Data Models and more V1.0

Apr 2016

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This is the first draft of the data model and site architectural layout as we envision.

We have broken our data into three tables.

- **User** – Table to model all attributes of a user
- **Pickup**- Table to model all pickup related information (including scheduled/unscheduled pickups as well as donor information)
- **Day**- Table to model all days which have already been deemed as available for pickups.

The sections of this document are as follows:

1. User Data Model
2. Pickup Data Model
3. Day Data Model
4. Flow of Events
5. Named Routes
6. Issues

Feedback can be slacked, or you can email us at mgprucha@noctrl.edu (mgprucha on slack) and bhadra@noctrl.edu (bilaladra on slack)

1. User Data Model

User Data Model	
Column	**Type**
id[1]	int
user_id	string
user_email	string
user_password	string
user_name	string
level	enum

- A user will have a unique integer id which will serve as the key to the User table. This is generated by Rails when a new user is added.
- The user_id is a unique string determined by the admin when adding the user. The user_id will be used at login. (i.e. mprucha).
- The user will have an email address which will be a string in the form: *<name>*@*<domain>* (i.e. mgprucha@noctrl.edu).
- A user's password need not be unique. Restrictions on password can be determined by the programmer in charge of user signup.
- The name attribute will consist of the user's first and/or last name. It will depend on how the name is entered by the administrator when adding a user.
- The user's level will be an enum. The correspondence of integers to level types is shown below. (more information on enums can be found here in the ruby on rails api http://api.rubyonrails.org/ , search enum if you dont see it right away its the first one)
    - 0 -> Entry
    - 1 -> Standard
    - 2 -> Admin

[1] Column names with an underline denote keys in the table

Example User:

id	->	1
user_id	->	kriegerRulez
user_email	->	wtkrieger@noctrl.edu
user_password	->	bkrieg15
user_name	->	Bill Krieger
level	->	2

2. Pickup Data Model

Pickup Data Model	
Column	**Data type**
id	int
day_id	int
donor_name	string
donor_address_line1	string
donor_address_line2	string
donor_city	string
donor_zip	string
donor_dwelling_type	string
donor_location_instructions	string
donor_phone	string
donor_email	string
number_of_items	int
item_description	text
other_notes	text
pickup_time	string

- Each pickup will have a unique id created when the pickup is created.
- Day_ID is the id of the corresponding Day row. An unscheduled pickup has a Day_ID of null where a scheduled pickup has a Day_ID that is defined. To get the date of the pickup simply get the date from the corresponding Day in the Day table.

- Because we are not interested in keeping track of how many donations a donor has made, it is easier to just add donor information as attributes to the pickup table.
- Donor name, address, city, zip, dwelling type, location instructions, phone, and email are all strings entered on the /pickup/new screen.
- Donor phone will be a 10-character string of numbers (i.e. 6301234567)
- Number of items is an integer.
- Both item_description and other_notes are type text. This is because the default number of characters a string can hold is 255.

Example Pickup:

id	->	25
scheduled	->	true
donor_name	->	Bob
donor_address_line1	->	30 N Brainard St
donor_address_line2	->	null
donor_city	->	Naperville
donor_zip	->	60540
donor_dwelling_type	->	House
donor_location_instructions	->	West of Rt. 53
donor_phone	->	6301234567
donor_email	->	bob@noctrl.edu
number_of_items	->	1
item_description	->	A 55” Sony Bravia TV
other_notes	->	Please ring the door bell, then knock, then donor will answer the door.
pickup_time	->	2-5pm

