Dental Management System

User Management Module:

A module where all roles and permissions will be defined against application's users so that no single user would be able to access any feature/functionality/panel/data outside of what user is privileged to do.

- Design User management hierarchy
  - Hierarchy where users with respect to their privileges will be defined and all roles and permissions will depend on this defined hierarchy.
- Roles
  - Creating roles against users.
  - Assigning Roles to users.
  - Adding functionality to remove a user against role or update a user against role.
- Permissions
  - Creating permission against roles.
  - Assigning permissions to those created roles.
  - Adding feature of Deleting permission against a role.
  - Updating permission against role.
- User
  - Functionality of create, read, update and delete for user.
  - Assigning roles and permissions to users in a hierarchical approach according to framework proven standards and domain specific needs.
- Checking Roles & Permissions.
  - Checking functionality on base of roles.
  - Checking functionality on base of permissions.
  - Allowing user for specific task on base of roles & permissions.
- Grid view in User management
  - Detail view with create, read, update, delete functionality for all created roles, permissions.
  - Detail view with create, read, update, delete functionality for all users.

USERS

Admin will create users and assign roles:

- o **Admin will create:**
    - Receptionists
    - Doctors
    - Patients
    - Labs
    - Employees
- o **Receptionist:**
    - Can create, view, update, delete patients.
    - Keep track of patient history.
    - Assign doctors to the patients.
    - Book Patient Appointments.
- o **Doctor:**
    - Will create Patient diagnosis, prescriptions & treatment plans
    - Will be able to update/view the assigned privileges.
    - view his patientst
- o **Patient.**
    - Will be able to use hospital services.
- o **Lab:**
    - Lab Personnel will add lab related operations.
    - Keep track of what's being sent and received from Lab.
- o **Employees:**
    - Miscellaneous.
    - Insurance officers & accountants.

USER GRIDVIEW

i. Detail view where admin will be able to view all created users in table form

ii. Admin will be able to open any selected user from list and perform action like update, disable, enable, and delete.

iii. **Filters**

  a. Search filter will be provided where user will be able to search gridview (users) using following search options

    i. Search and sort by username
    ii. Search and sort by roles
    iii. Search and sort by Created date

Registration & Appointment Module:

The Flow of application starts from the Patient registration. When a new patient visits hospital for the first time, Receptionist is responsible for adding his biodata and all the relevant details to the system. Receptionist will take data in a very comprehensive and detailed manner so the doctor will have the maximum information about the patient. After Registration, receptionist will assign the patient a doctor that best matches with the case. Receptionist will be also able to add new appointments within the same module.

- **Registration:**
    - A new user (Patient) will be registered in the system (1st step)
    - Personal data, medical history, treatment history & chief complaints are included here.
- **Doctor Assignment & Appointment Booking:**
    - After quickly analyzing the patient's data and complaint the receptionist will assign him to a specific doctor.
    - A Receptionist will also create and keep track of patient appointments and schedules.
    - Google Calendar will be integrated with the system so we can send real-time reminders to patients about their appointments.
- **Repeat Patient:**
    - In case of old patients, they will be directly assigned to their doctor. Receptionist will be able to update any data if changed.
- **Data involved in Registration**:
    - Biodata, Medical & Social history.
    - Chief Complaint
    - Document upload option for id card, images & insurance card etc.(images, pdf etc.)
- **GRIDVIEW**
    - Gridview which will show all created patients in a table form with following options
        - MRN
        - Name
        - Phone number
        - Doctor assigned
        - Patient chief complaint
    - **SEARCH OPTION/FILTER OPTION**
        - Project gridview/tabular representation will have following search options
            - MRN
            - Name
            - Phone Number
    - Gridview will give option of update/delete project.

Diagnosis & Treatment Module Module:

After registration, the assigned doctor communicates with the patient. Deeply studies and investigates the patient's problem. He will analyze charts, files etc. In the end, he will conclude his diagnosis and will add the result of the analysis in the system. Doctor will devise the treatment plan for the patient. He will also add prescriptions and assign medical tests to the patient for deeper analysis.

- **Diagnosis:**
  - Doctor will create the diagnosis based on the data and problem of patients.
  - Doctor will see a visual representation of human teeth and will be able to save information about any of the patient's teeth by simply clicking on the relevant tooth section on screen.
- **Treatment Plan:**
  - Doctor will create the treatment plan based on the data and problem and diagnosis report of the patient.
- **Prescriptions:**
  - In the end Doctor may add prescritions into the system.
- **GRIDVIEW:**
  - Tabular form will show doctor all his patients with following options
    - MRN
    - Name
    - Chief Complaint
    - Doctor will also see bidata, medical & social history etc in the form of the tabs
  - **SEARCH OPTION**
    - Filter will be applied on all options that are discussed above.

Payments Module:

After all the inner operations are completed. The receptionist will be able to generate the invoice for the patient in a single click which can be sent to the user via email. Patient will be able to make cash or bank payments. In case of patients having insurance plans recognized by the hospital will be exempted from the on spot payment system. Their summary and invoice will be forwarded to the insuring authority for payment confirmation.

- **Create Invoice:**
  - Receptionist or cashier will create invoice and will ask user to clear the payments.
- **Insurance Comfirmations:**
  - In case of patients with legit insurance plans, his summary will be sent to insurance company for the payment.

Doctor Module:

Apart from the regular flow of the system. Doctors is a very crucial module. Here all the available doctors created by the admin will be able to access the system. They will see all their patients & appointments, attendance and payments.

- **Create diagnosis, plans & prescriptions:**
  - o Doctor will be able to perform all his core functionalities using the system.

Lab Module:

Lab will be integrated with the Hospital's system and Lab personnel will also access a very small portion of application in a very restricted manner. Lab will be able to send and receive data about the incoming and outgoing items from Lab to clinic and vice versa.

- **Create delivery & products:**
  - o Lab will be able to add deliveries of the goods they delivered to hospital and will be able to update status about the pending or delivered items.

Reports Module:

- o **Revenue Report**
  - ▪ Overall
  - ▪ Daily/Weekly
- o **Expense**
  - ▪ Overall
  - ▪ Daily/Weekly
- o Receivable
- o Payable
- o Sales Report
  - ▪ Incoming Transactions
- o **Insurances**
  - ▪ Pending Payments
  - ▪ Approved Payments
  - ▪ Received Payments
- o All reports will be created with date range and different filters respected to Labs, Doctors & Patients.
- o **Grandview will have view/update/search/filter functionality in it.**
- o

Setting Module:

Setting tab where options will be set against system

- Reminder message templates.
- Application Layout etc

Documents with QR code:

o All documents will have pdf format
o All documents will have **QR code** which will give functionality of accessing document after scanning it.
o Documents exact format will be provided and options discussed above.

Email alerts:

o Auto email generation.
o Customized email creation with templates.

SMS masking alerts using API:

Analytical Dashboards:

GOOGLE Calendar:

o Creating events
o Setting reminder