**PROJECT REPORT SYNOPSIS**

**ON**

**Quick-Type**

**SUBMITTED TO**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**FOR**

**Full Stack Engineering(22CS037)**

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**Index**

# **Sr. no Topic Page No**

1. Problem Statement 3
2. Title of project 3
3. Objective & Key Learning’s 3
4. Options available to execute the project 4
5. Advantages/ Disadvantages 4
6. References 6

**Problem Statement:**

In today’s digital age, typing speed and accuracy are essential skills for efficient communication and productivity. However, many individuals struggle with slow typing speeds or poor typing accuracy, which can hinder their performance in both professional and academic environments. Traditional typing practice methods often lack personalization, engagement, and structured feedback to help users improve their skills effectively

**Title of project:**

Quick-type

**Objective:**

* ·Built a user-friendly platform that helps users increase their typing speed and accuracy through structured exercises and consistent practice.
* · Tailor exercises to the individual user’s skill level, offering personalized lessons that adjust difficulty based on progress and performance.
* Implement a system that tracks typing speed (words per minute), accuracy, and other key metrics in real-time, allowing users to monitor their progress over time

**Key Learning’s:**

**User Management:**

1. Secure authentication and authorization using JWT and bcrypt.
2. Role-based access control for users and administrators.

**Rental Processing and Management:**

* Efficient database design using MongoDB and Mongoose.
* API development with Express.js for handling typing test results and user data.

**Options available to execute the project:**

Programming Languages:

* JavaScript (for both frontend and backend development)

Frontend Framework:

* React.js: A JavaScript library for building interactive user interfaces.

Backend Framework:

* Express.js (Node.js): A minimal web application framework used for API and routing.
* Mongoose: An ODM tool for MongoDB to manage database schemas.

APIs:

* Use RESTful APIs for communication between frontend and backend.

Version Control:

* GitHub for collaboration and project management.

Database:

* MongoDB: A NoSQL database for handling user profiles and test records.

**Advantages/ Disadvantages:**

**Efficiency and Scalability:**

* Lightweight backend with optimized data handling ensures fast response times.
* MongoDB enables efficient handling of large datasets for user records.

**User Engagement:**

* Interactive UI and real-time feedback encourage consistent practice.
* Personalized progress tracking enhances motivation.

**Security and Reliability:**

* Secure authentication using JWT and password hashing with bcrypt.
* Data validation mechanisms to prevent common security threats.

**Disadvantages:**

**Technical Complexity:**

* Ensuring real-time responsiveness requires performance optimizations.
* Maintaining a scalable database schema involves complexity.

**Security Challenges:**

* Handling user data securely requires robust encryption and validation.
* Protection against API misuse and unauthorized access must be maintained.

**Competitive Market:**

* Many existing platforms offer similar typing test features.
* Differentiation through UI/UX and unique features is necessary.

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