

MERN

স্ট্রং ফাউন্ডেশন

কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

কমপ্লিট ফ্রন্ট-ইন্ড ডেভেলপমেন্ট

কন্টিনিউ স্ট্যাডি

মার্ন এডভান্স স্ট্রাকচার



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স্টেং ফাউন্ডেশন

ধাপ ০১ -০৮

কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ০৯ -১৬

কমপ্লিট ফ্রন্ট-ইন্ড ডেভেলপমেন্ট

ধাপ ১৭ -২১

কন্টিনিউ স্ট্যাডি

ধাপ ২২ -৩৪

মার্ন এডভান্স স্ট্রাকচার

ধাপ ৩৫

স্ট্রং ফাউন্ডেশন

ধাপ ০১ শুরুটা হবে HTML দিয়ে

- VS Code Setup for HTML
- Structural Tags, Text Formatting, List, Link, Image and Multimedia , Table, Form
- Semantic Tags, Scripting, Interactive Element , Special Purpose Tags



- Advance web page structure
- Meta, SEO Meta, HTTP-Equiv Meta, Open Graph , Twitter Card
- Mobile Device Meta, Security Meta
- Cache Control Meta Tags, Manifest Configurations
- Meta tags for progressive web application (PWA)



স্ট্রং ফাউনেশন

ধাপ ০১ ভালো করে শিখবো Git Github

- Install Git, Initialize a repository, Stage changes, Commit changes, Check status
- Show changes in working directory, Show changes in staging area
- View commit history, List branches, Create a branch, Switch branches
- Merge branches, Fetch and merge from remote, Unstage changes
- Reset to last commit, Discard changes in file



- Create GitHub account, Clone repository locally, Set remote repository
- Push changes to GitHub, Fetch and merge changes from remote
- Create pull request, Create new branch, Delete remote branch
- Fork repository, Fetch changes without merging
- Clone with latest commits only, View file modification history



স্ট্রং ফাউনেশন

ধাপ ০৩ শিখে নিই CSS



- CSS Introduction, How to add CSS, Basic Syntax, Selector
- Background properties, Border Properties, Border Radius
- Display Property, Cursor Property, Float Property



- CSS Fonts, Important, Line Height, Margin, Padding, Filter
- Overflow, Position, Word Wrap, Justify content, Text Decoration
- Word and Letter Spacing, Variable

স্ট্রং ফাউন্ডেশন

ধাপ ০৮ CSS ফ্রেমওয়ার্ক কৌশল



- Installation, Light- Dark Mode, Layout, Responsive Layout
- Gutters, Typography, Images, Table, Form Control



- Alert, Button, Card, Dropdown Button, List Group and Spinner
- Progress Bar, Placeholders, Modal, Navbar
- Opacity and Shadow, Margin & Padding, Colors

স্ট্রং ফাউন্ডেশন

ধাপ ০৫ রেস্পন্সিভ ওয়েব ডিজাইন ও প্রোজেক্ট

- Introduction to responsive design, Grid system and utilities, Responsive images
- Responsive forms, Custom breakpoints, Typography optimization
- Responsive tables, Advanced media queries, Testing and debugging



- Design a responsive portfolio website using bootstrap
- Home About Me, Portfolio, Services, Contact



স্ট্রং ফাউনেশন

ধাপ ০৬ চলুন শিখি জাভাস্ক্রিপ্ট

- VS Code JavaScript tips, Execution context, JavaScript variables, operators, comments



- Data types, if-else statements, switch case statements, for loops
- While loops, do-while loops, for-in loops

- JavaScript function, Real-life use cases, Passing arguments, Returning values



- Named functions, Anonymous functions, Arrow functions, Immediately Invoked
- Function Expressions (IIFE), Generator functions, Recursive functions

স্ট্রং ফাউনেশন

ধাপ ০১ জাভাস্ক্রিপ্ট এর গুরুত্বপূর্ণ বিষয় ওলা

- JavaScript Object & JSON, Arrays and Array Methods
- Strings and String Operations
- JavaScript Date, Math, Number, Window object, Navigator object



- JavaScript events, JavaScript DOM in detail, DOM HTML elements
- DOM manipulation, Form handling, DOM element creation
- Appending elements, Query selector



স্ট্রং ফাউন্ডেশন

ধাপ ০৮ জাভাস্ক্রিপ্ট এজাক্য এবং এসিনক্রোনাস প্রোগ্রামিং

- Understanding Ajax architecture, Ajax methods (GET, POST, PUT, DELETE)
 - File upload with Ajax, Advanced configuration and settings for Ajax
 - Caching and re-validation with Ajax
-
- Task Manager Project using Ajax Architecture
 - Implement Ajax to fetch and render task list
 - Use Ajax POST to create new tasks
 - Utilize Ajax PUT and DELETE for updating and deleting tasks respectively



কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ০৯ নোড জেএম শুরু , মডার্ন জাভাস্ক্রিপ্ট এবং অবজেক্ট অরিয়েন্টেড প্রোগ্রামিং



- General concept of Node.js, Running JavaScript in Node.js, ES6 basic syntax
- The strict mode, Spread operator, Rest parameter, Dynamic function, ES6 variables
- Variable scope, hoisting, Loops, Objects, Decision-making, ES6 functions
- ES6 array de-structuring, ES6 Map, ES6 Set



- Object-Oriented Programming (OOP) in detail, Object literal, Instance of Object
- Object constructor, Classes, Re-declaring class, Constructor, Constructor parameters
- Changing class properties value using constructor, Static keyword, Importance of static
- Inheritance, Inheritance constructor, Overriding, Overloading, Polymorphism, Abstraction

কম্পিউট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ১০ নোড জেএস সার্ভার-সাইট প্রোগ্রামিং

- Tools and Terminal, Node.js modules, Request-response model
- Understanding HTTP client, Understanding package.json file, URL module

- Getting started with the FS (File System) module
- Understanding synchronous and asynchronous
- Operations, Exploring FS module's methods, Reading files
- Writing files, Deleting files, Renaming files
- Checking file existence, Creating a simple back-end and deploying it to a real server

কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ১১ এক্সপ্রেস জেএস মার্ভার-মাইট পোগ্রামিং

- Your First Express Application, Express.js routing
 - Understanding responses, Simple string response, Response status code
 - JSON response, Response download, Response redirect, Response header
 - Response Set Cookies, Clear Cookies
-
- Working With Request, Simple Get Request
 - Get Request With URL Query, Working With Get Request Header, Simple Post Request
 - Post Request With URL Query, Post Request With Header Properties, Post application-json
 - Working With Multipart Form Data, File Upload
 - Application Middleware, Route Middleware



কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ১২ ওয়েব সার্ভার-সাইট ডেভেলপমেন্ট আর্কিটেকচার এবং প্যাকেজেস

- Server-side vs. Client-side, Request-response model, Routing and controller concept, Middleware concept
- Introduction to JSON, Understanding JSON structure, Best practices of JSON, Understanding HTTP client
- HTTP request segments, Comparison between GET and POST, When to use GET and when to use POST
- Request rate limiting, Response segments, Response status code, URI naming best practices
- HTTP cookies in detail , Uses of HTTP cookies, Response best practices, Request best practices, Controller best practices
- Middleware best practices, Encryption-decryption process, JSON Web Token (JWT) concept
- JWT structure, Simulating JWT encryption-decryption
- CSR (Client-side rendering) vs. SSR (Server-side rendering) concepts
- Benefits and drawbacks of SSR, Benefits and drawbacks of CSR, Optimized solutions for CSR and SSR
- Express REST API packages, Project structure and working process, Creating an Express REST API project structure
- Creating the first Express API, Handling undefined routes, Implementing security middleware
- Implementing environment variables.

কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ১৩ মঙ্গোডবি বিগিনার টু এডভাঞ্চ এগ্রেশন কুয়েরি রাইটিং

- Meet MongoDB, Terminology and Data Model, Data Types and Understanding Sample Documents
- MongoDB Atlas, MongoDB Compass, MongoDB VS Code Extension, MongoDB Community Server
- Database-related methods Insert One query, Insert Many query, Find query, Projection concept
- Comparison query operators, Logical query operators, Element query operators
- Evaluation query operators, Sort, Limit, Distinct, Row count, Delete One and Many



- MongoDB Aggregation, Studio 3T, Aggregation Sorting, Limiting, First and Last, Match Condition, Like, Projection
- Skip and Limit, Group By, Group By SUM, Group By Avg, Max Min, Without Group By Sum Avg Max Min
- Group By Multiple, Join By Lookup Operator, Facet Operator, Projection After Join, Add New Field With Result
- Arithmetic Aggregation Operators, String Aggregation Operators
- Date Aggregation Operators, Comparison Aggregation Operators
- Boolean Aggregation Operators, Conditional Aggregation Operators



কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ১৪ রিয়েল লাইফ কমপ্লিট ব্যাক-ইন্ড প্রোজেক্ট

- Mongoose Introduction, Installation, Database Connection, Creating Model
- CRUD Operations using Model, Schema-types, Default Value and Version Key
- Validation, Documentation using Postman, JWT Token Authentication.



