# Healthcare Appointment and Patient Management System

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## Patient Management

### *Create Patient*

**Endpoint:** `POST /api/patients`

**Request Body**

```
{

  "firstName": "John",
  "lastName": "Doe",
  "dateOfBirth": "1990-05-15",
  "gender": "MALE",
  "contactInformation": "+1234567890",
  "insuranceDetails": "HNS-987654321",
  "registrationDate": "2024-03-13"
}
```

**Response Body:**

```
{

  "firstName": "John",
  "lastName": "Doe",
  "dateOfBirth": "1990-05-15",
  "gender": "MALE",
  "contactInformation": "+1234567890",
```

```
  "insuranceDetails": "HNS-987654321",
  "registrationDate": "2024-03-13"
}
```

**Description:** Creates a new patient.

## *Get All Patients*

**Endpoint:** GET /api/patients

**Request Body:** None

**Response Body:**

```
[
  {
    "patientId": 1,
    "firstName": "John",
    "lastName": "Doe",
    "dateOfBirth": "1990-05-15",
    "gender": "MALE"
  }
]
```

**Description:** Retrieves all patients.

## *Get Patient By ID*

**Endpoint:** GET /api/patients/{id}

**Request Body:** None

**Response Body:**

```
{
  "patientId": 1,
  "firstName": "John",
  "lastName": "Doe",
  "dateOfBirth": "1990-05-15",
```

```
    "gender": "MALE"
  }
```

**Description:** Retrieves a patient by their ID.

## *Update Patient*

**Endpoint:** `PUT /api/patients/{id}`

**Request Body:**

```
{

  "firstName": "abhi",
  "lastName": "AS",
  "dateOfBirth": "2000-05-15",
  "gender": "MALE",
  "contactInformation": "+120000090",
  "insuranceDetails": "HNS-987654321",
  "registrationDate": "2024-03-13"
}
```

**Response Body:**

```
{
    "patientId": 1,
    "firstName": "abhi",
    "lastName": "ALEX SAM",
    "dateOfBirth": "2000-05-15",
    "gender": "MALE"
}
```

**Description:** Updates an existing patient.

## *Delete Patient*

**Endpoint:** `DELETE /api/patients/{id}`

**Request Body:** None

**Response Body:** None

**Description:** Deletes a patient by their ID.

## *Get Medical Records By Patient ID*

**Endpoint:** `GET /api/patients/{id}/medical-records`

**Request Body:** None

**Response Body:**

```
[
  {
    "recordId": long,
    "patientId": long,
    "doctorId": long,
    "recordDate": string,
    "description": string
  },
  ...
]
```

**Description:** Retrieves all medical records for a specific patient.

## *Get Appointments By Patient ID*

**Endpoint:** `GET /api/patients/{id}/appointments`

**Request Body:** None

**Response Body:**

```
[
  {
    "appointmentId": long,
    "patientId": long,
    "doctorId": long,
    "appointmentDate": string,
    "status": "SCHEDULED"
  },
```

```
  ...
  ]
```

**Description:** Retrieves all appointments for a specific patient.

### *Get Prescriptions By Patient ID*

**Endpoint:** `GET /api/patients/{id}/prescriptions`

**Request Body:** None

**Response Body:**

```
[
  {
    "prescriptionId": long,
    "patientId": long,
    "doctorId": long,
    "prescriptionDate": string,
    "medications": [
      {
        "medicationId": long,
        "name": string,
        "dosage": string
      },
      ...
    ]
  },
  ...
]
```

**Description:** Retrieves all prescriptions for a specific patient.

# Staff Management

### *Create Staff*

**Endpoint:** `POST /api/staff`

**Request Body:**

```
{
  "name": string,
  "position": string,
  "departmentId": long
}
```

**Response Body:**

```
{
  "staffId": long,
  "name": string,
  "position": string,
  "departmentId": long
}
```

**Description:** Adds a new medical staff member.

## *Get All Staff*

**Endpoint:** GET /api/staff

**Request Body:** None

**Response Body:**

```
[
  {
    "staffId": long,
    "name": string,
    "position": string,
    "departmentId": long
  },
  ...
]
```

**Description:** Retrieves all medical staff members.

### Get Staff By ID

**Endpoint:** `GET /api/staff/{id}`

**Request Body:** None

**Response Body:**

```
{
  "staffId": long,
  "name": string,
  "position": string,
  "departmentId": long
}
```

**Description:** Retrieves a medical staff member by their ID.

### Update Staff

**Endpoint:** `PUT /api/staff/{id}`

**Request Body:**

```
{
  "name": string,
  "position": string,
  "departmentId": long
}
```

**Response Body:**

```
{
  "staffId": long,
  "name": string,
  "position": string,
  "departmentId": long
}
```

**Description:** Updates an existing medical staff member.

### Delete Staff

**Endpoint:** `DELETE /api/staff/{id}`

**Request Body:** None

**Response Body:** None

**Description:** Deletes a medical staff member by their ID.

### Get Schedule By Staff ID

**Endpoint:** `GET /api/staff/{id}/schedule`

**Request Body:** None

**Response Body:**

```
[
  {
    "scheduleId": long,
    "staffId": long,
    "shiftStart": string,
    "shiftEnd": string
  },
  ...
]
```

