**Subscription Management System**

**1. User Accounts Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| user\_id | SERIAL | PRIMARY KEY |
| name | VARCHAR(100) | NOT NULL |
| email | VARCHAR(100) | NOT NULL, UNIQUE |
| password\_hash | VARCHAR(255) | NOT NULL |
| Role\_id | ENUM | NOT NULL (values: 'admin', 'vendor', 'customer') |
| status | ENUM | DEFAULT 'active' |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP |
| updated\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP |
| phone\_number | VARCHAR(15) |  |
| address | TEXT |  |
| profile\_picture\_url | VARCHAR(255) |  |
| date\_of\_birth | DATE |  |

**2. Vendor Profiles Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| vendor\_id | SERIAL | PRIMARY KEY |
| Role\_id | INT | FOREIGN KEY REFERENCES User\_Roles(role\_id) |
| business\_name | VARCHAR(255) | NOT NULL |
| business\_description | TEXT |  |
| business\_address | TEXT |  |
| phone\_number | VARCHAR(15) |  |
| tax\_id | VARCHAR(50) |  |
| website\_url | VARCHAR(255) |  |
| social\_media\_links | JSON |  |
| logo\_url | VARCHAR(255) |  |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP |
| updated\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP |

**3. SubscriptionPlans Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| plan\_id | SERIAL | PRIMARY KEY |
| vendor\_id | INT | REFERENCES VendorProfiles(vendor\_id) ON DELETE CASCADE |
| plan\_name | VARCHAR(255) | NOT NULL |
| description | TEXT |  |
| price | DECIMAL(10, 2) | NOT NULL, CHECK (price > 0) |
| duration\_in\_days | INT | NOT NULL, CHECK (duration\_in\_days > 0) |
| features | JSON |  |
| is\_active | BOOLEAN | DEFAULT TRUE |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP |
| updated\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP |

**4. CustomerSubscriptions Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| subscription\_id | SERIAL | PRIMARY KEY |
| user\_id | INT | REFERENCES UserAccounts(user\_id) ON DELETE CASCADE |
| plan\_id | INT | REFERENCES SubscriptionPlans(plan\_id) ON DELETE CASCADE |
| start\_date | DATE | NOT NULL |
| end\_date | DATE | NOT NULL |
| status | ENUM | DEFAULT 'active' |
| payment\_status | ENUM | DEFAULT 'pending' |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP |
| updated\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP |
| payment\_method | ENUM | NOT NULL (values: 'credit\_card', 'paypal', 'bank\_transfer') |
| discount\_applied | DECIMAL(10, 2) |  |

**5. Notification Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| notification\_id | SERIAL | PRIMARY KEY |
| user\_id | INT | REFERENCES UserAccounts(user\_id) ON DELETE CASCADE |
| notification\_type | ENUM | NOT NULL (values: 'email', 'sms', 'in\_app') |
| message | TEXT | NOT NULL |
| status | ENUM | DEFAULT 'unread' (values: 'unread', 'read', 'archived') |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP |
| sent\_at | TIMESTAMP | NULLABLE |
| subject | VARCHAR(255) | NOT NULL |
| is\_email | BOOLEAN | DEFAULT FALSE |

**6. User\_Roles Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| role\_id | INT AUTO\_INCREMENT | PRIMARY KEY |
| role\_name | VARCHAR(50) |  |

**7. Payments Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| payment\_id | INT AUTO\_INCREMENT | PRIMARY KEY |
| user\_id | INT | REFERENCES UserAccounts(user\_id) |
| plan\_id | INT | REFERENCES SubscriptionPlans(plan\_id) |
| amount | DECIMAL(10, 2) |  |
| payment\_date | TIMESTAMP |  |
| payment\_method | ENUM | ('credit card', 'PayPal') |
| transaction\_id | VARCHAR(255) |  |
| payment\_status | ENUM | ('success', 'failed', 'pending') |

**8. Invoices Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| invoice\_id | INT AUTO\_INCREMENT | PRIMARY KEY |
| payment\_id | INT | REFERENCES Payments(payment\_id) |
| invoice\_number | VARCHAR(50) |  |
| issue\_date | DATE |  |
| due\_date | DATE |  |
| total\_amount | DECIMAL(10, 2) |  |

**9. Promotions Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| promotion\_id | INT AUTO\_INCREMENT | PRIMARY KEY |
| promotion\_code | VARCHAR(50) |  |
| discount\_percentage | DECIMAL(5, 2) |  |
| start\_date | DATE |  |
| end\_date | DATE |  |
| usage\_limit | INT |  |
| plan\_id | INT | REFERENCES SubscriptionPlans(plan\_id) |

**10. Feedback Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| feedback\_id | INT AUTO\_INCREMENT | PRIMARY KEY |
| user\_id | INT | REFERENCES UserAccounts(user\_id) |
| plan\_id | INT | REFERENCES SubscriptionPlans(plan\_id) |
| feedback\_text | TEXT |  |
| rating | INT |  |
| submitted\_at | TIMESTAMP |  |

**11. Subscription\_History Table**

| **Column Name** | **Data Type** | **Constraints** |
| --- | --- | --- |
| history\_id | INT AUTO\_INCREMENT | PRIMARY KEY |
| plan\_id | INT | REFERENCES SubscriptionPlans(plan\_id) |
| change\_type | ENUM | ('upgraded', 'canceled') |
| old\_value | TEXT |  |
| new\_value | TEXT |  |
| changed\_at | TIMESTAMP |  |