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# FRONT-END WEB DEVELOPMENT INTERNSHIP PROJECT

## Online Quiz Application: QuizMaster

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# OUTLINE

- **Problem Statement**
- **System Development Approach (Technology Used)**
- **Algorithm & Deployment (Step by Step Procedure)**
- **Result**
- **Conclusion**
- **Future Scope**
- **References**
- **IBM Certifications**

# PROBLEM STATEMENT

- Students and educators often face difficulties in finding lightweight, user-friendly, and interactive quiz platforms for practice and assessment.
- Existing tools are either too complex, lack customization, or fail to provide engaging interfaces.
- Many quiz applications do not offer instant feedback, detailed analytics, or performance tracking, which limits their usefulness in improving learning outcomes.
- There is a clear need for a responsive, customizable, and easy-to-use quiz application that enhances both teaching and self-learning by providing immediate scoring, progress tracking, and actionable insights.

# SYSTEM APPROACH

## Frontend Technologies Used:

- HTML5 → Structure and layout of quiz interface.
- CSS3 → Responsive design, glass-morphism styling, gradients, and animations.
- JavaScript (ES6+) → Core logic for questions, timer, scoring, and interactivity.
- Fetch API → Integration with Open Trivia DB for dynamic questions.

## Design Approach:

- Responsive Design → Works seamlessly on desktops, tablets, and mobiles.
- Glass-morphism UI → Modern, engaging look with smooth transitions.
- Interactive UX → Hover effects, progress tracking, and real-time feedback.
- Accessibility Considerations → Proper contrast, semantic markup, and keyboard navigation.

# ALGORITHM & DEPLOYMENT

## Step-by-Step Procedure:

- 1. Quiz Setup: User selects category, difficulty level, number of questions, and timer.
- 2. Question Retrieval: Fetch questions dynamically from Open Trivia DB API using Fetch API.
- 3. Quiz Execution: Display questions one by one with multiple-choice options.
  - Start real-time countdown timer with visual warnings.
  - Highlight correct/incorrect answers instantly.
- 4. Scoring & Analytics: Track correct answers, time taken, and accuracy per question.
  - Calculate total score and generate detailed results.
- 5. Result Display: Show performance summary (score, accuracy, average time).
  - Provide insights for improvement.
- 6. Error Handling & Loading States: Handle API errors, invalid inputs, and loading indicators.


# ALGORITHM & DEPLOYMENT

## Deployment:

- Hosted using GitHub Pages / Netlify for easy online access.
- Supports cross-browser compatibility and mobile responsiveness.

# RESULT

← ↻ ⓘ File /Users/janmejapandya15/Documents/FWD%20IBM%20Internship%20Edunet%20Foundation/FWD%20Project/index.html ☆ ⌵ 🔍 ... 🌐

 **QuizMaster**  
Interactive Learning Platform for Students & Educators

### Configure Your Quiz

<b>Category:</b>	<b>Difficulty:</b>
<input type="text" value="Any Category"/>	<input type="text" value="Any Difficulty"/>
<b>Number of Questions:</b>	<b>Time per Question (seconds):</b>
<input type="text" value="10"/>	<input type="text" value="30"/>

Start Quiz 🚀

## 1. Quiz Homepage

# RESULT

 **QuizMaster**  
Interactive Learning Platform for Students & Educators

### Configure Your Quiz

Any Category

General Knowledge

Science & Nature

✓ Science: Computers

Science: Mathematics

Sports

Geography

History

Animals

Difficulty:

Any Difficulty

Time per Question (seconds):

30

Start Quiz 

## 2. Select Questions Category



# RESULT



The image shows a web interface for QuizMaster, an interactive learning platform. The interface is titled "Configure Your Quiz" and features several input fields and a dropdown menu. The "Category" dropdown is set to "Science: Computers". The "Number of Questions" field is set to 10. The "Time per Question (seconds)" field is set to 30. The "Difficulty" dropdown menu is open, showing options: "Any Difficulty", "Easy", "Medium" (selected), and "Hard". A "Start Quiz" button is located at the bottom of the configuration area.

