**🧑‍💼 ADMIN PANEL – Frontend Instructions**

**1. User Management Interface**

**🔹 Add New User**

* Form with:
  + Name
  + Email
  + Role (student or instructor)
  + Password (initial)
* Role-based input filtering.
* On submit: Call backend endpoint or smart contract method to register the user.

**🔹 View All Users**

* Table displaying:
  + Name, Email, Role, Status (Active/Inactive), Wallet Address (if applicable), Edit/Delete buttons.

**🔹 Edit Password**

* Button next to user row → modal popup:
  + New password input
  + Confirm button

**🔹 Delete User**

* Trash icon or delete button
* Confirmation popup before final delete

**🧑‍🏫 CHAIRMAN PANEL – Frontend Instructions**

**2. Course Management**

**🔹 Add/Modify/Delete Course**

* Course form:
  + Course Code, Title, Credit Hours, Semester
  + Buttons: Add, Update, Delete

**🔹 Assign Course to Students**

* Multi-select dropdown to assign a course to multiple registered students.
* Table showing: Student Roll No., Name, Assigned Courses

**🔹 Assign Course to Instructor**

* Dropdown with all instructors
* Enforce: Only one instructor per course
* Auto-disable course once assigned (or show as “Assigned” with instructor name)

**🔹 Define Course Evaluation Criteria**

* For each course:
  + Input:
    - Number of **Quizzes** (e.g., 3)
    - Number of **Assignments** (e.g., 4)
    - Number of **Papers** (2: PM, PF)
* Save config per course, store in backend/smart contract.

**👨‍🎓 STUDENT PANEL – Frontend Instructions**

**3. Code Generation View**

Each student sees:

* List of Enrolled Courses

**For Each Course:**

* Button: Generate Evaluation Codes
  + When clicked: Generate 6-digit hash codes for:
    - Quizzes: Q1-XXXXXX, Q2-XXXXXX...
    - Assignments: A1-XXXXXX, A2-XXXXXX...
    - Papers: PM-XXXXXX, PF-XXXXXX
  + Logic: hash = Hash(roll\_number + random\_seed)
* Display in table:

| **Type** | **Code** | **Status** |
| --- | --- | --- |
| Q1 | Q1-1293AD | Marked/Not Marked |
| A1 | A1-24ED2F | Marked/Not Marked |

* Button: Copy Code for each
* Show code status: pending or marked.

**👨‍🏫 INSTRUCTOR PANEL – Frontend Instructions**

**4. Add Marks Using Evaluation Codes**

* Select Course → List of all registered students in that course

**Enter Marks By Code:**

* Input field: Enter evaluation code (e.g., Q1-12AB3F)
* Fetch corresponding student and assessment type
* Input: Marks (e.g., 8/10)
* Button: Submit to Blockchain
  + Triggers smart contract to store marks

**Track Records**

* Table showing:
  + Code, Student, Type (Quiz/Assignment/Paper), Marks, Tx Hash, Timestamp

**🔐 SECURITY & BLOCKCHAIN INTERACTIONS**

**5. Blockchain/Web3 Integration**

* Use **MetaMask/Web3** login for secure identity
* All write operations (submit grades, assign courses, etc.) → trigger smart contract functions
* Store:
  + Marks
  + Course assignments
  + Grade proofs
  + Hashes of evaluation codes