ISSN 2277-2685
IJESR/April-June. 2025/ Vol-15/Issue-2s/1274-1280
Vadde Sravani Reddy *et. al.,* / International Journal of Engineering & Science Research

Placify: A Personalized Platform for Campus Placement Preparation

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ABSTRACT

Placify is a full-stack web application tailored to aid college students in preparing for campus placements. The platform merges aptitude, logical reasoning, technical quizzes, and coding assessments into an interactive and adaptive learning system. It uses MongoDB for persistent user tracking, Node.js/Express for backend operations, and vanilla HTML/CSS/JavaScript for a responsive and theme-adaptable frontend. A key highlight is its one-time initial assessment that classifies students into beginner, intermediate, or advanced levels, thus providing personalized learning paths.

Each user's experience is unique and personalized—Placify dynamically generates a different set of questions for every user based on random selection from a large question pool. This ensures no two users receive the same questions, enhancing fairness and individual focus.

Keywords: Full-stack web app, placement preparation, assessment system, MongoDB, Express.js, user tracking, interactive quizzes, adaptive learning, personalized mentor.

I. INTRODUCTION

Placify is designed to revolutionize the placement preparation process for college students through a web-based, self-paced, and data-driven platform. Traditional platforms often lack personalization and restrict learning to static content. Placify addresses these challenges by offering a comprehensive system that evaluates users once through a 30-minute test and then dynamically tailors their learning roadmap. Personalization is a core pillar of Placify. During assessments, every student receives a different randomized set of questions covering all difficulty levels and categories. This ensures integrity, user-specific learning, and prevents rote patterns. Moreover, performance data is individually stored and analyzed to shape a user's learning journey post-assessment.

II. LITERATURE SURVEY

Several existing learning management and coding platforms like HackerRank and PrepInsta offer question banks and coding problems but lack integration of level-based customization. Moreover, many do not store fine-grained data like time-per-question and mistake trends.

Technologies like MongoDB provide document-based schema flexibility for tracking individualized user metrics. Node.js combined with Express offers efficient routing and backend services. Frontend components can be enhanced with dynamic theming and interaction using JavaScript and responsive design libraries.

Placify builds upon this ecosystem by combining persistent user state, dynamic assessments, and gamification principles.

III. PROPOSED METHODOLOGY

Placify operates through the following core

components:

1. User Authentication and Onboarding

* Secure registration and login using hashed passwords
* `isNew` flag to determine first-time users
* Redirection to the assessment module post-login (for new users)

2. Initial Assessment Engine

* 30 unique questions (10 aptitude, 10 logical, 10 technical) + 2 coding problems
* Adaptive difficulty (easy, medium, hard)
* Timer-controlled environment (45 mins)
* Time tracking per question
* Personalized question set for each user via random selection

3. Question Database Management

* 150+ questions stored in MongoDB with fields: question, options, correctAnswer, category, difficulty
* Questions are selected randomly at runtime per user session, ensuring personalized delivery

4. Result Categorization and Feedback

* Performance-based level assignment (Beginner, Intermediate, Advanced)
* Feedback includes correct/wrong answers, time taken, and improvement suggestions

5. Progress and Dashboard

* Once tested, `isNew` flag is reset
* Access to feature-rich dashboard with performance analytics and personalized roadmaps

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IV. IMPLEMENTATION

Technologies Used

The Placify system is developed using a full-stack web architecture, combining dynamic frontend technologies with a robust backend and database layer. The user interface is crafted using HTML, CSS, and JavaScript, ensuring a responsive and interactive experience. For server-side logic and API endpoints, Node.js with the Express framework is employed. User credentials and assessment data are securely managed using MongoDB, with MongoDB Compass aiding in visualizing the database structure. Security is enhanced by incorporating Bcrypt, which hashes passwords before storing them in the database. Tools such as GitHub (for version control) and Postman (for API testing and debugging) streamline the development and testing process.

