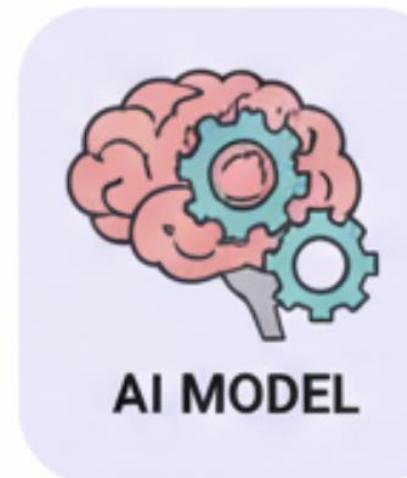


Rule 4: Beginners > Easy

Limited Quiz History or Mixed  
Performance



## 2. PREDICTION CLASSES



- 0 Suggest Easy
- 1 Suggest Medium
- 2 Suggest Hard
- 3 Third Alternative  
>15% Probability



## 3. SUGGESTION GENERATION LOGIC

1. PRIMARY  
The Top ML Prediction  
(Highest Confidence)
2. Second-Best Option  
(Probability)
3. OPTION



### For New Users

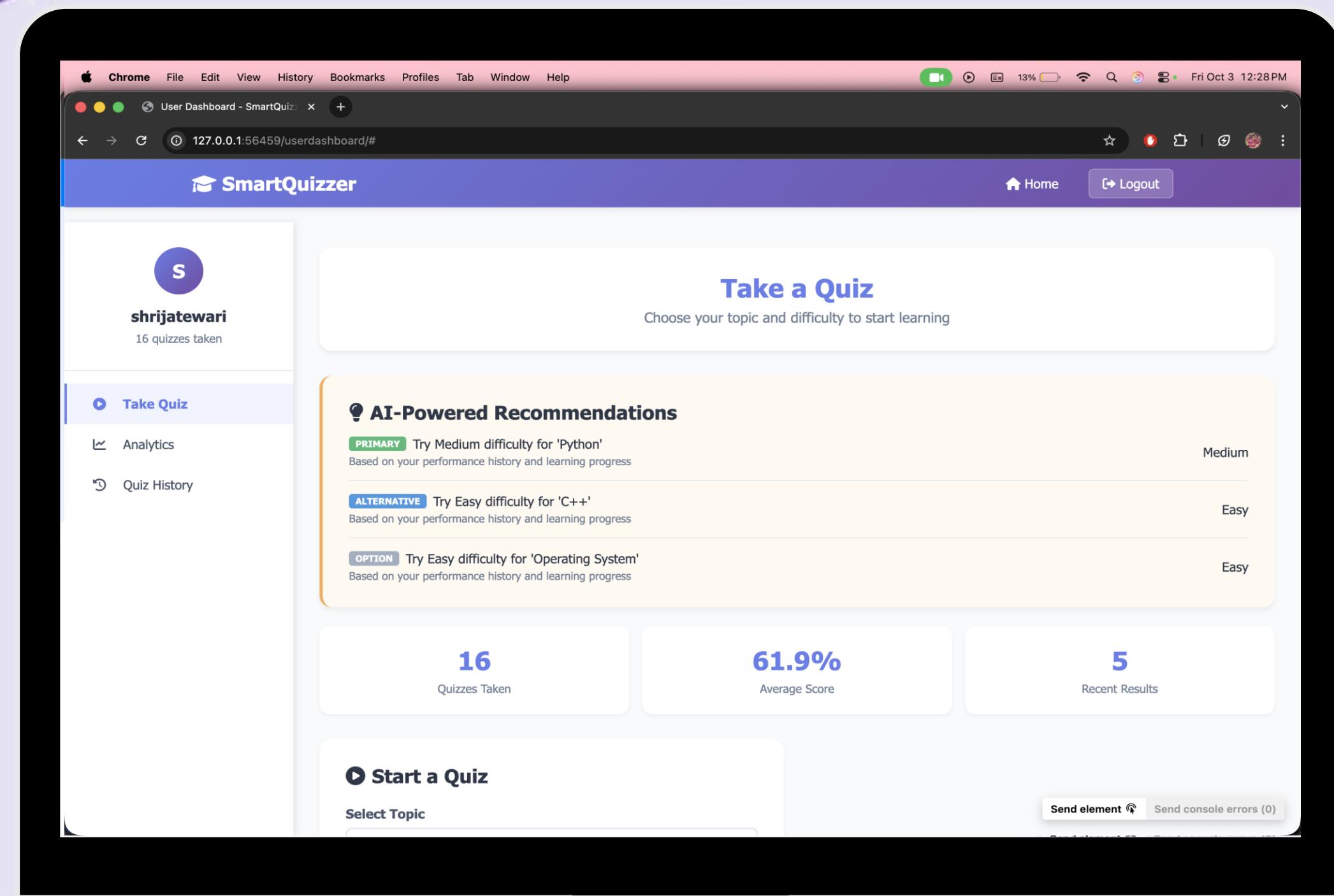
- Suggests multiple topics (Easy)
- Helps users explore different subjects



