Ubuntu Linux installation notes (installed as guest OS on Windows 7 VirtualBox VM)

1. Installed VirtualBox 4.3.26-98988-Win (downloaded from www.virtualbox.org).
2. Downloaded Ubuntu (Ubuntu-14.04.2-desktop-i386.iso) from www.ubuntu.com.
   NOTE: Needed to install 32-bit version because Windows 7 was installed as 32-bit on our desktop machine.
3. Started Oracle VM VirtualBox Manager. Set up virtual machine called "ubuntu14" of type "Linux" and version "Ubuntu (32 bit)", with 768MB memory and 18GB virtual hard disk, mapped virtual DVD drive to Ubuntu 14.04.2 desktop installation ISO image, network interface set to NAT mode.
4. Installed Ubuntu 14.04.2:
   a. Answered default for hostname (bruce-VirtualBox)
   b. User account name: bruce
   c. Root password: <same as for privileged Windows password>
   d. After installation was complete, removed CD/DVD mapping, and rebooted.
5. Installed VirtualBox guest additions to support window resizing:
   > Devices ⯈ Insert Guest Additions CD image

   Rebooted to confirm that window resizing was working.
6. Shut down the Ubuntu instance, and defined the primary network interface (Adapter 1) to be in "bridged" mode, to support a non-changing static IP address. Booted the Ubuntu instance back up again, and then edited `/etc/network/interfaces` to add the following:
   ```
   auto eth0
   iface eth0 inet static
   address 192.168.10.30
   netmask 255.255.255.0
   gateway 192.168.10.1
   dns-search jemsspecialcamp.org
   dns-nameservers 192.168.0.1
   ```
7. Installed OpenSSH server:
   ```
   # apt-get install openssh-server
   ```
   Tested SSH access to this new virtual system (IP address assigned to the host-mode interface was 192.168.10.30) from the Windows 7 desktop— success!
8. Installed ntp:
   ```
   # apt-get install ntp
   ```
9. Installed all available updates when prompted by Ubuntu GUI.
   Alternate way from command line:
   ```
   # apt-get update
   # apt-get upgrade
   ```
10. After updates were installed and Linux rebooted, needed to reinstall VirtualBox guest additions in order to re-enable some functions (such as cut-and-paste between Windows 7 and Linux). Apparently, installation of a new Linux kernel frequently requires a reinstall of VirtualBox guest additions.

11. Changed Ubuntu to boot without starting a desktop environment (i.e., in text mode only):
    a. Edited /etc/default/grub to change the "GRUB_CMDLINE_LINUX_DEFAULT" parameter value to "text".
    b. Updated Grub:
       `# update-grub`
    c. Rebooted
12. Set up this Linux instance to support remote desktop connections from Windows 7:
    a. Installed xrdp in order to be able to establish a remote desktop session with this Linux instance:
       `# apt-get install xrdp`
    b. Edited /etc/xrdp/xrdp.ini to ask for port number to connect to when remotely connecting via RDP:
       ```
       name=sesman-Xvnc
       lib=libvnc.so
       username=ask
       password=ask
       ip=127.0.0.1
       port=ask5910
       ```
       This is so that you can reconnect to your previous RDP session, which would be running on port 5910. If you are connecting for the first time, you'll need to specify a port of minus-one (-1) in order for the new RDP session to be created.
    c. Installed xfce desktop environment to use for remote desktop sessions:
       `# apt-get install xfce4`
    d. Created an .xsession file in my personal "bruce" home directory, containing the command "xfce4-session".
    e. Restarted the xrdp service:
       `# service xrdp restart`
    f. Tested remote desktop access to this Linux instance by opening the Remote Desktop Connection application from Windows 7, and connecting to IP address 192.168.10.30 and specifying port of "-1" (when prompted in xrdp login window). Logged in with my "bruce" account —success! Disconnected the RDP session and then reconnected, specifying IP address 192.168.10.30 and this time leaving port as "5910" in xrdp login window—success again!
13. In preparation for installing Ruby Version Manager (rvm), installed mpapis public key:
    ```
    $ gpg --keyserver hkp://keys.gnupg.net --recv-keys \
    409B6B1796C275462A1703113804BB82D39DC0E3
    ```
14. Installed Ruby Version Manager (rvm) in a non-privileged account (bruce), allowing RVM autolibs to auto-install required dependent packages as well as the most current version of Ruby (v2.2.1):
    ```
    $ \curl -sSL https://get.rvm.io | bash -s stable --ruby
    ```
15. Set up user startup scripts to initialize the RVM environment (for terminal windows that are started in the Ubuntu desktop environment):

```
$ echo '[[ -s "$HOME/.rvm/scripts/rvm" ]] && source
"$HOME/.rvm/scripts/rvm"' >> ~/.bashrc
$ . ~/.bashrc
```