- Multiuser Task Manager REST API Project, Postman Documentation & Testing
- User Registration, Login, Login Token Generation-Verification, Email Verification, OTP Verification
- Reset user password , Select & Update User Profile
- Creating new task , Selecting, Updating, Removing Tasks
- Filtering Task List, Filtering by Date, Documentation, Deployment to VPS Server.



কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ১৫ রিয়েল লাইফ ই-কমার্স কমপ্লিট ব্যাক-ইন্ড প্রজেক্টে মর্ব ০১

- Project Features, Database Design, Creating Project Structure
 - Model Creation for Brand, Category, Product, Product Details, Slider, User, Profile, Wish, Cart, Review
 - Model Creation for Invoice, Invoice Product, Payment, Additional Features
 - Demo Data for Practice
-
- Create Necessary Controller and Service Files, Define Functions and Definitions for APIs
 - Implement APIs for Brand List, Category List, Slider List, Products by Category
 - APIs for Products by Brand , Products by Remark

কমপ্লিট ব্যাক-ইন্ড ডেভেলপমেন্ট

ধাপ ১৬ রিয়েল লাইফ ই-কমার্স কমপ্লিট ব্যাক-ইন্ড প্রজেক্টে মর্ব ০২

- APIs for Similar Product, Product Details, Product List by Keyword, Review List
- Creating Email Utility, JWT Token Encoding and Decoding, Creating User Authentication, Middleware
- APIs for User OTP , Verifying Login and Working with Cookies, User Logout
- APIs for Creating, Updating, and Reading Profile, Wish List Creation, Updating, Removal and select
- APIs for Cart List create, update, read, delete, total
- APIs for Invoice Creation, Payment Method Integration with SSLCommerz
- APIs for Handling Payment Success, Failure, and Cancellation
- Implementing Payment IPN (Instant Payment Notification)
- APIs for Listing Invoices and Associated Products, Creating and Listing Features
- APIs for Creating and Listing Reviews

কমপ্লিট ফ্রন্ট-ইন্ড ডেভেলপমেন্ট

ধাপ ১৭ রিয়াক্ট জেএস দিয়ে শুরু

- Create New React App Using Vite, Project Run And Build Command, Dive Inside React Project Structure
- Organizing File Folders, Best VS Code Extensions And Settings For React Development
- Primary Understanding On Component, JSX And Conventions, JSX Short Hand If else
- JSX Immediately invoked function, JSX Loop Inside, JSX Why use Map Why Others loop not
- JSX Conditional Rendering Using If Else, Using Switch Statement, Using Ternary Operator
- Using Logical && , Using Immediately Invoked Function, Passing properties to child component,
- Managing Click Event ,Managing Form Submit

কমপ্লিট ফ্রন্ট-ইন্ড ডেভেলপমেন্ট

ধাপ ১৮ রিয়াক্ট জেএম এর ওরুত্তপূর্ণ বিষয় গুলো

- Meet With Hook, useRef InnerText, InnerHTML , Attribute, Input Element, CSS Class
- Persisted Mutable Property,Caching Expensive Computation
- useState Understanding Inside, Working With Immutable Object, Immutable Array
- Spread Operator And Immutability Principle, Managing Form Like Pro



- useEffect understanding arguments and uses,
- Calling API using promises, Calling API using async await,
- Applying React Router Dom, Link And NavLink For Router, Browser Router VS HashRouter
- Passing Parameter Via Navigation



কমপ্লিট ফ্রন্ট-ইন্ড ডেভেলপমেন্ট

ধাপ ১৯ রিয়াক্ট জেএম ব্লগ প্রজেক্ট ইউজিং রেস্ট এপিআই



- Project Strategy, Project Settings, Exploring Rest API, Project File Folders
- Completing Dynamic Navbar



- Completing Home Page Latest Blog, Set Up API Calling Loader
- Completing By Category Blog List, Post Details
- Deploy In Linux Cpanel Server

কমপ্লিট ফ্রন্ট-ইন্ড ডেভেলপমেন্ট

ধাপ ২০ রিয়াল্টি জেএস ই-কমার্স কমপ্লিট ফ্রন্ট-ইন্ড প্রোজেক্টে পর্ব ০১

- Creating Front End Project And Packages, Initial File Folders And Layout
- Components, Loading Skeletons
- Create Store And API Call
- Working With Brands Categories Features Component



- Working With Slider Component, Products Component
- Listing By Brand , By Category , By Search, Filter By Category, Brand
- Max-Min Price,Working With Product Details Components, Product Review List