Core Logic Modules

The Placify system revolves around three essential components that govern user access, quiz generation, and scoring:

1. Assessment Module

This component dynamically generates a unique set of 30 quiz questions for each user. Questions are selected randomly from various predefined categories, ensuring a diverse and balanced set. This avoids repetition and ensures fair assessments.

2. Scoring Module

After the assessment, this module evaluates user responses, calculates the total score, and measures completion time. Based on predefined scoring bands, it categorizes user performance for feedback or recommendations.

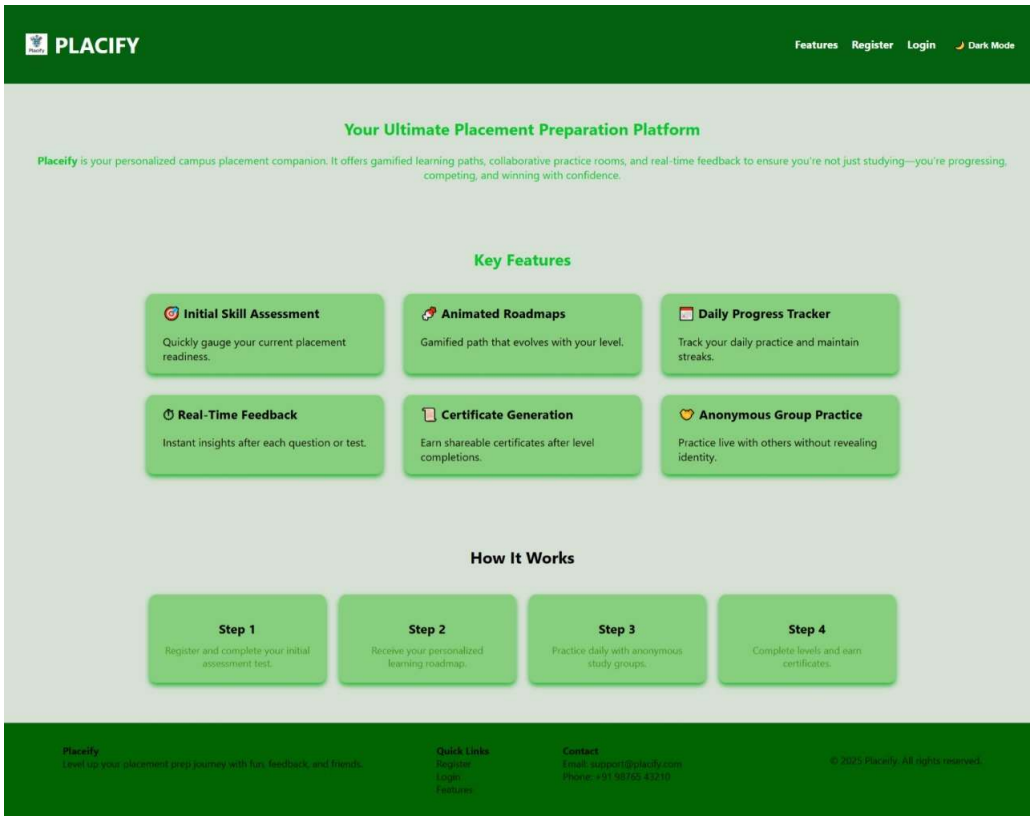
3. One-Time Access Control

To preserve the integrity of the assessment, a Boolean flag isNew is used per user:

If isNew = true, the user can take the quiz.

After completion, isNew is set to false, blocking further access. This ensures each user only participates once.