### For Experienced Users

- Primary: Best next step based on performance
- Alternative: Different difficulty (same topic)
- Option: Explore new topic for variety

# AI Suggestions Panel

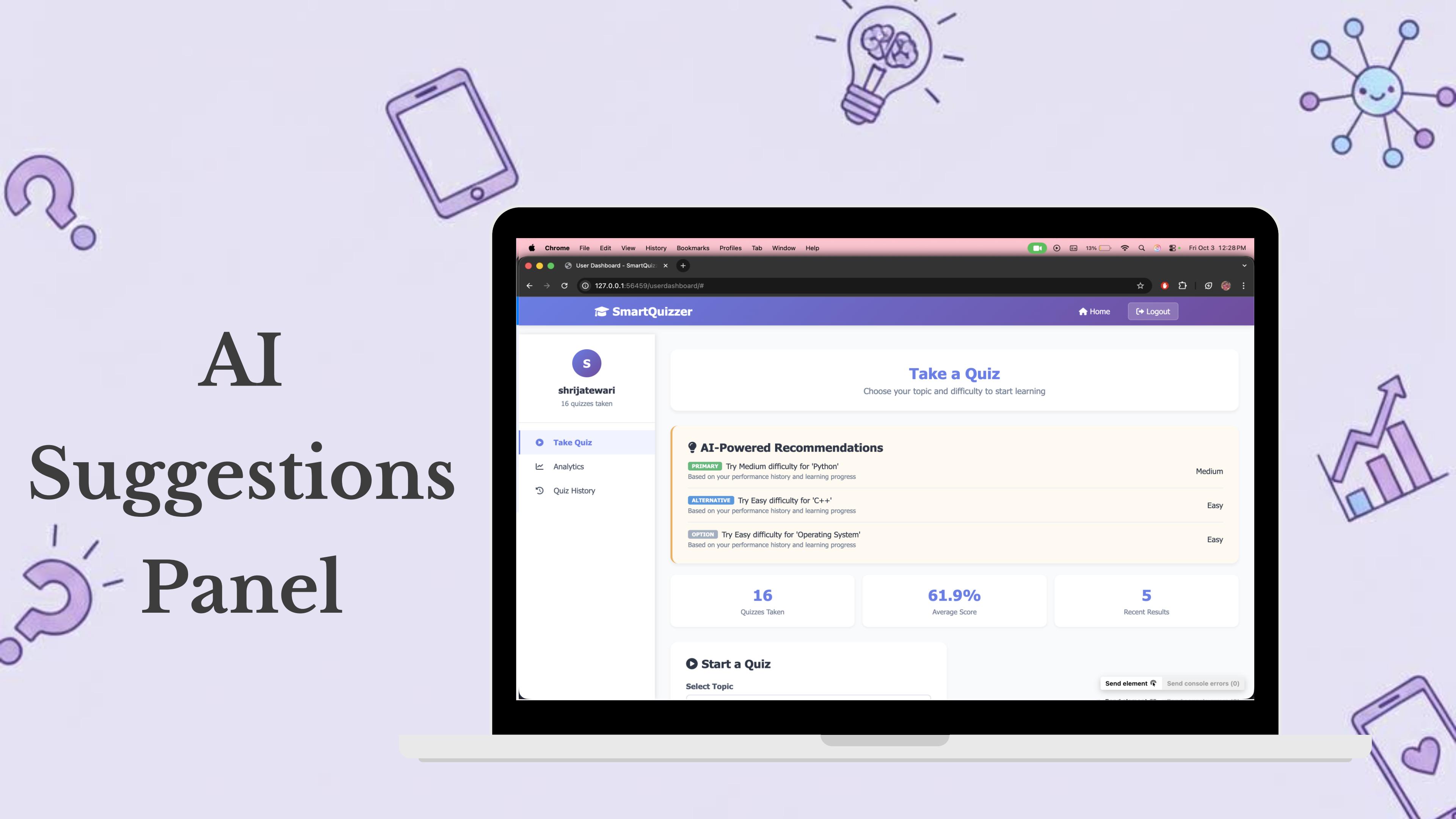


The screenshot shows the 'User Dashboard - SmartQuizz' page in a Chrome browser. The dashboard is titled 'SmartQuizz' and features a user profile for 'shrijatewari' with a history of '16 quizzes taken'. A prominent 'Take a Quiz' button is centered, with the text 'Choose your topic and difficulty to start learning'. Below this, an 'AI-Powered Recommendations' section provides tailored quiz suggestions. The recommendations are categorized as follows:

- PRIMARY:** Try Medium difficulty for 'Python'  
Based on your performance history and learning progress
- ALTERNATIVE:** Try Easy difficulty for 'C++'  
Based on your performance history and learning progress
- OPTION:** Try Easy difficulty for 'Operating System'  
Based on your performance history and learning progress

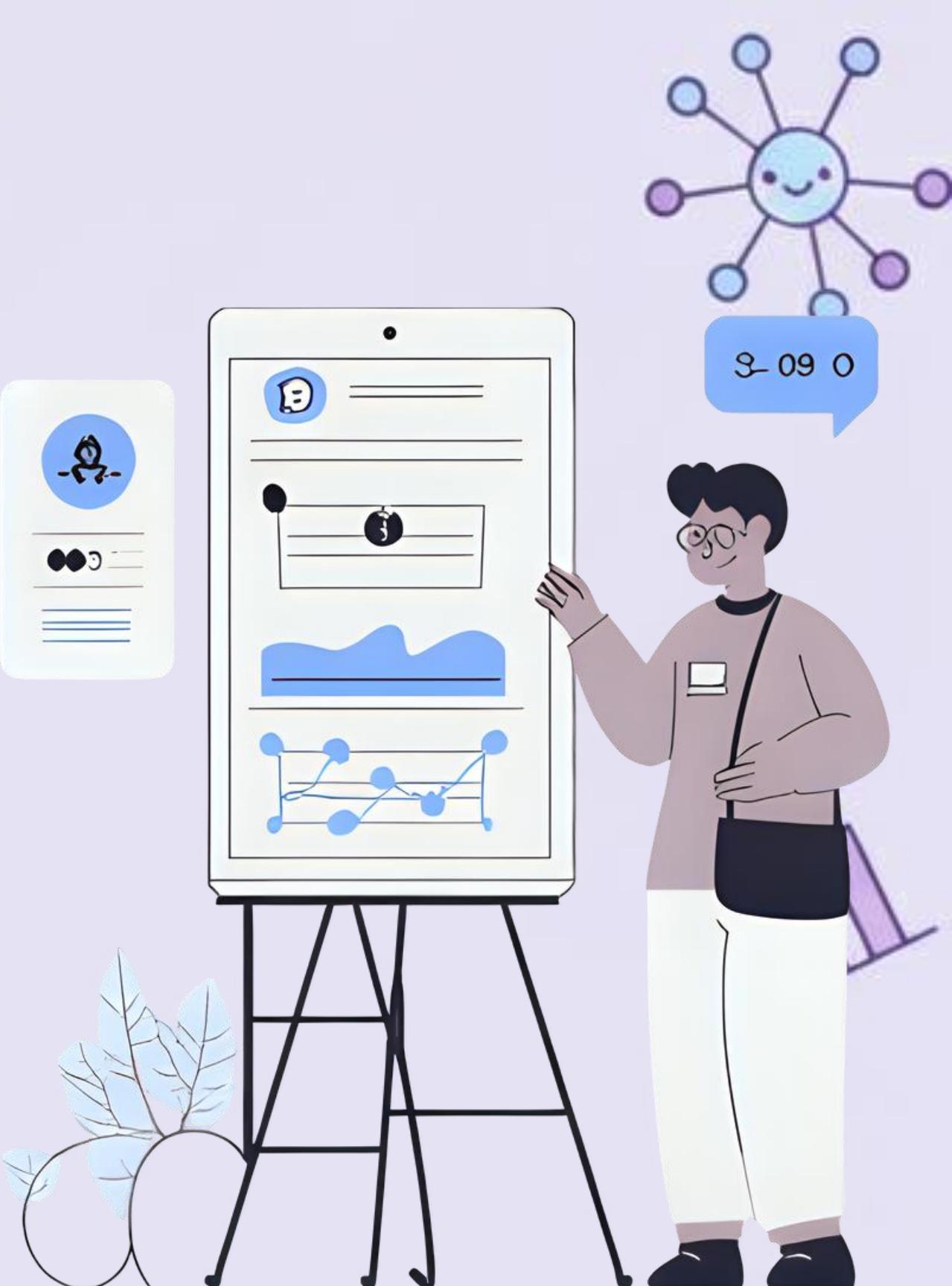
Key statistics displayed on the dashboard include:

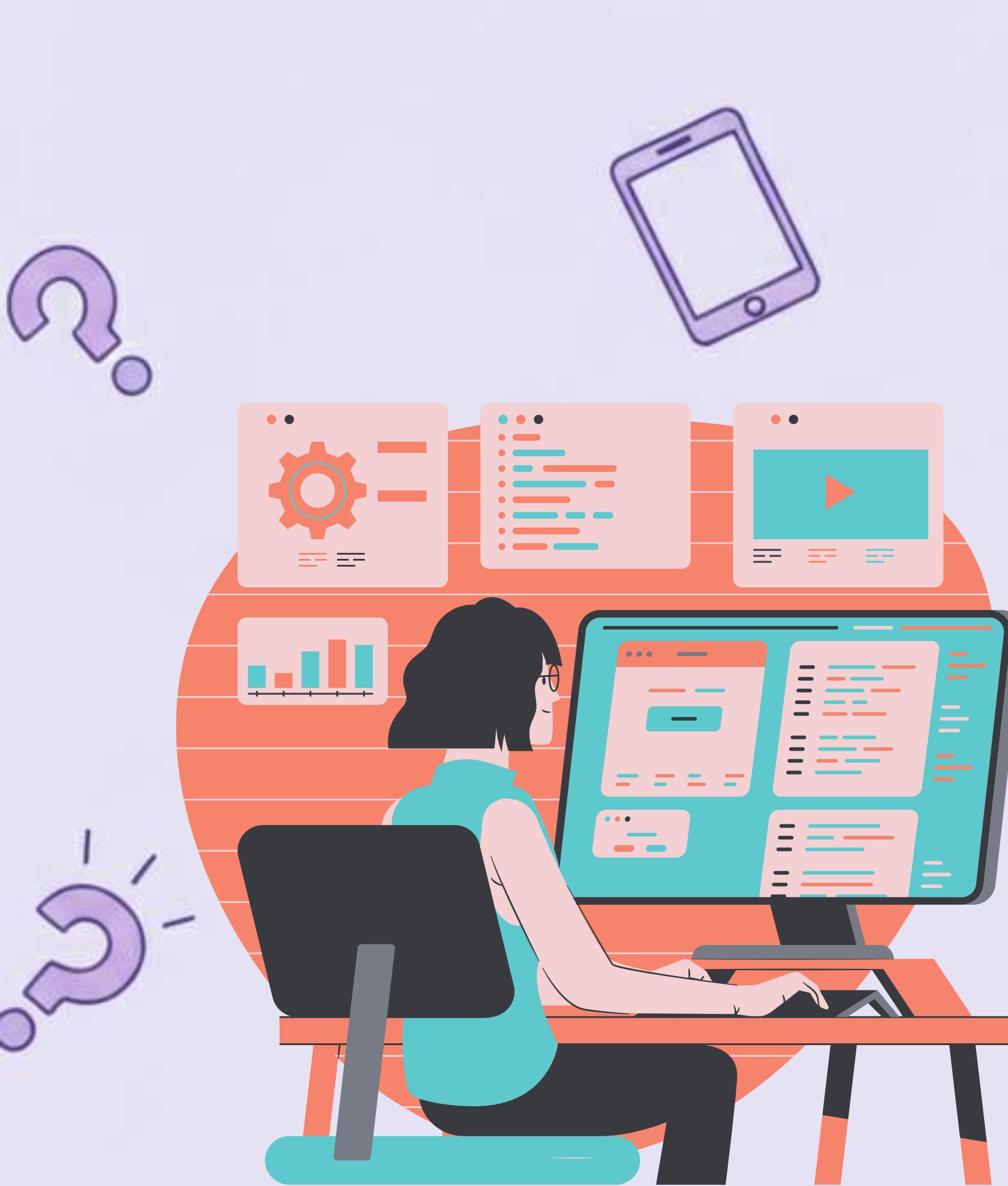
- 16 Quizzes Taken
- 61.9% Average Score
- 5 Recent Results



# Conclusion

- **SmartQuizzer** delivers **personalized** and **adaptive quizzes**, transforming the learning experience.
- It **improves learning outcomes** with data-driven insights and adaptive challenges, enhancing student performance.
- Empowering both **learners** and **educators**, SmartQuizzer is set to revolutionize personalized education on a **global scale**.





# Team Members

- **Shruthi Sivaprasad**
- **Soundarya M**
- **Tammu Harika**
- **Thanmai Sri Sathvika Dasara**

# Thank You