Bytexl’s Guided Project - Students’ User Guide

## Build job-relevant skill sets by developing solutions to practical use cases

Bytexl’s educators have created specialized guided projects to help you practice essential technology languages and software, such as Python, Java, Node.js, and more. In about 2 hours, you can build a project that enhances your job-ready skills as your educator guides you through a hands-on experience on Bytexl’s app.

## Instructions for Students

### Project-Based Learning Course Overview

#### About the Project

This project provides hands-on experience in creating a real-world application using the latest tools and technologies. You will learn to manage data, build user interfaces, and integrate essential functionalities that are relevant in the job market.

#### Prerequisites

- Basic knowledge of \*\*JavaScript, Node.js, MongoDB, and React\*\*.  
- Familiarity with CRUD operations and frontend-backend integration is helpful.

### What Will You Learn?

- Full-stack development using the \*\*MERN\*\* stack.  
- Implementing data visualization and event management.  
- Developing secure and responsive web applications.

### Skills You Will Practice

- Backend setup and API creation.  
- User interface development and data handling.  
- Debugging and testing to ensure functional accuracy.

### How to Execute Your Project?

1. \*\*Project Access\*\*: Access all necessary tools and project materials directly on Bytexl’s app.  
2. \*\*Device Requirements\*\*: Complete this project on a desktop or laptop, as it cannot be developed on mobile phones.  
3. \*\*Setup Instructions\*\*: Detailed setup instructions are provided in the project resources to ensure a smooth workflow.

## Course Objectives and Structure

### Course Objectives

In this project, we will focus on the following objectives:  
1. Set up a backend with MongoDB and Node.js.  
2. Develop a data-driven admin dashboard interface.  
3. Enable data management through CRUD operations.  
4. Visualize data using charts and calendar components.  
By the end of this project, you will be able to build a full-stack dashboard and deploy it effectively.

### Course Structure

The course is divided into three parts:  
  
1. \*\*Course Overview\*\*: Introductory reading material.  
2. \*\*Project Structure\*\*:  
- \*\*Task 1\*\*: Backend setup with MongoDB integration.  
- \*\*Task 2\*\*: CRUD API development and testing.  
- \*\*Task 3\*\*: Frontend components with data grids and charts.  
- \*\*Task 4\*\*: User interface testing and final deployment.  
3. \*\*Meet Your Educator\*\*:  
- \*\*Educator\*\*: Suyash Gupta, an experienced instructor with a background in software engineering and web development.

## Expected Outcomes

Upon completing this project, you should be able to:  
- Develop and deploy a functional dashboard application.  
- Integrate and manage data in real-time.  
- Display data dynamically with charts and tables for visualization.  
- Apply full-stack development skills to create reliable web applications.

## Quiz Questions

\*(5 MCQs with Answers Highlighted)\*

Which database is used in this project?

A) MySQLA) MySQL

B) PostgreSQLB) PostgreSQL

C) MongoDB ✅**C) MongoDB ✅**

D) SQLiteD) SQLite

What does CRUD stand for?

A) Create, Run, Update, DeleteA) Create, Run, Update, Delete

B) Check, Remove, Update, DisplayB) Check, Remove, Update, Display

C) Create, Read, Update, Delete ✅**C) Create, Read, Update, Delete ✅**

D) Collect, Retrieve, Upload, DeleteD) Collect, Retrieve, Upload, Delete

Which framework is used for the frontend in this project?

A) AngularA) Angular

B) Vue.jsB) Vue.js

C) React.js ✅**C) React.js ✅**

D) EmberD) Ember

What component is used for event management in this project?

A) Data GridA) Data Grid

B) Calendar ✅B) Calendar ✅

C) Chart.js**C) Chart.js**

D) Form ValidatorD) Form Validator

What type of validation is implemented in the project forms?

A) Database validationA) Database validation

B) Client-side validation onlyB) Client-side validation only

C) Both client-side and server-side validation ✅**C) Both client-side and server-side validation ✅**

D) No validationD) No validation

## Earn a Certificate

After completing the project:  
1. Upload your code for assessment.  
2. Complete the Quiz to assess your knowledge.  
  
You will earn a certificate if you score \*\*80% or more\*\*.

This guide ensures you have a clear roadmap to complete the project successfully and receive certification based on your skills.