Workshoply

Workshop Management System

Nishant Jadhav

🌐 linktr.ee/nisoojadhav

Naranlala College of Professional and Applied Sciences

Bachelor of Computer Application

Semester 5 Mini Project Documentation

TY 2022-2023

NARANLALA
COLLEGE OF PROFESSIONAL & APPLIED SCIENCES
BHAGVATI SANKUL, NEAR ERU CHAR RASTA,
NAVSARI – 396 450

CERTIFICATE

This is to certify that **Mr./Miss. Nishant J. Jadhav,** Exam No.000000 student of **B.C.A. 5th semester** of our college have successfully prepared and submitted Project Report on **"Workshop Management System"** as a partial fulfillment for the course of **Bachelor of Computer Application (Minor Project Sem. V)** during the academic year **2022-2023**.

_____ _____

DATE **Guide: Mr./ Ms.**

_____ _____

Dr. S. M. NAIK
(I/C PRINCIPAL, NLCPAS)

Dr. A. B. PATEL
(DEPT. HEAD, BCA)

_____

(EXTERNAL EXAMINER)

Acknowledgment

Dear Reader,

I sincerely feel that I am not the only one to be credited for this Web App. This mini project work is an integrated effort of all self-study from Online Forums, YouTube tutorials, Official Docs, StackOverflow, and all those concerned, by whose cooperation and practical guidance; I achieved its completion.

It is a curriculum to undergo project work in any system. I preferred the **"WORKSHOP MANAGEMENT SYSTEM"** at Naranlala College of Professional and Applied Sciences, Navsari.

I would like to take this opportunity to express my gratitude to all the faculty members of the Computer Science department, Principal **Dr. Sunil Naik,** Head of Department **Dr. Ashish Patel**, and special thanks to **Mr. Chirag Mewada** and **Ms. Neha Parmar.**

Yours truly,

NISHANT JADHAV
(github.com/nisoojadhav)

Abstract

The report reflects the journey of making a Full Stack MERN Application. It incorporates my learnings from errors, opening it for open source, hosting it on the web, and working with dynamic web technologies and libraries. I have gained knowledge of not only programming but about hosting on the web, finding vulnerabilities, SEO, designing paradigms, typography, and working with DB on the cloud.

I would like to thank my 3 FPGs(Friend, Philosopher, Guide):

1) **Mr. Chirag Mewada** (who stated me to learn Javascript and React/Angular right in Sem 4). (https://www.linkedin.com/in/chirag-mewada-csm%C2%AE-90015213/)
2) **Sumit Patil** (who expressed me learning Javascript and Mongo DB when I was in Sem 3(I didn't take it seriously though I needed to learn it at the end of Sem 4))

   (https://www.linkedin.com/in/iamsumitpatil/)

3) **Zaid Shaikh** (Senior Web Developer at Prism IT Systems, who helped me in learning React JS, MERN and keeps me updated about what tech stack shall I learn next).

Contents

Abbreviations

API	Application Programming Interface
BSON	Binary JavaScript Object Notation
CLI	Command Line Interface
HTTP	Hypertext Transfer Protocol
JSON	JavaScript Object Notation
JSX	JavaScript XML
MVC	Model View Controller
MERN	Mongo DB, Express, React JS, Node JS
NPM	Node Package Manager
NoSQL	Not only Structured Query Language
RDBMS	Relational Database Management System
REST	Representational State Transfer
SPA	Single Page Application
URL	Uniform Resource Locator

1 Introduction

Covid 19 pandemic forced us to change the way we work; in various fields. It forced us to stay detached yet connected digitally as a social-animal. Everything that can happen digitally was adapted more rapidly compared to the pre-pandemic era. Fields range from contactless payment to delivery of groceries and medicines. And from the digital admission process to virtual learning. E-learning was never such a good solution to us before the pandemic, but post-pandemic digital space boomed in the world, and a digital revolution in India was responsible for multi-billion dollar unicorns leaping from the e-learning industry. Now it's so common that it's believed the institution doesn't exist if it isn't available in any digital space. Many YouTube Channels, Online Learning BootCamps, and Online interactive virtual learning sites provide online learning, certifications, and Universities that provide distant, online graduation and post-graduation program taking lectures via the internet.

