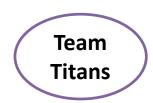
Amaravati Quantum Valley Hackathon 2025



TITLE PAGE

- Problem Statement ID AQVH915
- Problem Statement Title Build a dashboard that shows live/public quantum computing jobs from IBM Quantum
- **Theme -** Quantum Jobs Tracker
- PS Category- Software
- Team ID-
- Team Name Team Titans





Build a dashboard that shows live/public quantum computing jobs from IBM Quantum



- □ Objective: Create a responsive dark-themed Quantum Jobs Tracker dashboard using HTML, CSS, and JavaScript for the frontend, with a Node.js and Express.js backend, and MongoDB database
- ☐ Functionality: Dashboard with sortable/filterable

 quantum jobs list, live mock updates, and a modal for

 detailed job info.

 Unresponsive
 Jobs Dashboard

☐ Data Handling: Code uses mock data with comments Basic, static job listings

Building a Quantum Jobs Tracker

Implement Backend

Node.js and Express.js setup

Connect Database

MongoDB integration for data storage

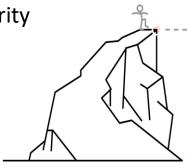
Add Functionality

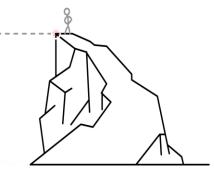
Sortable list, live updates, job details

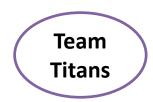
Responsive Jobs Dashboard

Modern, dynamic job tracking

on IBM Quantum API integration and a key security warning for handling credentials.







TECHNICAL APPROACH



• Frontend:

- HTML, CSS, JavaScript
- Styling: Tailwind CSS or styled-components for dark, clean UI
- Backend:
 - Node.js runtime
 - Express.js web framework
- Database:
 - MongoDB (with Mongoose ODM for schema management)

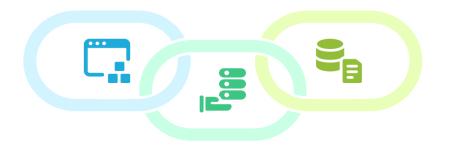
Building Blocks of a Quantum Interface

Frontend

The user-facing part of the interface, focusing on visual appeal and user interaction.

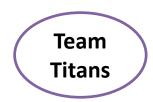
Database

The storage and management of data that the interface relies on.



Backend

The server-side logic and data processing that supports the interface.



FEASIBILITY AND VIABILITY



Feasibility:

Fully feasible using MERN stack with real-time and role-based features.

Main Challenges:

Secure authentication, real-time data sync, database optimization, UI consistency.

• Key Solutions:

Use JWT and encrypt for security, Redux/Context for state, Socket.IO for updates, MongoDB indexing, reusable UI components, and thorough testing.

MERN Stack Feasibility

Secure Authentication

Implementing JWT and bcrypt for robust user security.

Database Optimization

Employing MongoDB indexing for efficient data retrieval.



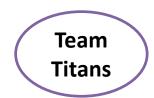
Real-time Data Sync

Utilizing Socket.IO for seamless data updates.

UI Consistency

Designing reusable components for a uniform user experience.

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IMPACT AND BENEFITS

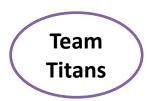


- User Impact: Enables real-time, personalized job management to boost productivity.
- Social: Improves job market transparency and access.
- Economic: Cuts costs and streamlines job workflows.
- Environmental: Supports digital, paperless processes reducing physical resources and travel

Unveiling the Multifaceted Benefits of a Job Platform



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RESEARCH AND REFERENCES



UK government quantum computing funding overview

Quantum Workplace intelligence dashboard example

Key benefits of quantum computing for business

MERN stack full-stack app guide with real-time features

 MERN stack note-taking app example with secure auth and CRUD

Quantum Computing Resources

Feasibility Studies

UK Government Innovation Funding Overview for Quantum Tech Applications



Benefits of Quantum Computing

Deep dive into quantum technologies and their business impact



Note-taking Full Stack App

Example of secure authentication and CRUD operations using MERN stack





Quantum Workplace Intelligence

A real-world example of a datadriven dashboard for workforce experience insights



High-Performance Full-Stack Apps

Practical guide and challenges for MERN stack development with real-time features

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