V. RESULT


PLACIFY
Features
Register
Login
Dark Mode
Your Ultimate Placement Preparation Platform
Placeify is your personalized campus placement companion. It offers gamified learning paths, collaborative practice rooms, and real-time feedback to ensure you're not just studying—you're progressing, competing, and winning with confidence.
Key Features
Initial Skill Assessment
Quickly gauge your current placement readiness.
Animated Roadmaps
Gamified path that evolves with your level.
Daily Progress Tracker
Track your daily practice and maintain streaks.
Real-Time Feedback
Instant insights after each question or test.
Certificate Generation
Earn shareable certificates after level completions.
Anonymous Group Practice
Practice live with others without revealing identity.
How It Works
Step 1
Register and complete your initial assessment test.
Step 2
Receive your personalized learning roadmap.
Step 3
Practice daily with anonymous study groups.
Step 4
Complete levels and earn certificates.
Placeify
Quick Links
Register
Login
Features
Contact
Email: support@placify.com
Phone: +91 98765 43210
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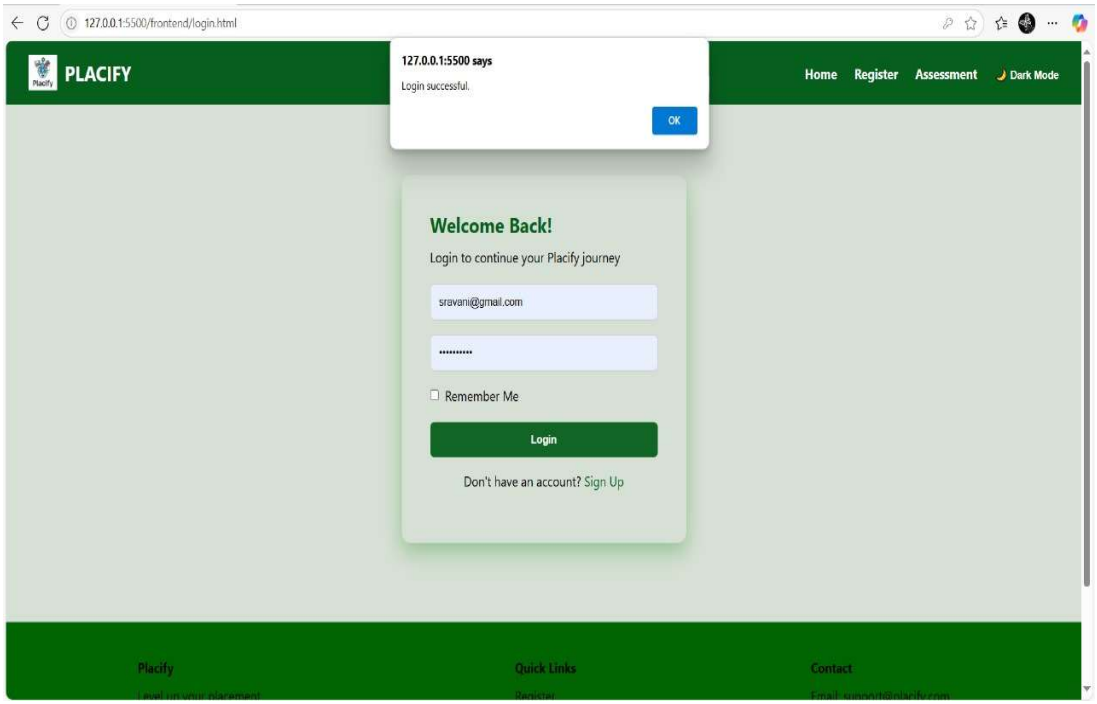
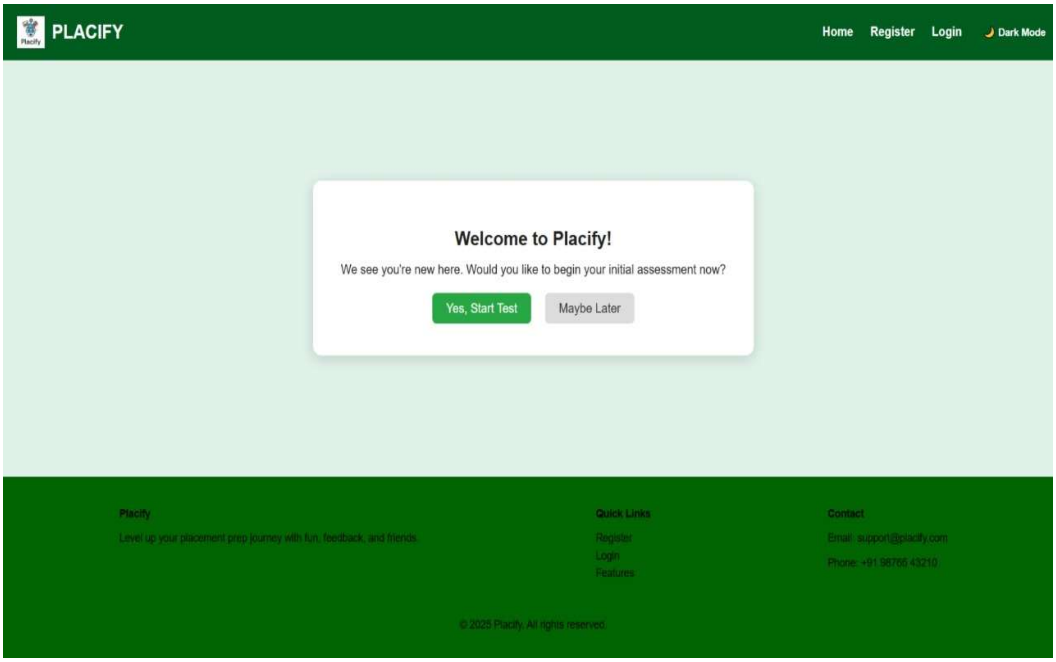