**Description:** Retrieves the schedule for a specific medical staff member.

### Get Appointments By Staff ID

**Endpoint:** `GET /api/staff/{id}/appointments`

**Request Body:** None

**Response Body:**

```
[
  {
    "appointmentId": long,
    "patientId": long,
    "staffId": long,
```

```
      "appointmentDate": string,
      "status": "SCHEDULED"
    },
    ...
  ]
```

**Description:** Retrieves all appointments for a specific medical staff member.

### *Get Staff By Department ID*

**Endpoint:** `GET /api/departments/{id}/staff`

**Request Body:** None

**Response Body:**

```
[
  {
    "id": long,
    "name": string,
    "position": string
  },
  ...
]
```

**Description:** Retrieves all staff members in a specific department.

## Appointment System

### *Create Appointment*

**Endpoint:** `POST /api/appointments`

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "appointmentDate": string,
```

```
  "status": "SCHEDULED"
}
```

**Response Body:**

```
{
  "appointmentId": long,
  "patientId": long,
  "doctorId": long,
  "appointmentDate": string,
  "status": "SCHEDULED"
}
```

**Description:** Creates a new appointment.

## *Get All Appointments*

**Endpoint:** GET /api/appointments

**Request Body:** None

**Response Body:**

```
[
  {
    "appointmentId": long,
    "patientId": long,
    "doctorId": long,
    "appointmentDate": string,
    "status": "SCHEDULED"
  },
  ...
]
```

**Description:** Retrieves all appointments.

## *Get Appointment By ID*

**Endpoint:** GET /api/appointments/{id}

**Request Body:** None

**Response Body:**

```
{
  "appointmentId": long,
  "patientId": long,
  "doctorId": long,
  "appointmentDate": string,
  "status": "SCHEDULED"
}
```

**Description:** Retrieves an appointment by its ID.

## *Update Appointment*

**Endpoint:** `PUT /api/appointments/{id}`

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "appointmentDate": string,
  "status": "SCHEDULED"
}
```

**Response Body:**

```
{
  "appointmentId": long,
  "patientId": long,
  "doctorId": long,
  "appointmentDate": string,
  "status": "SCHEDULED"
}
```

**Description:** Updates an existing appointment.

### *Delete Appointment*

**Endpoint:** `DELETE /api/appointments/{id}`

**Request Body:** None

**Response Body:** None

**Description:** Cancels an appointment by its ID.

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# Medical Records

### *Create Medical Record*

**Endpoint:** `POST /api/medical-records`

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "recordDate": string,
  "description": string
}
```

**Response Body:**

```
{
  "recordId": long,
  "patientId": long,
  "doctorId": long,
  "recordDate": string,
```

```
    "description": string
  }
```

**Description:** Creates a new medical record.

## *Get All Medical Records*

**Endpoint:** `GET /api/medical-records`

**Request Body:** None

**Response Body:**

```
[
  {
    "recordId": long,
    "patientId": long,
    "doctorId": long,
    "recordDate": string,
    "description": string
  },
  ...
]
```

**Description:** Retrieves all medical records.

## *Get Medical Record By ID*

**Endpoint:** `GET /api/medical-records/{id}`

**Request Body:** None

**Response Body:**

```
{
  "recordId": long,
  "patientId": long,
  "doctorId": long,
  "recordDate": string,
```

```
    "description": string
  }
```

**Description:** Retrieves a medical record by its ID.

## *Update Medical Record*

**Endpoint:** `PUT /api/medical-records/{id}`

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "recordDate": string,
  "description": string
}
```

**Response Body:**

```
{
  "recordId": long,
  "patientId": long,
  "doctorId": long,
  "recordDate": string,
  "description": string
}
```

**Description:** Updates an existing medical record.

## *Create Medical Record Entry*

**Endpoint:** `POST /api/medical-records/{id}/entries`

**Request Body:**

```
{
  "recordId": long,
  "entryDate": string,
```

```
    "description": string,
    "doctorId": long
  }
```

**Response Body:**

```
{
  "entryId": long,
  "recordId": long,
  "entryDate": string,
  "description": string,
  "doctorId": long
}
```

