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1. Define ERP Modules?

* Inventory Management   Verified.

* Sales & CRM

* Finance & Accounting   Logical Thinking

* user management   Required.

2. Define Architecture planning

* Frontend (user Interface)

* Backend (Business Logic): Handling
data process.

* Database : stores all the enterprise
data

3. Technology Stack Selection

* Frontend ⟶ React.js, Angular, or Vue
Vue.js

* Backend: → Node.js + Express, Django, Asp. n

Database:

* Relational: postgre SQL / MySQL / MSSQL

* Tools:
→ Git for Version control
→ Docker for containerization
→ Authentication: JWT, OAuth 2

4. Database Schema Design

→ Create Entities and relationship between tables

* users, Roles, permission

* products, Stocks, Inventory Transaction

* Suppliers, purchar orders.

5. Frontend Development

→ Build Responsive UI for each module
→ Integrate dashboards, form, tables and charts

* Use Read Table, Chart.js, Ant Design or Tailwind UI.

6. Back end Development

→ Set up REST or GraphQL APIs

→ Implement role - based access control

→ Ensure data validation, Business Rules

7. Integration

→ Email notification, barcode Scanner, payment gateway.

→ optional: Connect with existing Softwa

via API

8. Testing

→ Unit Tests

→ Integration test

→ Role/permission testing

→ user acceptance testing

10. Monitoring & Maintenance.

* use logging and analytics tool: Sent Log Rocket, Google Analytics

* offer admin panel for System monitoring

* Schedule regular Backups and data integrity checks.

11. Modular Architecture

Design each ERP module as independent components or microservices

12. Role-Based Access Control (RBAC)

* HR Manager: Can access only employee and payroll modules

13. Audit logging

Track user action like edits, deletions, or sensitive acesses. This helps in compliance and troubleshooting store in an `audit - logs` table with fields like

* user - id, action, table - name, record - id.

14. Responsive & Mobile - Ready Design

→ Ensure the ERP can be used on tablets and Mobile framework.

15. Customizable Dashboards.

* Sales charts

* Inventory Status

* HR activity.

16. Data import/Export Tools

provide the ability to import data via Excel
This helps during onboarding data analysis

17. Notification System

Implement a notification engine for important
event like

** Low stock alerts

* Invoice due reminder

18. Backup & Disaster Recovery

Automate regular Backups your database

19. API Documentation

are Tools like Swagger or postman to
document your API endpoints clearly

20. Scalability planning

* use pagination and lazy loading for
large tables.