**QuizMaster**  
Interactive Learning Platform for Students & Educators

### Configure Your Quiz

**Category:**  
Science: Computers

**Number of Questions:**  
10

**Time per Question (seconds):**  
30

**Difficulty:**  
Any Difficulty  
Easy  
✓ Medium  
Hard

**Start Quiz**

## 3. Select Questions Difficulty Level

# RESULT

 **QuizMaster**  
Interactive Learning Platform for Students & Educators

### Configure Your Quiz

**Category:**  

Science: Computers

**Difficulty:**  

Medium

**Number of Questions:**  

15

**Time per Question (seconds):**  

30

**Start Quiz** 

## 4. Select Number of Questions

# RESULT

 **QuizMaster**  
Interactive Learning Platform for Students & Educators

### Configure Your Quiz

**Category:**  

Science: Computers

**Difficulty:**  

Medium

**Number of Questions:**  

15


**Time per Question (seconds):**  

45

**Start Quiz** 

## 5. Select Time Per Question

# RESULT

 **QuizMaster**

Interactive Learning Platform for Students & Educators

Question 1 of 15

28s

**How many bytes are in a single Kibibyte?**

## 6. Quiz Started with Timer

# RESULT

 **QuizMaster**

Interactive Learning Platform for Students & Educators

Question 1 of 15

25s

How many bytes are in a single Kibibyte?

2400

1024


1000

1240

Next Question →

7. Read Question and Choose Correct Answer!

# RESULT

 **QuizMaster**  
Interactive Learning Platform for Students & Educators

Question 2 of 15

42s

**What was the first Android version specifically optimized for tablets?**

Eclair

Honeycomb


Froyo

Marshmallow

Next Question →

8. Correct Answer are Marked Green!

# RESULT

 **QuizMaster**

Interactive Learning Platform for Students & Educators

Question 4 of 15

38s

**Laserjet and inkjet printers are both examples of what type of printer?**

Impact printer

Daisywheel printer

Non-impact printer

Dot matrix printer

Next Question →

9. Correct Answer are Marked Green!

# RESULT

 **QuizMaster**  
Interactive Learning Platform for Students & Educators

Question 1 of 15

25s

How many bytes are in a single Kibibyte?

2400

1024

1000


1240

Next Question →

10. Inorrect Answer are Marked Red!



# RESULT

 **QuizMaster**  
Interactive Learning Platform for Students & Educators

Question 6 of 15

40s

**What did the name of the Tor Anonymity Network originally stand for?**

The Ominous Router

The Only Router

The Onion Router

The Orange Router

Next Question →

11. Inorrect Answer are Marked Red!

# RESULT



12. Final Quiz Analytics are Shown to the User with Various Different Measures

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## GITHUB AND DEPLOYMENT LINK

Github Link : <https://github.com/Janmejaya-Pandya01/IBM-FWD-INTERNSHIP-AICTE-EDUNET-FOUNDATION.git>

Deployment link: <https://janmejaya-pandya01.github.io/IBM-FWD-INTERNSHIP-AICTE-EDUNET-FOUNDATION/>

# CONCLUSION

- The Online Quiz Application provides a simple yet powerful platform for students and educators to engage in interactive learning.
- It combines dynamic question generation, customizable settings, and real-time feedback to make quizzes more effective and enjoyable.
- With its responsive design and modern UI/UX, the application ensures accessibility across devices.
- The project successfully demonstrates skills in frontend web development, API integration, and user experience design.
- Overall, it serves as a practical and efficient solution for practice, testing, and performance analysis in an educational setting.

