Carillon Information Security inc. PHP Technical Test

Preamble

In the current system, users are managed via a CMS-like system. User populations are defined with certain fields of different types. Some of those fields can bear flags to modify their behaviour, like "unique", "required", "multi".

Users are then created in the system by first selecting the population to which they belong and then using the fields defined by that population to present an HTML form to the agent. The agent then fills the form and submits to a handler script that validated the submitted data against validation rules belonging to the appropriate field type.

If a field is marked "unique", then the value must be unique for that field across all users belonging to that population.

If a field is marked "required", then the value must not be blank.

If a field is marked "multi", then multiple values can be submitted and stored for that field.

`db.sql` defines the schema used to store populations and users.

`data.sql` contains the test data that you will require. Feel free to create more synthetic data as you need it.

Instructions

Your task is to modify the system to allow for the following use case:

There are 2 populations:

- employees
- external contractors

In addition to the usual "first name" and "last name" fields, both populations have an "email" field marked unique. However, because uniqueness only works within a population, this could cause a situation where 2 users could share an email address if they belong to a different population, which is a problem. You must design a solution that would allow uniqueness to cross populations such that the value is unique across multiple populations.

Similarly, the `employeeid` field must also be unique across both populations.

Caveat

Other fields must still be allowed to be unique only within a certain population.

Deliverable

You must provide the following:

- necessary SQL commands to adapt the database to your design in a single file (changes.sql)
- necessary synthetic data that you created to showcase your solution.
- a working implementation of the form to create users with your solution.