কমপ্লিট ফ্রন্ট-ইন্ড ডেভেলপমেন্ট

ধাপ ২১ রিয়াল্টি জেএস ই-কমার্স কমপ্লিট ফ্রন্ট-ইন্ড প্রোজেক্টে পর্ব ০২

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- Legal Details , terms privacy how to buy
 - Working With Login, Logout, Manage User Profile
 - Manage User Cart List ,Manage User Wish List

- 
- Wish List Show Remove, Cart List Show Remove
 - Checkout, Show Order List, Working With Invoice Product List
 - Create Review, Project Deploy

কন্টিনিউ স্ট্যাডি

ধাপ ১১ এডভান্স ফ্রন্ট-ইন্ড উইথ নেক্স জেএস পার্ট ০১

- Why Next JS, Create New App & Explore Build Optimization Process
- Playing With Project Structure, Page Concept And Functional Component
- Working With Static Asset, Global & Module CSS
- Exploring Server Side Rendering, Client Side Rendering, Where use SSR Where CSR in details
- Why we are writing use client, Exploring Directory Concept



- Nested Directory Concept, Basic Link Component
- Progress Bar In Routing, Managing Active Link
- Link Component Query, Link Component Query With useSearchParams,
- Link Component Prefetch and Replace Properties,
- Programmatically Routing Properties



কন্টিনিউ স্ট্যাডি

ধাপ ১৩ এডভাগ ফ্রন্ট-ইন্ড উইথ নেক্সেট জেএস পার্ট ০১

- Thinking In Next JS , What About Server Component
- Thinking In Next JS, What About Client Component
- Root Layout In Details, Neasted Directory Layout In Details



- Directory File Naming Convention,Server And Client Component
- Data Caching And Re-validating ,Error Handling, Multipule Data Fetching
- Data Fetching Body Header Status, Image Optimization
- Font Optimization,Script And Static Assets, Dynamic Loading



কন্টিনিউ স্ট্যাডি

ধাপ ১৪ নেটওর্ক এসইও ফ্রেমলি ডাইনামিক ওয়েব সাইট প্রজেক্ট

- Project structure, Master Layout, Pages, Components
 - Dynamic SEO Strategy, Data Fetching & Rendering Strategy
 - Working with Common Components Navbar, Footer, Layout, Loading, Error
-
- Home page development, Hero, Stats, How to work, Featured Project, Brands & Contact Section
 - Team page with team section, Brands & Contact Section
 - Project page with project details list , Brands & Contact Section
 - Testimonial page with testimonial details list , Brands & Contact Section

কন্টিনিউ স্ট্যাডি

ধাপ ১৫ শিখে ফেলুন রিয়াক্ট-রিডাক্স



- What is redux, Principles of Redux, Pillars of Redux, What is React-Redux
- Create New Project, Auto Generated Project Structure



- Do some practice project
- Counter App, Todo App with React-Redux

কন্টিনিউ স্ট্যাডি

ধাপ ১৬ নেড জেএম প্যাকেজ ডেভেলপমেন্ট



- Getting started with js package,NPM Account Overview
- NPM login logout using terminal,Scope package , Unscope package



- Create My First js package and publish,NPM Update package
- NPM unpublish package, NPM Package Read Me File

কন্টিনিউ স্ট্যাডি

ধাপ ১৭ ফুল-স্ট্যাক বিজনেস টেবিল প্রজেক্ট



- Business table, preparing pagination api, Preparing API Request
- Completing pagination, per page
- Completing Search, finalizing our business table

কন্টিনিউ স্ট্যাডি

ধাপ ১৮ ফুল-স্ট্যাক টাস্ক ম্যানেজার প্রজেক্ট পার্ট ০১

- Task manager project overview, data model, back end project structure, data model, user registration
 - User login, Auth middleware , update profile, create delete update task, list task by status, summary
 - Host api at heroku with mongodb atlas.
-
- Project benefit overview, create new react project with packages
 - Create file folders, create redux state slice files
 - Routing Setup, Master layout side navbar, full screen loader
 - Lazy loader, import necessary component file inside page, create views

কন্টিনিউ স্ট্যাডি

ধাপ ১৯ ফুল-স্ট্যাক টাস্ক ম্যানেজার প্রজেক্ট পার্ট ০২

- Complete registration with validation and API calls, Debugging for smooth registration
 - Redux setup for full-screen loader during API calls, Redirect to login after registration
 - JWT token setup on user login, Conditional routing based on token, Task creation feature
 - Managing task list state with Redux, Backend API interaction for task list
 - Dashboard summary display, Item deletion functionality
-
- Update status, logout, set default image on registration, set default image name on navbar
 - Add one more API to get profile all details, get user profile data, update profile, recover account send OTP
 - Recover account verify OTP, create new password, verify email API creation, email configuration
 - Verify email API, verify OTP, reset password API, verify email front-end
 - Verify OTP frontend, create new password
 - Host frontend at Netlify, and solve 404 error after refresh issue