3. Day Data Model

Day	
Column	**Data type**
id	int
date	string
number_of_pickups	int

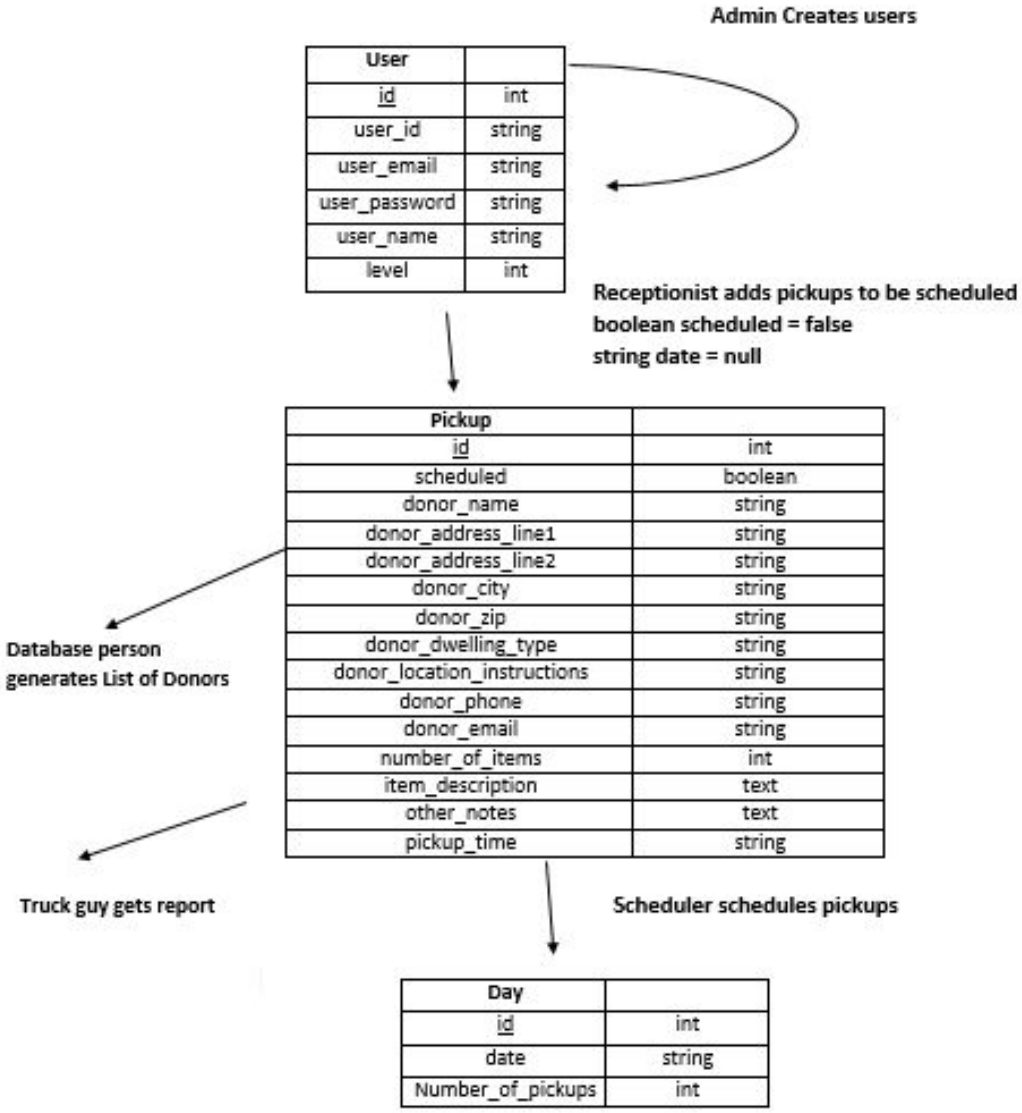
- The Day table will hold the date and number of pickups scheduled for that date and the date. The date will be of the form: MM/DD/YYYY

Example Day:

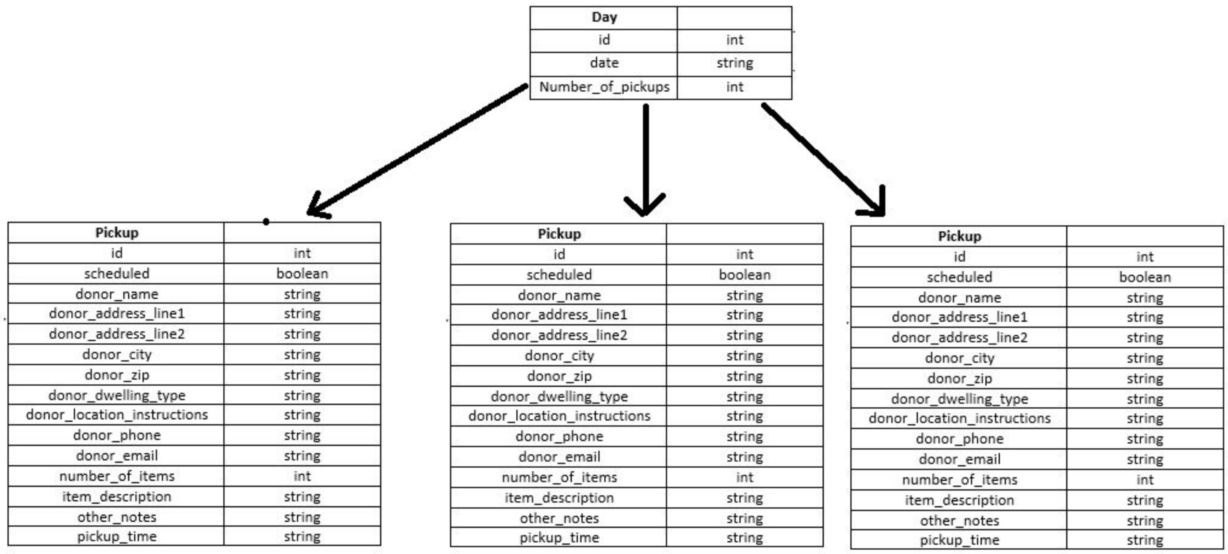
id	->	35
date	->	02/05/2016
number_of_pickups	->	4

4. Flow of Events

A typical flow of events and their relation to our data models is shown in the figure below.



Day and Pickup objects have a one-to-many relationship as shown in the figure below.



Notes:

- A Day has many pickups, but a pickup has at most (belongs to) one day.
- The Bullpen consists of the all pickups whose ‘scheduled’ attribute is equal to true (or whose date attribute is equal to null).
- When a pickup is added to the bullpen, it is created in the pickup table with scheduled equal to false and date equal to null.
- A list of scheduled pickups can be accessed by accessing all the pickups in the pickups table whose scheduled attribute is equal to true (or whose date is not null).
- When a pickup is rescheduled for a different date, its current date must be used to access the matching date in the Day table. The number of pickups for that date must be decremented by one. Its current date must then change to the newly scheduled date.

5. Named Routes

Bill: We need something here… a description of this table?

Name	**Path**	**Description**
Login	root	The first screen
Home.1	/pickup/index	Bullpen
Home.2	/pickup/new	New pickup form
Home.3	/pickup/<PickupID>/edit	view/edit/schedule pickup
Schedule.1	/day/index	List pickup days
Schedule.2	/day/new	New pickup days
Schedule.3	/day/<DayID>	List pickups on day
Report.1	/reports	List reports
Report.2	/reports/donors	Generates reports for donors
Report.3	/reports/truck	Generates truck report
Admin.1	/users	Lists all users
Admin.2	/users/new	Add a new users
Admin.3	/users/<UserID>/edit	Edit a user
About	/about	A riveting page detailing our journey and great accomplishments

Notes:

- <DayID> = the id of the Day object stored in the database
- <UserID> = the id of the Day object stored in the database
- <PickupID> = the id of the Pickup object stored in the database
- Home.1 will have two paths: one as the root path and one at /pickup/index

In routes.rb, we will have the following resources:

1. Users
2. Pickups
3. Days

6. Issues

The following are questions we would like input from the rest of the team for. These may or may not be relevant to the data model, but they are questions that came up while we were discussing the data model.

1. Would it be useful to store the date in 1 column as a string following the format of MM/DD/YYYY or store the Month, Day, and Year in separate columns?

2. Should we add a date created to the pickups table? (for generating reports)

3. What should our password restrictions be?

4. Should we add a canceled column to the pickups table (in case a pickup is canceled at any point) or just set it as unscheduled?

5. Should we add functionality to delete pickups from the database? If we do, should this be automated or only on user action?