

Kigali 13/10/2023
Ministry of Education
Rwanda TVET Board
World Mission High School
Sector: ICT
Trade: Software Development
Level:4

Develop Backend application with NODE JS HOMEWORK

Question 1: Basic Concepts Explain what RESTful API means and how it is different from other types of APIs. Describe the core principles and constraints of REST architecture.

Question 2: Setting Up Node.js Server How do you create a basic RESTful API server using Node.js? Provide a step-by-step explanation or code snippet that demonstrates how to set up a simple server and define a route that responds to HTTP GET requests.

Question 3: Routing and Middleware Explain the concept of routing in Express.js (a popular Node.js framework). How do you define multiple routes for handling different HTTP methods (GET, POST, PUT, DELETE)? Additionally, describe the role of middleware in the context of Express.js and RESTful APIs.

Question 4: Handling Data and Database Integration Discuss different approaches for handling data in a RESTful API. How can you perform CRUD operations (Create, Read, Update, Delete) using a database (e.g., MongoDB) in a Node.js application? Provide an example of how to create an endpoint that retrieves data from a database.

Question 5: Authentication and Security Explain the importance of authentication and security in RESTful APIs. What are some common techniques for securing API endpoints and ensuring data privacy? Discuss the use of JSON Web Tokens (JWT) for authentication in Node.js applications and how they can be implemented in the context of a RESTful API.

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