127.0.0.1:5500/frontend/login.html
127.0.0.1:5500 says
Login successful.
OK
PLACIFY
Home
Register
Assessment
Dark Mode
Welcome Back!
Login to continue your Placify journey
sravani@gmail.com
Remember Me
Login
Don't have an account? Sign Up
Placify
Quick Links
Contact


PLACIFY
Home
Register
Login
Dark Mode
Welcome to Placify!
We see you're new here. Would you like to begin your initial assessment now?
Yes, Start Test
Maybe Later
Placify
Level up your placement prep journey with fun, feedback, and friends.
Quick Links
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Login
Features
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Email: support@placify.com
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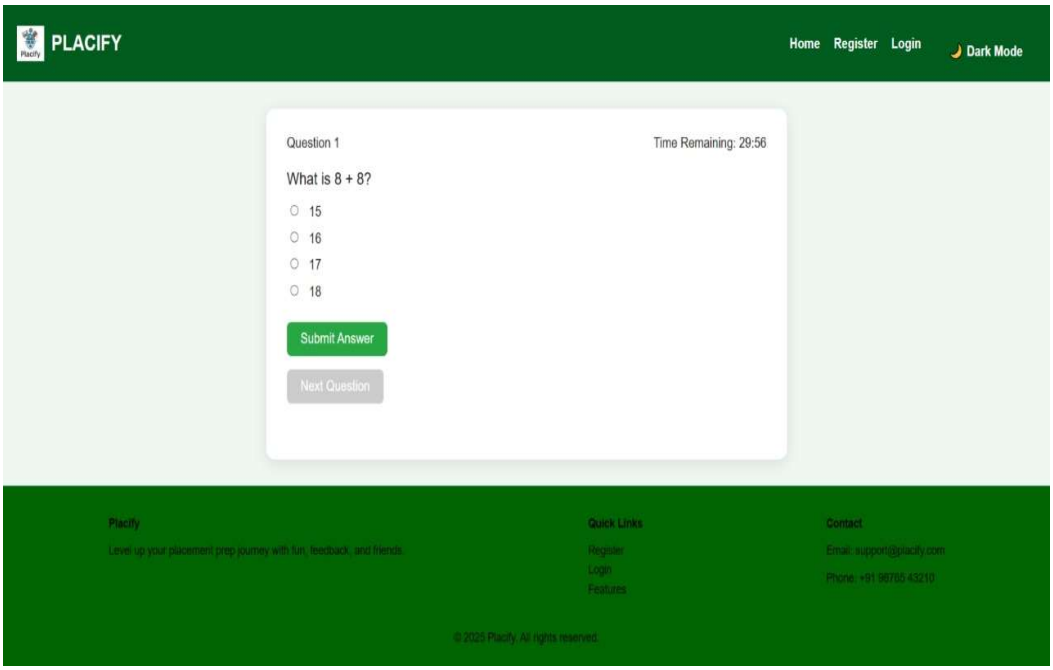
PLACIFY
Home
Register
Login
Dark Mode
Question 1
Time Remaining: 29:56
What is 8 + 8?
15
16
17
18
Submit Answer
Next Question
Placify
Level up your placement prep journey with fun, feedback, and friends.
Quick Links
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Login
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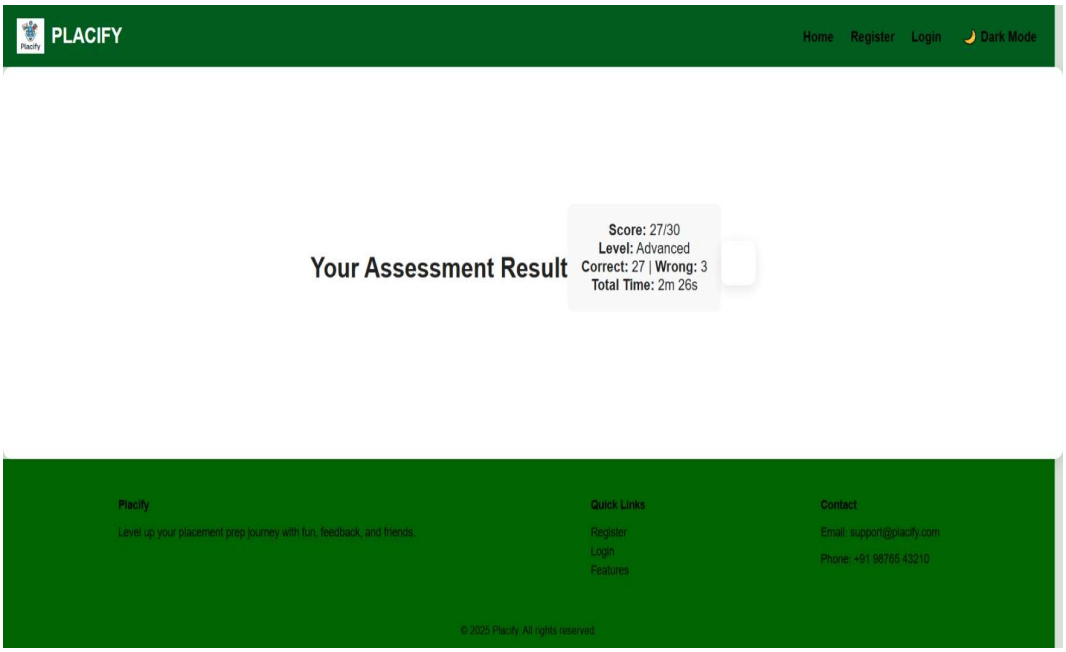
PLACIFY
Home
Register
Login
Dark Mode
Your Assessment Result
Score: 27/30
Level: Advanced
Correct: 27 | Wrong: 3
