

# Database Documentation

## 1. USERS Table

### Purpose:

The **USERS** table stores the information of all individuals who are associated with the lab (e.g., students, staff, janitors). This table is referenced when verifying lab access and logs in the **SUNLAB\_RECORDS** table.

### Columns:

Column	Data Type	Description
psu_id	INT	Primary Key. Unique identifier for each user. Represents the user's PSU ID number.
psu_email	VARCHAR	The official PSU email address of the user.
last_name	VARCHAR	The user's last name.
first_name	VARCHAR	The user's first name.
lab_access	VARCHAR	Denotes whether the user has access to the lab. It can be either "Yes" or "No".
access_type	VARCHAR	Describes the role of the user, such as "Student", "Staff", or "Janitor".

### Example Entry:

psu_id	psu_email	last_name	first_name	lab_access	access_type
987347238	jxp6534@psu.edu	Doe	John	Yes	Student

### Sample Query:

```
SELECT * FROM "USERS";
```

## 2. SUNLAB\_RECORDS Table

### Purpose:

The **SUNLAB\_RECORDS** table stores logs of access attempts to the lab, including timestamps and whether access was granted. Each log is associated with a user from the **USERS** table via the **psu\_id**.

### Columns:

Column	Data Type	Description
psu_id	INT	Foreign Key. Links to the <b>psu_id</b> in the <b>USERS</b> table to identify which user the record belongs to.
time_stamp	TIMESTAMP	Records the exact date and time of the access attempt.
access_grant	VARCHAR	Indicates whether access was granted ("Yes") or denied ("No").

### Example Entry:

psu_id	time_stamp	access_grant
971543213	2024-12-04 16:00:00	No

### Sample Query:

```
SELECT * FROM "SUNLAB_RECORDS" ORDER BY time_stamp DESC;
```

### 3. ADMIN Table

#### Purpose:

The ADMIN table stores credentials of administrators who can access the admin panel of the system. It is used for login verification.

#### Columns:

Column	Data Type	Description
username	VARCHAR	The username of the admin for login.
password	VARCHAR	The password of the admin for login.
email	VARCHAR	The email address associated with the admin.

#### Example Entry:

username	password	email
admin	admin	admin@psu.edu

#### Sample Query:

```
SELECT * FROM "ADMIN";
```

### Relationships

- The `psu_id` column in `SUNLAB_RECORDS` is a **foreign key** that references the `psu_id` in the `USERS` table. This links each access log to a specific user. - The `ADMIN` table stands independently and does not link directly to other tables but is used for administrative access.

### Constraints and Validation Rules

- **Primary Key:** `psu_id` in the `USERS` table. - **Foreign Key:** `psu_id` in the `SUNLAB_RECORDS` table references `psu_id` in the `USERS` table. - **Data Validation:** - `lab_access` in `USERS` must be either "Yes" or "No". - `access_grant` in `SUNLAB_RECORDS` must be either "Yes" or "No". - `access_type` in `USERS` must be one of "Student", "Staff", or "Janitor".

### Example Workflow

1. **User Registration:** When a new user is added, their details are inserted into the `USERS` table. 2. **Access Logging:** Each time a user attempts to access the lab, a new entry is added to the `SUNLAB_RECORDS` table, including whether access was granted or denied. 3. **Admin Login:** Admins use the `ADMIN` table for logging into the system to manage records or view logs.