INVENTION DISCLOSURE FORM FOR PATENTS

Applicant Name-Marwadi University

1. **Particulars of Inventors**

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2. **Provide title of the invention:**
   LearnDesk : A Secure and Dynamic Online learning Platform

3. **In 100 words or less, please provide an abstract or summary of the invention:**
   LearnDesk is a web-based platform designed to streamline placement preparation through interactive learning and assessment. It integrates topic-wise articles, built-in and random quizzes, and class-based management features. Teachers can create custom quizzes and monitor student performance in real time, while students can practice and track progress securely. The platform is developed using the MERN stack, ensuring scalability, efficiency, and data protection through JWT-based authentication. LearnDesk bridges the gap between static learning websites and unstructured quiz portals by providing an all-in-one secure, customizable, and engaging environment for both students and educators.

4. **Detailed description of the invention:(Answer to all below are required in detail)**
   a. **Problem the invention is solving : General Utility/application of the invention**
      Students and teachers preparing for placements often rely on multiple websites for learning and practicing quizzes. Existing platforms like GeeksforGeeks or Indiabix do not provide secure, class-based, and real-time quiz systems. LearnDesk solves this by offering a single platform where students can learn, practice, and take secure quizzes, while teachers can create custom quizzes and track student progress.
   b. **Advantages of the invention disclosing about the increased efficiency/efficacy .**
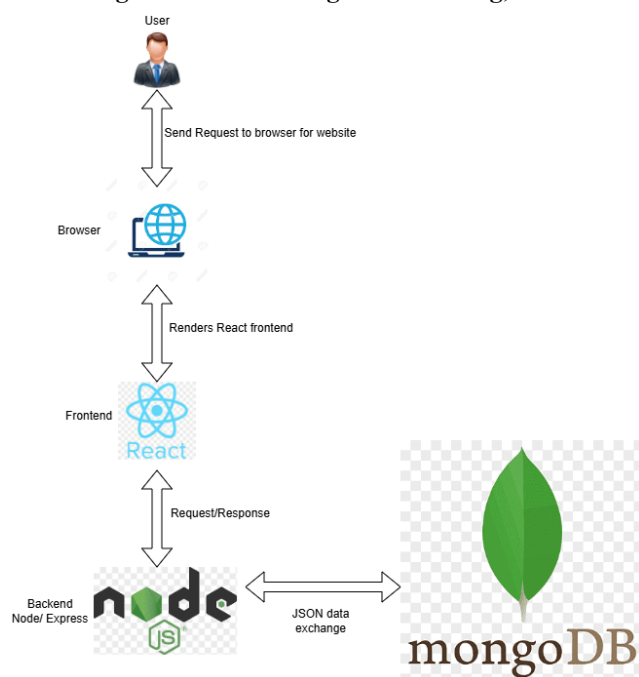   LearnDesk integrates learning and testing, ensures secure access using JWT, provides real-time results and analytics, and supports class-based custom quizzes. This improves efficiency, engagement, and accuracy compared to existing quiz platforms.
   c. **Best way of using the invention as well as possible variants.**

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The platform is best used as a web application through browsers, where users register, learn, and take quizzes. Future variants may include a mobile app, AI-based quiz recommendations, or integration with college ERP systems.

d. Working of invention along with Drawing, schematics and flow diagrams.

5. **Have you conducted a Primary Patent Search? Yes / No**
   No.

6. **Existing state-of-the-art and prior arts: (Brief background of the existing knowledge/product/process in the market) :**
   Existing platforms like GeeksforGeeks, Indiabix, and Canvas LMS address partial aspects of the learning ecosystem. GeeksforGeeks focuses on theoretical preparation but lacks real-time custom quizzes. Indiabix offers practice quizzes but without authentication or progress tracking. Canvas supports class-based learning but doesn't include built-in quizzes or secure assessment modules. None of these combine learning, testing, and performance analytics in a unified, secure system.

7. **List out the known ways about how others have tried to solve the same or similar problems? Indicate the disadvantages of these approaches. In addition, please identify any prior art documentation or other material that explains or provides examples of such prior art efforts.**

Existing State of Art	Drawbacks in Existing State of Art	Overcome (How LearnDesk Overcomes the Drawback)
GeeksforGeeks (GFG) – Provides topic-wise learning materials and articles.	Offers only theoretical content with no interactive or real-time quiz features for self-assessment.	LearnDesk integrates both learning and real-time assessment, allowing students to read topics and immediately test their understanding.