Total Time: 2m 26s
Placify
Level up your placement prep journey with fun, feedback, and friends.
Quick Links
Register
Login
Features
Contact
Email: support@placify.com
Phone: +91 98765 43210
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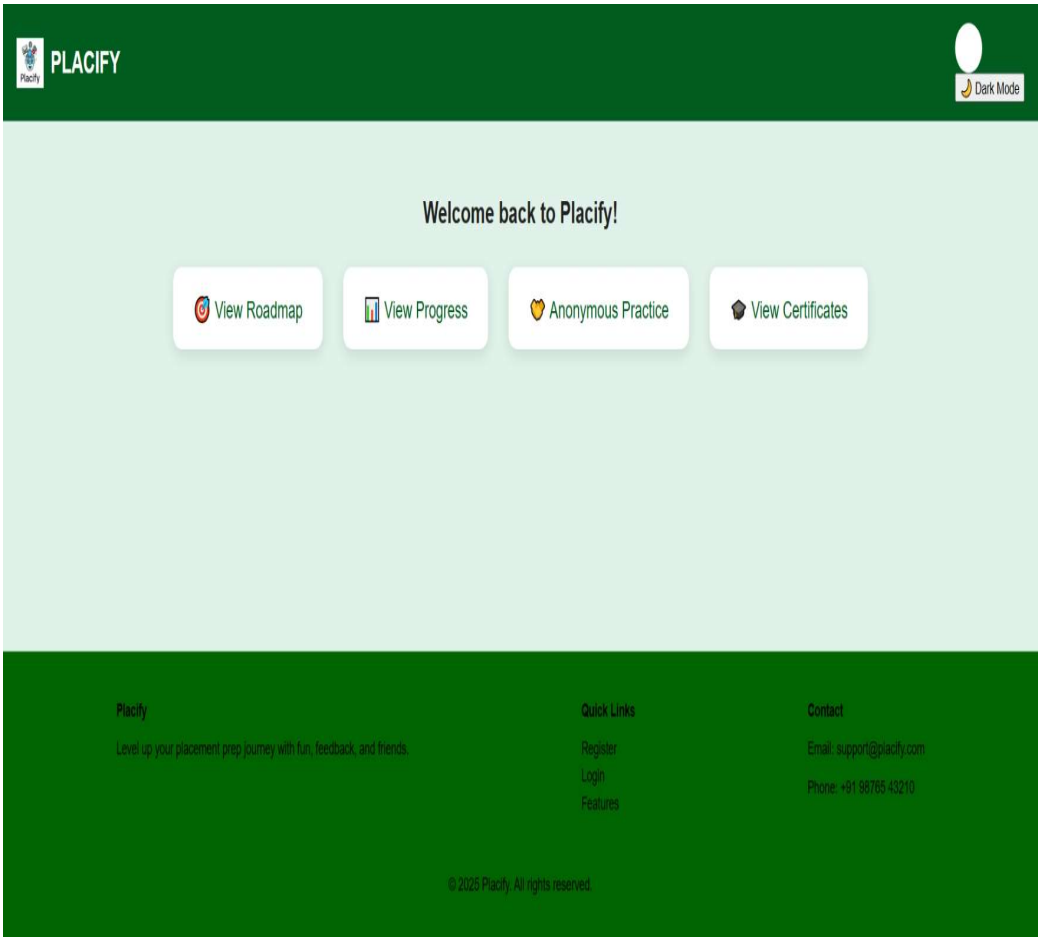
PLACIFY
Dark Mode
Welcome back to Placify!
View Roadmap
View Progress
Anonymous Practice
View Certificates
Placify
Level up your placement prep journey with fun, feedback, and friends.
Quick Links
Register
Login
Features
Contact
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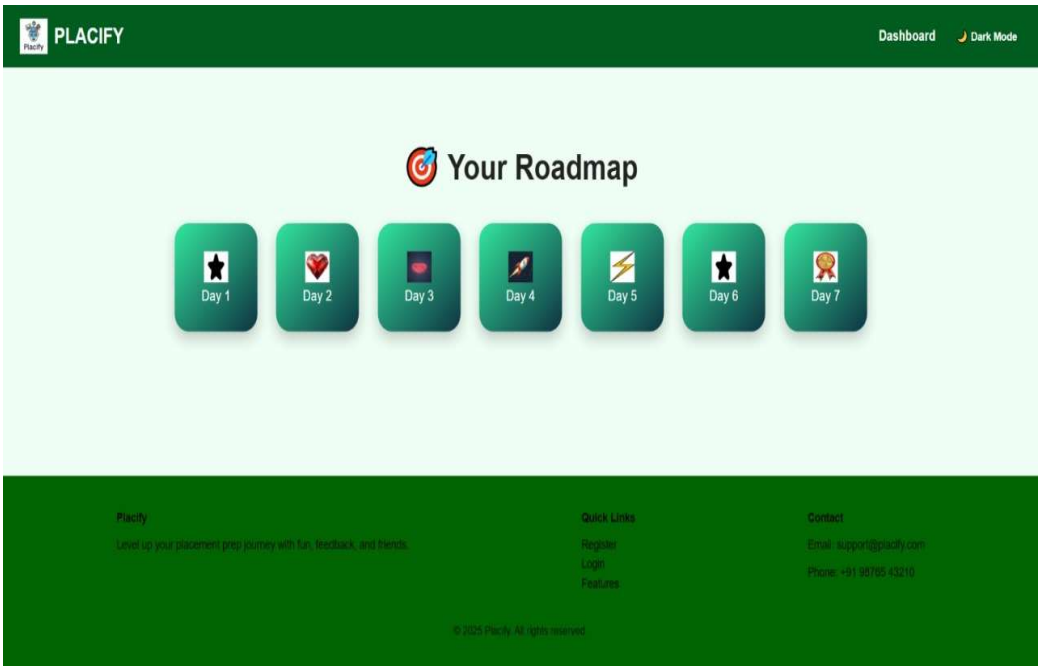