**Description:** Creates a new entry for a medical record.

## Get Entries By Medical Record ID

**Endpoint:** `GET /api/medical-records/{id}/entries`

**Request Body:** None

**Response Body:**

```
[
  {
    "entryId": long,
    "recordId": long,
    "entryDate": string,
    "description": string,
    "doctorId": long
  },
  ...
]
```

**Description:** Retrieves all entries for a specific medical record.

## Add Attachment To Medical Record

**Endpoint:** `POST /api/medical-records/{id}/attachments`

**Request Body:**

```
{
  "file": "binary"
}
```

**Response Body:**

```
{
  "attachmentId": long,
  "fileName": string,
  "fileType": string,
  "fileSize": long
}
```

**Description:** Adds a new attachment to a specific medical record.

## *Get Attachments By Medical Record ID*

**Endpoint:** `GET /api/medical-records/{id}/attachments`

**Request Body:** None

**Response Body:**

```
[
  {
    "attachmentId": long,
    "fileName": string,
    "fileType": string,
    "fileSize": long
  },
  ...
]
```

**Description:** Retrieves all attachments for a specific medical record.

# Treatment Management

## *Create Treatment*

**Endpoint:** `POST /api/treatments`

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "treatmentDate": string,
  "description": string
}
```

**Response Body:**

```
{
  "treatmentId": long,
  "patientId": long,
  "doctorId": long,
  "treatmentDate": string,
  "description": string
}
```

**Description:** Adds a new treatment.

## *Get All Treatments*

**Endpoint:** `GET /api/treatments`

**Request Body:** None

**Response Body:**

```
[
 {
   "treatmentId": long,
   "patientId": long,
```

```
    "doctorId": long,
    "treatmentDate": string,
    "description": string
  },
  ...
]
```

**Description:** Retrieves all treatments.

## Get Treatment By ID

**Endpoint:** `GET /api/treatments/{id}`

**Request Body:** None

**Response Body:**

```
{
  "treatmentId": long,
  "patientId": long,
  "doctorId": long,
  "treatmentDate": string,
  "description": string
}
```

**Description:** Retrieves a treatment by its ID.

## Update Treatment

**Endpoint:** `PUT /api/treatments/{id}`

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "treatmentDate": string,
  "description": string
}
```

**Response Body:**

```
{
  "treatmentId": long,
  "patientId": long,
  "doctorId": long,
  "treatmentDate": string,
  "description": string
}
```

**Description:** Updates an existing treatment.

## Get Treatment Sessions By Treatment ID

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## Create Treatment Session

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## Get Treatments By Patient ID

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# Prescription System

### *Create Prescription*

**Endpoint:** POST /api/prescriptions

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "prescriptionDate": string,
  "medications": [
    {
      "name": string,
```

```
        "dosage": string
      },
      ...
    ]
  }
```

**Response Body:**

```
  {
    "prescriptionId": long,
    "patientId": long,
    "doctorId": long,
    "prescriptionDate": string,
    "medications": [
      {
        "medicationId": long,
        "name": string,
        "dosage": string
      },
      ...
    ]
  }
```

**Description:** Creates a new prescription.

## *Get All Prescriptions*

**Endpoint:** `GET /api/prescriptions`

**Request Body:** None

**Response Body:**

```
  [
    {
      "prescriptionId": long,
      "patientId": long,
      "doctorId": long,
```

```
      "prescriptionDate": string,
      "medications": [
       {
         "medicationId": long,
         "name": string,
         "dosage": string
       },
       ...
      ]
   },
   ...
  ]
```

**Description:** Retrieves all prescriptions.

## *Get Prescription By ID*

**Endpoint:** GET /api/prescriptions/{id}

**Request Body:** None

**Response Body:**

```
  {
   "prescriptionId": long,
   "patientId": long,
   "doctorId": long,
   "prescriptionDate": string,
   "medications": [
    {
      "medicationId": long,
      "name": string,
      "dosage": string
    },
    ...
   ]
  }
```

**Description:** Retrieves a prescription by its ID.

## *Update Prescription*

**Endpoint:** `PUT /api/prescriptions/{id}`

**Request Body:**

```
{
  "patientId": long,
  "doctorId": long,
  "prescriptionDate": string,
  "medications": [
   {
     "name": string,
     "dosage": string
   },
   ...
  ]
}
```

**Response Body:**

```
{
  "prescriptionId": long,
  "patientId": long,
  "doctorId": long,
  "prescriptionDate": string,
  "medications": [
   {
     "medicationId": long,
     "name": string,
     "dosage": string
   },
   ...
```

```
  ]
}
```

**Description:** Updates an existing prescription.

## *Add Medication To Prescription*

**Endpoint:** `POST /api/prescriptions/{id}/medications`

**Request Body:**

