# NEXT GEN EMPLOYABILITY PROGRAM

## CREATING A FUTURE-READY WORKFORCE

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# CAPSTONE PROJECT SHOWCASE

**digital payment wallet (paytm clone)with mern technology**

Abstract | Problem Statement | Project Overview | Proposed Solution | Technology Used | Modelling & Results | Conclusion | Q&A

## Abstract

1. MongoDB is an ideal choice for handling user data, transaction history, and wallet balances due to its flexible NoSQL architecture.
2. Express.js is a minimal and flexible web application framework for Node.js that provides a robust set of features for building web and mobile applications.
3. React.js is a powerful JavaScript library developed by Facebook, designed specifically for building dynamic and responsive user interfaces.
4. Node.js is a powerful and versatile JavaScript runtime environment that allows developers to execute JavaScript code on the server side.

## Problem Statement

Creating a digital payment wallet like Paytm using the MERN stack (MongoDB, Express.js, React, and Node.js) involves several steps, each addressing different challenges related to both technology and user experience. Firstly, the back-end needs to be robust and secure, as it will handle sensitive data such as user credentials and transaction details. MongoDB is used for storing this data in a flexible, scalable manner. Node.js, along with Express.js, will facilitate server-side operations, including API development for user authentication, wallet balance management, and transaction processing.

With the rise of digital payments, people are increasingly relying on mobile wallets and online platforms for everyday transactions. Paytm, one of the leading digital payment platforms, has revolutionized how individuals and businesses handle financial transactions, offering services such as mobile recharges, bill payments, peer-to-peer money transfers, and wallet management.

## Project Overview

The Digital Payment Wallet (Paytm Clone) is a web application built using the MERN stack (MongoDB, Express.js, React.js, Node.js). It allows users to perform digital financial transactions like transferring money, adding funds to their wallet, paying bills, and viewing transaction history. The project aims to replicate the functionality of a basic digital wallet similar to Paytm, while focusing on essential features such as security, user authentication, and ease of use.

## Proposed Solution

The solution involves creating a full-stack application where the frontend and backend are connected seamlessly to manage users' financial activities. The application will be divided into the following main components:
Frontend: Built using React.js to create an interactive user interface (UI), displaying the wallet balance, transaction history, and transaction forms.

Backend: Powered by Node.js and Express.js to handle API requests for authentication, wallet balance updates, transaction processing, etc.

Database: MongoDB will be used to store user data, wallet balances, transaction details, and any other necessary information.

## Technology used

1. MongoDB: A NoSQL database that stores data in JSON-like documents, perfect for handling user details, wallet balances, and transactions in a flexible, scalable manner.

2. Express.js: A lightweight backend framework for Node.js, used to handle HTTP requests and set up routes for the application, such as user registration, wallet management, and transactions.

3. React.js: A frontend library for building dynamic user interfaces. It makes the app interactive and responsive, allowing users to perform wallet operations like transfers and bill payments.

## Modelling & Result

Module 1: User Authentication and Authorization

Entities:

User: Stores details like name, email/phone number, password, and wallet balance.

Authentication Token (JWT): Generated when the user logs in successfully, used for securing API routes.

Flow:

1. Signup: User provides name, email/phone, and password. The password is hashed and stored in MongoDB.

## Modelling & Result

2. Login: User enters credentials. If valid, a JWT token is issued, providing authenticated access to secured routes.

Result:

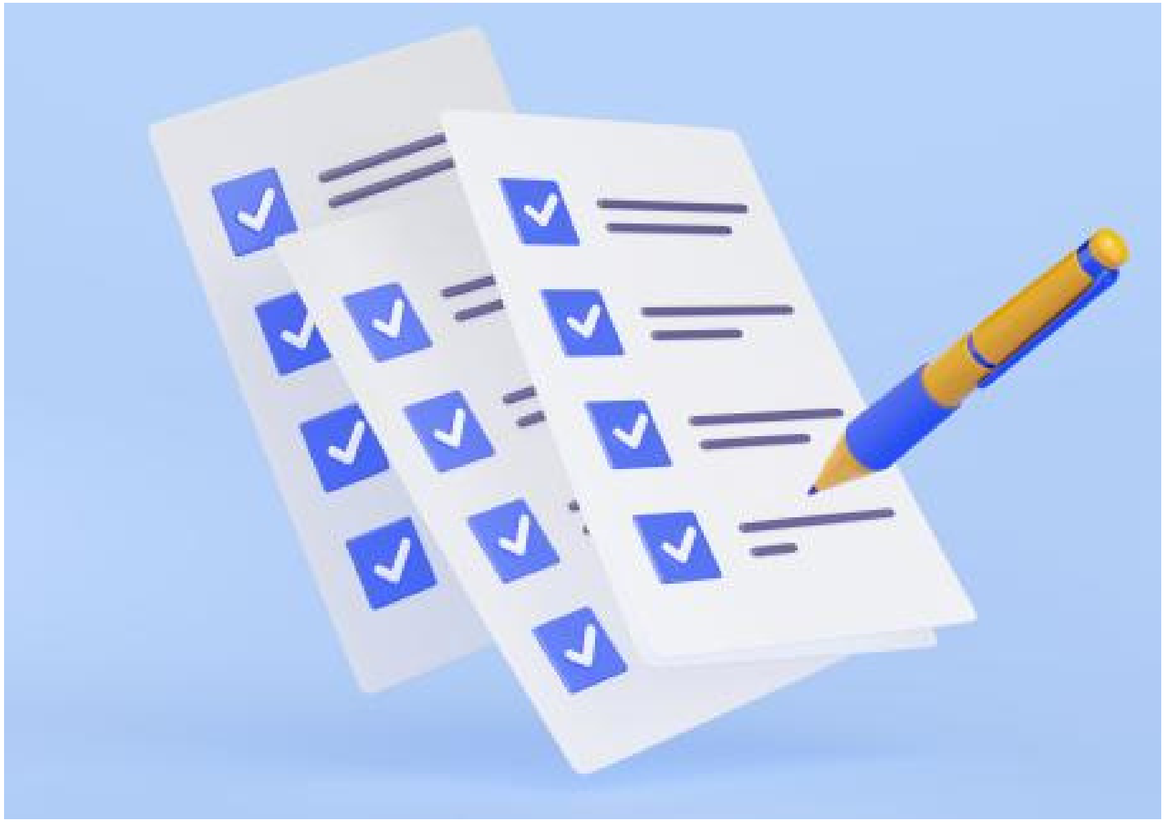
Users can register an account with valid credentials (email/phone number, password).

Users can log in and receive a JWT token.

JWT token is stored and used for authentication in subsequent API requests (token-based authentication).

## Conclusion

- This Digital Payment Wallet (Paytm Clone) built using the MERN stack is a secure, scalable, and user-friendly solution for basic digital financial transactions. By leveraging MongoDB, Express.js, React.js, and Node.js, the application will provide a smooth experience for users to manage their wallets, perform transactions, and track their payment history. The project will demonstrate essential full-stack development skills, including handling authentication, secure data management, and building responsive user interfaces.

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