*"**Workshoply** - a one-stop solution for managing workshops"* is an open source project for helping small institutions having hurdles in their way to providing intuitive learning for their students in the comfort of their homes.

Project Details

- This web application delivers users an intuitive way by which they can get the course details, register, and attend the workshop from the comfort of their homes.
- This web application will be a boon for the people who want to host new workshops and want other people to gain from their teachings.
- Teachers can request password details. Idle users can just register the colleague will get back to them.
- After successful registration, before seats get full, the learners will get an email for Zoom meetings or the physical location of the workshop.

Purpose

- Provides new skills to learn from the home.
- Access current running workshops.
- Reduce the cost of the offline and tedious process of hosting such workshops.
- Facility for admin to manage to Create, Read, Update, and Delete permissions for the workshops.
- Other users will have Read and Register permissions.

Project Scope

- Perfect for Institutions to serve 1000s of students.
- Register details in Google Spreadsheet, accessible through the Workshoply app.
- Teachers can focus more on teaching instead of worrying about data handling, security, hosting, and thousands of concurrent users.
- Async requests through REST API, Mongo DB Atlas.

Limitations

- Not included Login, Sign up for students.
- Teachers can request a Password from the Admin, which is made with such logic that it changes every hour to protect against gaining access to Admin Page by the unauthentic person even if he receives a password.
- Not included Virtual Meeting Feature(like Zoom).

2 System Requirements

1. Hardware Requirements

- If you want to deploy the app in the local environment:
- PC/ Laptop.
- Minimum 4 GB RAM.
- Processor 1.4 GHz 32/64-bit.
- Internet connection.

2. Software Requirements

- Windows 8.1(minimum)
- Latest Node JS, NPM, and Git installed.
- Internet connection.
- Browser(required) with React Developer Tools(optional) installed.

Building Local Version

Prerequisites:

- Installed Node JS, npm/yarn, React JS, Git Bash(or another terminal), text editor(VSCode preferred).

Download:

- Node JS: https://nodejs.org/en/download/
- npm: https://www.npmjs.com/package/npm
- Yarn: https://www.npmjs.com/package/yarn
- React: https://www.npmjs.com/package/react
- Git Bash: https://git-scm.com/downloads
- VSCode: https://code.visualstudio.com/

2. Open Git Bash, get into your preferred directory.

e.g.

```
$ cd d:/projects
```

3. Clone Workshoply git repository.

```
$ git clone https://github.com/nisoojadhav/workshop.git
```

4. Get into Workshop folder

```
$ cd workshop
```

5. Install packages:

```
$ npm i
$ cd client
$ npm i
```

6. Start server(resides on root folder):

```
$ node server
```

7. Start project

```
$ cd client && npm start
```

8. You are good to go! Visit localhost:3000.

---

3 System Analysis

Requirement Analysis

- MERN Stack:

1) Mongo DB:
A free, open-source, cross-platform, document-oriented cloud database, i.e designed with both scalability and developer agility in mind. Instead of storing data in rows and columns, it stores JSON documents in collections with dynamic schemas. It makes it easier to store and combine data of any structure, without complex validation rules, and schemas, with flexible data access, and rich indexing functionality.

2) Express JS:
Web application framework that runs backend applications. Express runs as a module in Node JS, it can handle the routing of requests to the right parts of the application:

We use Express to perform two functions:

A) Send front-end to the remote browser when a user browses our app.
B) Provide REST API that the front-end can access using HTTP network calls, to access the database.

3) React JS: JavaScript library developed by Facebook to build interactive UI. React breaks the front end into components. Each component can hold its state and the parent can pass its state down to its child components and those components can pass changes back to the parent through the use of callback functions.

4) Node JS: JavaScript runtime environment that runs our back-end application(via Express). Node JS is made upon Google's V8 JS engine, used in the Chrome browser. Third-party modules are installed using npm(Node Package Manager). Node JS is an asynchronous, event-driven engine where the application makes a request and then continues working on other useful tasks rather than stalling until a response. The application receives results via a callback, ensuring a lot of operations are performed in parallel when scaling applications.