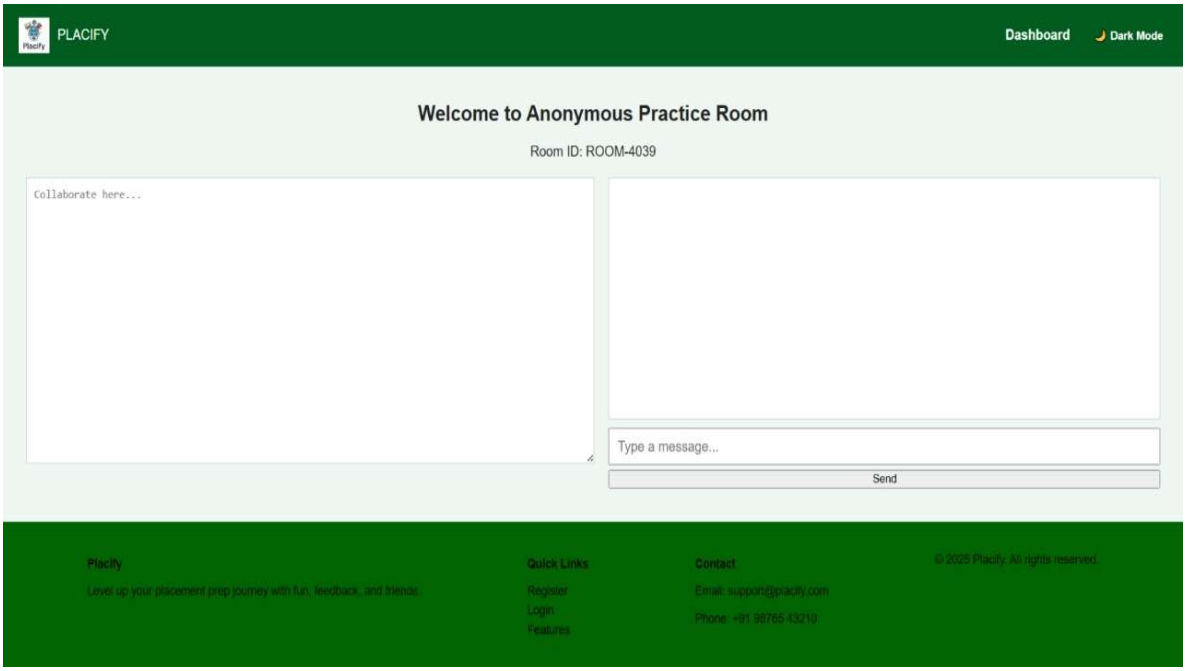

VI. CONCLUSION

Placify is a complete placement preparation platform that offers a one-time, fair assessment to personalize each user's learning journey. Its intuitive UI and secure backend ensure a seamless and engaging experience. The platform adapts to individual performance, promoting focused improvement through tailored question sets.

Upcoming features like AI-driven recommendations, group practice rooms, and milestone certificates will further enhance personalization and motivation. Placify aims to be an intelligent, user-centric solution for career readiness.

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