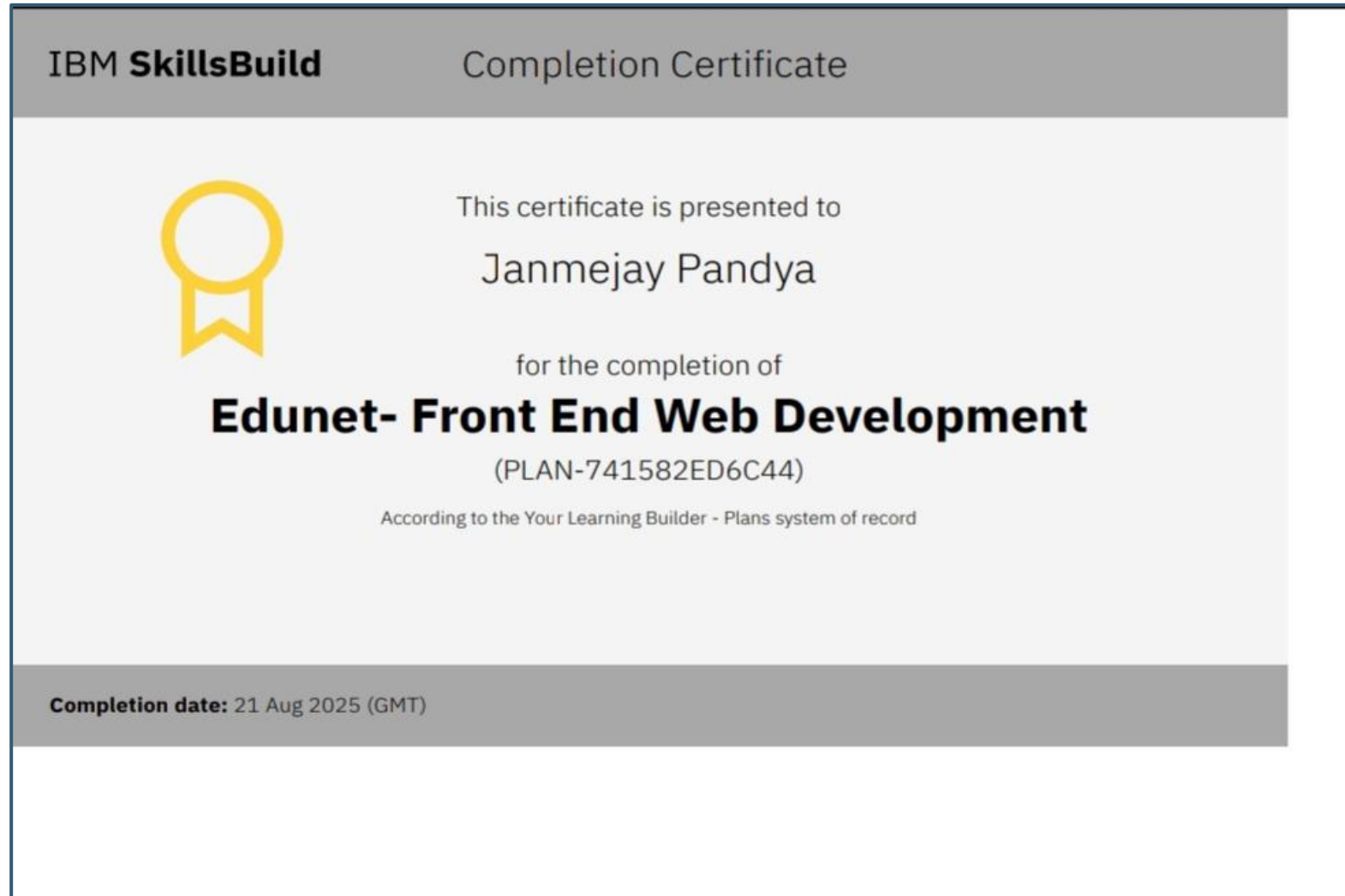
# FUTURE SCOPE

- Leaderboard & Multiplayer Mode → Introduce competitive quizzes with real-time ranking.
- Backend Integration → Store user data, quiz history, and performance analytics.
- Advanced Analytics Dashboard → Provide deeper insights using charts and progress trends.
- Offline Support → Enable quizzes without internet connectivity.
- Custom Question Bank → Allow educators to add/upload their own sets of questions.
- Gamification Features → Add badges, rewards, and levels to boost engagement.

# REFERENCES

1. Open Trivia Database (OpenTDB) – <https://opentdb.com> (Quiz Questions API)
2. MDN Web Docs – <https://developer.mozilla.org> (Authoritative JavaScript, HTML5, and CSS documentation)
3. W3C Web Standards – <https://www.w3.org> (Web accessibility and standards compliance)
4. Smashing Magazine – <https://www.smashingmagazine.com> (Modern UI/UX design practices)
5. CSS Tricks – <https://css-tricks.com> (Advanced CSS techniques and responsive design)
6. FreeCodeCamp – <https://www.freecodecamp.org> (Frontend development tutorials and guides)