কন্টিনিউ স্ট্যাডি

ধাপ ৩০ ফুল-স্ট্যাক ইনভেন্টরি প্রজেক্ট পার্ট ০১

- Project Overview & Scope in Details
 - Model creation - users, brand , category, product , suppliers , customers ,expense, purchase ,sales, return
 - Business report management,Back-end project structure , Coding strategy
 - Creating token and email utility, user query services, User query transaction rollback
 - User controllers models & routes, user module Postman test, brands module services
-
- Brands controller, model, and API setup, Postman testing for brands module
 - Categories, suppliers, and customers module setup, Postman testing for these modules
 - Expense type module setup with Postman testing. Expense module creation and update
 - listing using list-one-join-service, and Postman testing
 - Product module creation, update, listing, and Postman testing

কন্টিনিউ স্টোডি

ধাপ ৩১ ফুল-স্ট্যাক ইনভেন্টরি প্রজেক্টে মার্টে ০১



- Purchase models, creation with parent-child service, Postman testing, transaction implementation, and listing
- Sales return mirroring purchase process, delete functionality for purchase and sales return
- Fix purchase creation bugs, Postman tests for deleting purchases and sales returns
- Expense deletion, expense report generation



- Sales return and purchase report creation, dashboard summary development, details-by-ID API creation
- Front-end development strategy, front-end packages selection, front-end file folder structure setup
- Resource utilization from previous projects and business tables
- Customer creation, update, form reset, and deletion
- Expense creation, update, and deletion, Product CRUD operations
- Report handling, sales and return creation, purchase creation

কন্টিনিউ স্ট্যাডি

ধাপ ৩২ ফুল-স্ট্যাক ইনভেন্টরি প্রজেক্ট পার্ট ০১

- Purchase models, creation with parent-child service, Postman testing, transaction implementation, and listing
 - Sales return mirroring purchase process, delete functionality for purchase and sales return
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কন্টিনিউ স্ট্যাডি

ধাৰ্ম ৩০ প্ৰাক্তিস প্ৰজেক্ট ফৱ এডভাঞ্চ স্ট্যাডি

- QR Code/Bar Code Generator
- Media Player
- Camera App
- Make Your own Code Editor
- Bar Code Scanner
- Make Your own screen recorder
- Image to PDF Generator
- Invoice Generator
- Excel File Reader
- SWR Data Fetching
- Recharts

কন্টিনিউ স্ট্যাডি

ধাৰ্ম ৩৪ প্ৰাক্তিস প্ৰজেক্ট ফৱ এডভাঞ্চ স্ট্যাডি

- Build Your Own File Uploader **BackEnd**
- URL Shortener **BackEnd**
- Web traffic analyzer **BackEnd**
- Note & Share **BackEnd**
- Email Reminder **Back End**
- Image file converter **Back End**
- Make your own GitHub Repo **Downloader**

```
mern-x/
|   └── app/
|       ├── config/
|       |   ├── cli.js
|       |   └── config.js
|       ├── controllers
|       |   └── todoController.js
|       ├── middlewares
|       |   └── authMiddleware.js
|       ├── models
|       |   └── todosModel.js
|       └── storage/
|           └── utility/
|               ├── emailUtility.js
|               ├── tokenUtility.js
|               └── validationUtility.js
|
|           └── dist/
|
└── public/
    ├── routes/
    |   ├── api.js
    |   └── web.jsx
    ├── views/
    |   ├── assets/
    |   |   ├── css/
    |   |   |   └── style.js
    |   ├── components/
    |   |   ├── CreateForm.jsx
    |   |   └── List.jsx
    |   └── layout/
    |       └── AppLayout.jsx
    └── loader/
        └── ListLoader.jsx
    └── pages/
        ├── CreatePage.jsx
        └── ListPage.jsx
    └── main.jsx
```

মান্য এডভাগ স্ট্রাকচার ধাপ ৩৫

MERN-X is a comprehensive full-stack framework designed to streamline the development of web applications using the popular MERN stack: MongoDB, Express.js, React, and Node.js. Built with simplicity and scalability in mind, MERN-X empowers developers to create robust and efficient applications from end to end.