**Final Project guidelines**

**Project Requirements:**

1. **Responsive Design:**Your web application must be mobile-friendly and fully responsive.
2. **User Roles (Minimum 2):**
   1. Admin
   2. At least 3 User roles (based on your project use-case)
   3. Login pages required for all roles with bcrypt-based password encryption
3. **Pages:**Minimum of 6 to 8 pages (as per your project functionality)
4. **Session Management & Data Consistency:**Ensure proper session handling and consistent data throughout
5. **End-to-End Transactions & Flows**
   1. Your project must demonstrate complete transactional flows based on your domain.
   2. A transactional flow refers to a series of connected actions that a user performs from start to finish.
   3. For example, in an e-commerce application (like Amazon):
      1. A user (customer) should be able to:  
         Login → Browse Products → Add Items to Cart → Checkout → Make Payment. This entire sequence counts as one complete flow.
   4. You are expected to implement a minimum of 3 such complete flows per project, which may vary based on the roles and nature of your application.
   5. Each role (Admin/User/etc.) should be part of at least one meaningful transaction or activity flow.
6. **Frontend Stack:**
7. **HTML, CSS, Bootstrap** (mandatory)
8. Any additional UI libraries allowed
9. **Framework**: React or Angular only
10. **Backend Stack:**
    1. Node.js + Express.js
11. **APIs:**
    1. Use of External APIs is encouraged where relevant
    2. Payment Gateway API is required for e-commerce-type projects
12. **Hosting (Bonus Points):**

Deploy your app on a platform like Heroku, Render, or any server of your choice.

1. **Git & Canvas Submission:**
2. Upload on **both GitHub and Canvas**
3. Ensure **no major timestamp gap** between submissions
4. **CRUD Functionality:**Required if your project includes persistent data
5. **Architecture:**Project must follow REST or MVC architecture
6. **Git Best Practices:**
7. Use **branching**
8. Commit per functionality (not bulk uploads)
9. Include **README.md** and **.gitignore** (especially for node\_modules)
10. Follow proper **code documentation** and **naming conventions**
11. **Database:**
    1. Preferred: **MongoDB**
    2. **SQL** is allowed **only with strong justification**