```
{
  "name": string,
  "dosage": string
}
```

**Response Body:**

```
{
  "medicationId": long,
  "name": string,
  "dosage": string
}
```

**Description:** Adds a new medication to a specific prescription.

## *Get Medications By Prescription ID*

**Endpoint:** `GET /api/prescriptions/{id}/medications`

**Request Body:** None

**Response Body:**

```
[
  {
    "medicationId": long,
    "name": string,
    "dosage": string
```

```
    },
    ...
  ]
```

**Description:** Retrieves all medications for a specific prescription.

### *Renew Prescription*

**Endpoint:** `POST /api/prescriptions/{id}/renew`

**Request Body:** None

**Response Body:**

```
{
  "prescriptionId": long,
  "patientId": long,
  "doctorId": long,
  "prescriptionDate": string,
  "medications": [
   {
     "medicationId": long,
     "name": string,
     "dosage": string
   },
   ...
  ]
}
```

**Description:** Renews a prescription by creating a new instance of it.

## Billing and Insurance

### *Create Bill*

**Endpoint:** `POST /api/bills`

**Request Body:**

```
{
  "amount": double,
  "status": "UNPAID"
}
```

**Response Body:**

```
{
  "billId": long,
  "amount": double,
  "status": "UNPAID"
}
```

**Description:** Adds a new bill.

## *Get All Bills*

**Endpoint:** `GET /api/bills`

**Request Body:** None

**Response Body:**

```
[
  {
    "billId": long,
    "amount": double,
    "status": "PAID"
  },
  ...
]
```

**Description:** Retrieves all bills.

## *Get Bill By ID*

**Endpoint:** `GET /api/bills/{id}`

**Request Body:** None

**Response Body:**

```
{
  "billId": long,
  "amount": double,
  "status": "PAID"
}
```

**Description:** Retrieves a bill by its ID.

## *Update Bill*

**Endpoint:** PUT /api/bills/{id}

**Request Body:**

```
{
  "amount": double,
  "status": "PAID"
}
```

**Response Body:**

```
{
  "billId": long,
  "amount": double,
  "status": "PAID"
}
```

**Description:** Updates an existing bill.

## *Get Payments By Bill ID*

**Endpoint:** GET /api/bills/{id}/payments

**Request Body:** None

**Response Body:**

```
[
  {
    "paymentId": long,
    "amount": double,
    "date": string
  },
  ...
]
```

**Description:** Retrieves all payments for a specific bill.

## Make Payment

**Endpoint:** `POST /api/bills/{id}/payments`

**Request Body:**

```
{
  "amount": double,
  "date": string
}
```

**Response Body:**

```
{
  "paymentId": long,
  "amount": double,
  "date": string
}
```

**Description:** Makes a payment for a specific bill.

## *Create Insurance Claim*

**Endpoint:** `POST /api/insurance-claims`

**Request Body:**

```
{
  "patientId": long,
  "insurancePolicyNumber": string,
  "claimAmount": double,
  "status": "PENDING"
}
```

**Response Body:**

```
{
  "claimId": long,
  "patientId": long,
  "insurancePolicyNumber": string,
  "claimAmount": double,
  "status": "PENDING"
}
```

**Description:** Creates a new insurance claim.

## *Get All Insurance Claims*

**Endpoint:** GET /api/insurance-claims

**Request Body:** None

**Response Body:**

```
[
  {
    "claimId": long,
    "patientId": long,
    "insurancePolicyNumber": string,
    "claimAmount": double,
    "status": "PENDING"
  },
```

```
  ...
  ]
```

**Description:** Retrieves all insurance claims.

### *Get Insurance Claim Status*

**Endpoint:** `GET /api/insurance-claims/{id}/status`

**Request Body:** None

**Response Body:**

```
{
  "claimId": long,
  "status": "PENDING"
}
```

**Description:** Retrieves the status of an insurance claim.

## Analytics and Reporting

### *Get Appointment Statistics*

**Endpoint:** `GET /api/analytics/appointments/statistics`

**Request Body:** None

**Response Body:**

```
{
  "totalAppointments": long,
  "pendingAppointments": long,
  "completedAppointments": long,
  "canceledAppointments": long
}
```

**Description:** Retrieves statistics for all appointments, including total, pending, completed, and canceled appointments.

## _Get Treatment Success Rate_

**Endpoint:** `GET /api/analytics/treatments/success-rate`

**Request Body:** None

**Response Body:**

```
{
  "Total Treatments": long,
  "Successful Treatments": long,
  "Success Rate": double
}
```

**Description:** Retrieves the success rate of treatments.

## Get Billing Revenue Statistics

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## Get Department Performance Report

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