# IBM Certifications:



**Certificate: Edunet- Front End Web Development**

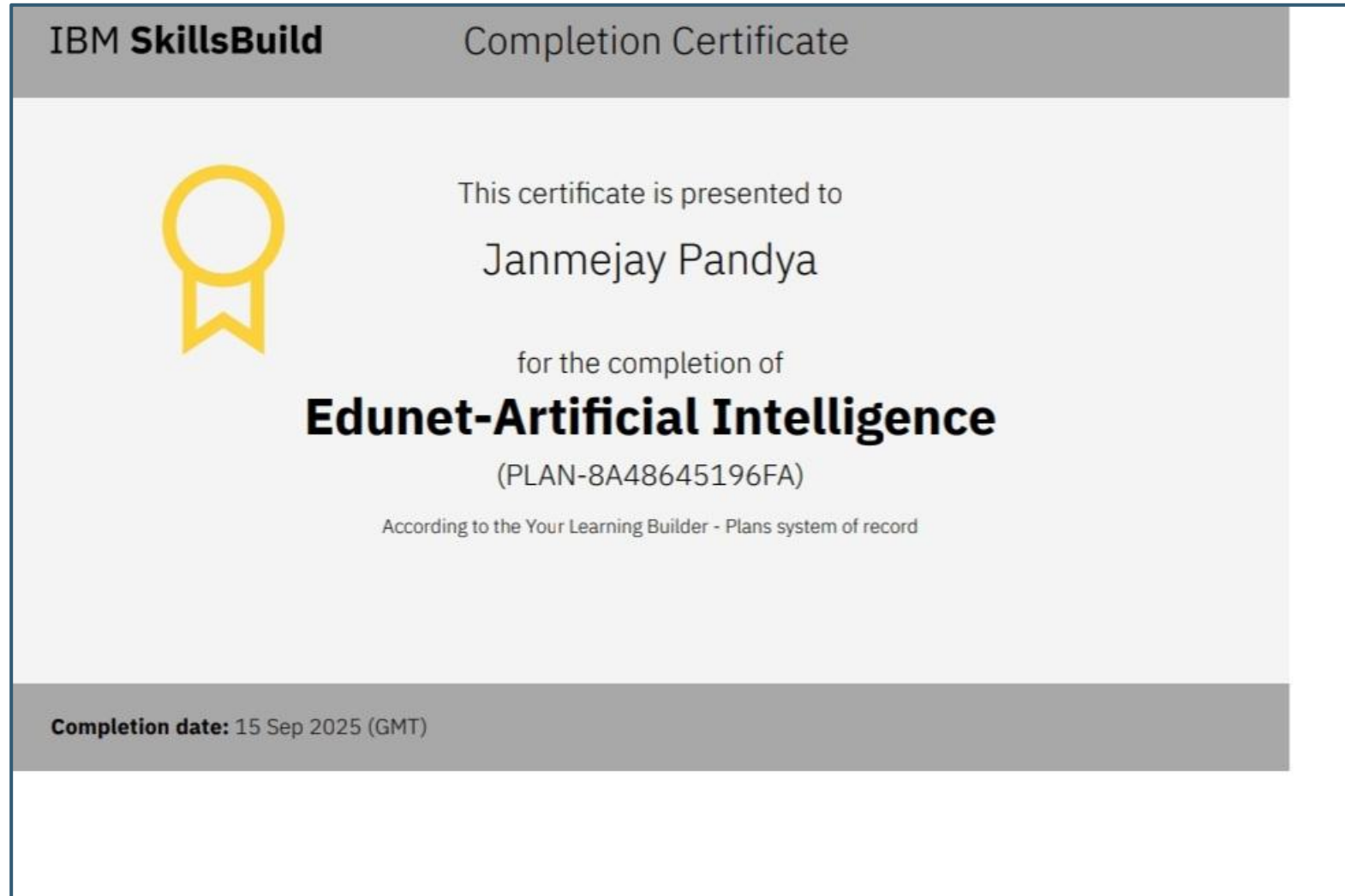
# IBM Certifications:



**Certificate with Creadly Badge: Web Development Fundamentals**



# IBM Certifications:



**Certificate: Edunet-Artificial Intelligence**

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**Certificate with Creadly Badge: Artificial Intelligence Fundamentals**



# THANK YOU