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Indiabix – Online quiz and practice question platform.	Lacks secure login, class-based tracking, and real-time analytics; questions are repetitive and not customizable.	LearnDesk provides secure authentication, random/custom quizzes, and performance analytics, improving engagement and reliability.
Canvas LMS / Google Classroom – Used for classroom management.	Focused on assignment submissions; does not have built-in timed quizzes or automated MCQ evaluations.	LearnDesk combines classroom management with built-in MCQ assessments and automatic evaluation, streamlining teacher-student interaction.
Traditional Offline Tests – Paper-based aptitude tests conducted during placement training.	Time-consuming, prone to human errors, manual evaluation, and lacks progress tracking.	LearnDesk automates quiz creation, evaluation, and report generation, saving time and reducing human error.
Generic Quiz Websites – Unverified online quiz portals.	No authentication or user roles; data security is weak and results are often unreliable.	LearnDesk uses JWT-based security and role-based access, ensuring verified participation and data integrity.

8. **List the Technical features and Elements of the invention along with the Description of your invention from start to end.**

Feature	Description
User Registration and Login	Allows students and teachers to securely register and log in to the system using role-based authentication.
Dashboard Access	Provides separate dashboards for students and teachers to view quizzes, articles, and performance analytics.
Article-Based Learning	Offers topic-wise learning materials and articles to help students prepare before attempting quizzes.
Built-in Quizzes	Contains pre-added quizzes for students to practice common aptitude and reasoning topics.
Random Quiz Generation	Automatically generates quizzes with random questions from different topics for diverse practice sessions.
Custom Quiz Creation (Teacher Feature)	Enables teachers to create personalized quizzes for their classes based on difficulty level or topic.

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Class Management	Allows teachers from the counseling department to create classes, add students, and assign quizzes.
Real-Time Quiz Assessment	Evaluates quiz responses instantly and displays results as soon as a student completes the test.
Performance Analytics	Displays progress reports, accuracy levels, and score trends to help students track improvement.
Result and Report Generation	Automatically generates detailed reports for both students and teachers after quiz completion.
Cloud-Based Accessibility	The platform is accessible from anywhere, allowing students and teachers to use it remotely.
Scalability	Designed to handle multiple classes, users, and quizzes simultaneously without performance drop.

9. **List out the features of your invention which are believed to be new and distinguish them over the closest technology.**
Real-time secure quiz environment with JWT-based authentication
Integration of articles, quizzes, and classroom management in a single portal
Randomized question generation for unbiased assessment
Teacher-controlled custom quiz generation and student grouping
In-depth analytics and progress reports for continuous learning improvement

10. **Has the invention been built or tested or implemented? If yes please provide the Efficiency/Efficacy details of the invention**
Yes, the LearnDesk application has been fully implemented and tested. The platform efficiently handles multiple users simultaneously, provides accurate quiz evaluations, and ensures secure login and data integrity. It has been successfully used in internal placement preparation exercises.

11. **Have you sold, offered for sale, publicly used or published anything related to this invention? If yes, please briefly explain the dates and circumstances. List those individuals to whom you have revealed your invention. Were non-disclosure documents signed prior to disclosure in each case? Please state any deadlines of which you may be aware of for filing an application on this invention.**
No public sale or commercial deployment has been made yet. The idea and implementation have only been shared internally with college mentors and project evaluators. No Non-Disclosure Agreements were signed as it was for academic purposes.

12. **Include any reasons that your invention would not have been obvious to someone of average skill in the art. :**
The integration of a learning portal, custom quiz generation, and secure real-time assessment in a single system is unique. Most existing solutions focus on either learning or testing. LearnDesk combines both with secure authentication and class management, making it a non-obvious and innovative approach for structured placement preparation.

13. **Additional comments by the inventor (if you want to give more details out of scope of this IDF).**

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Future enhancements may include AI-driven question difficulty adjustment, mobile app versions, and integration with external recruitment systems. LearnDesk aims to evolve into a complete placement readiness ecosystem combining learning, assessment, and analytics.

14. Flowchart