**Database Schema Documentation for Shift Roaster Portal**

**1. User Table**

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | Integer | Primary Key | Unique identifier for each user. |
| username | String(50) | Unique, Not Null | Username for login. |
| password | String(200) | Not Null | Hashed password for security. |
| role | String(10) | Not Null | User role ("analyst" or "manager"). |
| team\_id | Integer | Foreign Key (team.id) | Optional team association for analysts. |

**Relationships:**

* One-to-Many: One user can manage multiple analysts.

**2. Team Table**

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | Integer | Primary Key | Unique identifier for each team. |
| name | String(50) | Not Null | Name of the team. |
| manager\_id | Integer | Foreign Key (user.id) | Manager responsible for the team. |

**Relationships:**

* One-to-One: Each team has one manager.
* One-to-Many: A manager can manage multiple teams, and a team can have multiple analysts.

**3. Shift Table**

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | Integer | Primary Key | Unique identifier for each shift. |
| name | String(20) | Not Null | Name of the shift (e.g., "Morning", "Afternoon", "Night"). |

**Relationships:**

* One-to-Many: A shift can be assigned to multiple analysts in the roster.

**4. Roster Table**

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | Integer | Primary Key | Unique identifier for each roster entry. |
| month | String(20) | Not Null | Month of the roster (e.g., "2024-10"). |
| analyst\_id | Integer | Foreign Key (user.id) | Analyst assigned to the shift. |
| shift\_id | Integer | Foreign Key (shift.id) | Shift assigned to the analyst. |

**Relationships:**

* Many-to-One: Multiple roster entries can be associated with one analyst and one shift.

**5. PTO (Paid Time Off) Table**

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | Integer | Primary Key | Unique identifier for each PTO request. |
| analyst\_id | Integer | Foreign Key (user.id) | Analyst requesting PTO. |
| start\_date | Date | Not Null | Start date of the PTO. |
| end\_date | Date | Not Null | End date of the PTO. |
| status | String(20) | Default 'Pending' | Status of the PTO (e.g., "Pending", "Approved", "Denied"). |

**Relationships:**

* Many-to-One: An analyst can have multiple PTO requests.

**6. Notification Table**

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | Integer | Primary Key | Unique identifier for each notification. |
| user\_id | Integer | Foreign Key (user.id) | User to whom the notification belongs. |
| message | String(200) | Not Null | Notification message. |
| read | Boolean | Default False | Indicates if the notification has been read. |
| created\_at | DateTime | Default Current Timestamp | Timestamp when the notification was created. |

**Relationships:**

* Many-to-One: Multiple notifications can belong to one user.

**Visual Representation**

Here's a visual representation of how these tables are related:

User (id)

└── Team (manager\_id)

├── Analyst (team\_id)

├── Roster (analyst\_id)

├── PTO (analyst\_id)

└── Notification (user\_id)

Shift (id)

└── Roster (shift\_id)