16. Tested sqlite3 from a non-privileged account (bruce):

```
$ sqlite3 –help
$ sqlite3 –version
```

17. Installed Rails (v4.2.1) and associated packages:

```
$ gem install rails
```

Other associated packages that were automatically installed were as follows:

- thread_safe 0.3.5
- tzinfo 1.2.2
- i18n 0.7..0
- activesupport 4.2.1
- rails-deprecated_sanitizer 1.0.3
- mini_portile 0.6.2
- nokogiri 1.6.6.2
- rails-dom-testing 1.0.6
- loofah 2.0.1
- rails-html-sanitizer 1.0.2
- erubis 2.7.0
- builder 3.2.2
- actionview 4.2.1
- rack 1.6.0
- rack-test 0.6.3
- actionpack 4.2.1
- tilt 1.4.1
- multi_json 1.11.0
- hike1.2.3
- sprockets 2.12.3
- sprockets-rails 2.2.4
- bundler 1.9.2
- thor 0.19.1
- railties 4.2.1
- globalid 0.3.5
- activejob 4.2.1
- mime-types 2.4.3
- mail 2.6.3
- actionmailer 4.2.1
- arel 6.0.0
- activemodel 4.2.1
- activerecord 4.2.1

18. Installed the QuickBase client (v1.0.24) and httpclient (v2.6.0.1):

```
$ gem install quickbase_client
$ gem install httpclient
```

(the QuickBase client is supposed to run a lot faster with httpclient also installed)

19. Installed postgresql (`# apt-get install postgresql`), which installed not only postgresql but also dependent packages:
    a. libpq5 (9.3.6-0)
    b. postgresql-client-common (154)
    c. postgresql-client-9.3 (9.3.6-0)
    d. postgresql-9.3 (9.3.6-0)
    e. postgresql (9.3+154)
20. Installed libpq-dev (`# apt-get install libpq-dev`), which installed the following:
    a. libgssrpc4 (1.12+dfsg-2ubuntu5.1)
    b. libkadm5clnt-mit9 (1.12+dfsg-2ubuntu5.1)
    c. libkdb5-7 (1.12+dfsg-2ubuntu5.1)
    d. libkadm5srv-mit9 (1.12+dfsg-2ubuntu5.1)
    e. comerr-dev (2.1-1.42.9-3ubuntu1.2)
    f. krb5-multidev (1.12+dfsg-2ubuntu5.1)
    g. libpq-dev (9.3.6-0)
21. Set administrative password for postgresql:
    ```
    # su – postgres
    $ psql template1
    psql (9.3.6)
    Type "help" for help.
    template1=# ALTER USER postgres with encrypted password 'Jesus';
    template1=# ^D
    $ ^D
    # /etc/init.d/postgresql restart
    ```
22. Edited `.bashrc` script in "bruce" account to define the following variables:
    Edited `.bashrc` script in "bruce" account to define the following variables:
    ```
    export RUBYLIB='/home/bruce/.rvm/gems/ruby-2.2.1/gems/quickbase_client-1.0.24/lib'
    export HEROKU_SSL_VERIFY=disable
    ```
23. Accessed the site to download/install the Heroku Toolbelt (https://toolbelt.heroku.com) using Firefox on this Ubuntu machine, and followed instructions displayed there. The following packages were installed as a result:
    a. libjs-jquery 1.7.2+dfsg-2ubuntu1
    b. liberror-perl 0.17-1.1
    c. git-man 1:1.9.1-1ubuntu0.1
    d. git 11:1.9.1-1ubuntu0.1
    e. git-core 1:1.9.1-1ubuntu0.1
    f. ruby 1:1.9.3.4
    g. ruby1.9.1 1.9.3.484-2ubuntu1.2
    h. libruby1.9.1 1.9.3.484-2ubuntu1.2
    i. rubygems-integration 1.5
    j. ruby2.0 2.0.0.484-1ubuntu2.2
    k. foreman 0.75.0
    l. heroku 3.31.3
    m. heroku-toolbelt 3.31.3
    n. libruby2.0:i386 2.0.0.484-1ubuntu2.2

24. Copied .ssh directory contents from my old Linux system to this new one (/home/bruce/.ssh).
25. Validated that the SSH public key of the SSH key pair (stored as .ssh/id_rsa.pub) is present in the Heroku account, and that SSH cryptographic trust has been established by noting that the Heroku command is executed without any password challenge required:

    ```
    $ heroku keys
    ```

    (The public key corresponding to this Linux system is "bruce@bruce-VirtualBox".)
26. Restored camper_meds directory contents from previous (old) Linux instance.
27. Modified camper_meds/Gemfile to require Ruby version of 2.2.1.
28. Validated communication to the camper_meds app (running on Heroku):

    ```
    $ cd camper_meds
    $ heroku logs --tail
    ```

    (Verified that camper_meds app logs were displayed. Typed Ctrl-C to exit from viewing the streaming logs.)
29. While logged in as "bruce":

    ```
    $ cd camper_meds
    $ bundle install
    ```

    The following packages in green below were installed as a result:

    ```
    Using rake 10.4.2
    Using i18n 0.7.0
    Installing json 1.8.2
    Installing minitest 5.5.1
    Using thread_safe 0.3.5
    Using tzinfo 1.2.2
    Using activesupport 4.2.1
    Using builder 3.2.2
    Using erubis 2.7.0
    Using mini_portile 0.6.2
    Using nokogiri 1.6.6.2
    Using rails-deprecated_sanitizer 1.0.3
    Using rails-dom-testing 1.0.6
    Using loofah 2.0.1
    Using rails-html-sanitizer 1.0.2
    Using actionview 4.2.1
    Using rack 1.6.0
    Using rack-test 0.6.3
    Using actionpack 4.2.1
    Installing globalid 0.3.3
    Using activejob 4.2.1
    Using mime-types 2.4.3
    Using mail 2.6.3
    Using actionmailer 4.2.1
    Using activemodel 4.2.1
    Using arel 6.0.0
    Using activerecord 4.2.1
    Installing coffee-script-source 1.9.1
    ```

```
Installing execjs 2.5.0
Installing coffee-script 2.4.1
Using thor 0.19.1
Using railties 4.2.1
Installing coffee-rails 4.1.0
Using hike 1.2.3
Using httpclient 2.6.0.1
Using multi_json 1.11.0
Installing jbuilder 1.5.3
Installing jquery-rails 3.1.0
Installing libv8 3.16.14.3
Installing pg 0.17.1
Using quickbase_client 1.0.24
Using bundler 1.9.2
Using tilt 1.4.1
Using sprockets 2.12.3
Using sprockets-rails 2.2.4
Using rails 4.2.1
Installing rails_serve_static_assets 0.0.2
Installing rdoc 4.1.1
Installing ref 1.0.5
Installing sass 3.4.13
Installing sass-rails 5.0.3
Installing sdoc 0.4.0
Installing therubyracer 0.12.1
Installing turbolinks 2.5.3
Installing uglifier 2.5.0
```

30. Created databases for the camper_meds app:
    ```
    $ rake db:create
    $ rake db:migrate
    ```

31. Noticed that a deprecation warning appeared when starting "rails server" now:
    ```
    DEPRECATION WARNING: The configuration option
    `config.serve_static_assets` has been renamed to
    `config.serve_static_files` to clarify its role (it merely enables
    serving everything in the `public` folder and is unrelated to the asset
    pipeline). The `serve_static_assets` alias will be removed in Rails 5.0.
    Please migrate your configuration files accordingly. (called from block
    in tsort_each at /home/bruce/.rvm/rubies/ruby-
    2.2.1/lib/ruby/2.2.0/tsort.rb:226)
    ```
    I changed all `config.serve_static_assets` references to `config.serve_static_files` in configuration files in the config subdirectory, but the deprecation warning persisted. Will hope that future versions of Ruby will correct this issue….

32. Tested by running "rails server" with a command-line option to tell it to accept off-host-sourced connections:
    $ rails server –b 0.0.0.0
    Then, in a separate browser session, browsed to http://192.168.10.30:3000 and confirmed that all functions were working properly.

33. When updates were required to the "camper_meds" Rails app, did the following (once the appropriate changes were made on local files) to upload the changes to Heroku, when in the "camper_meds" directory:
```
$ git push heroku master
$ git config --global user.email "bruce_satow@yahoo.com"
$ git commit –a
$ git push heroku
```
34. Tested by browsing to the following URL and testing functionality:
    https://damp-anchorage-5607.herokuapp.com/
    Observed application logs to validate functionality:
```
$ cd camper_meds
$ heroku logs --tail
```
35. For subsequent changes/updates to the "camper_meds" Rails app, did the following from the "camper_meds" directory:
```
$ git add .
$ git commit –m "<description of change>"
$ git push heroku
```
36. Installed Google Chrome by browsing to http://www.google.com/chrome from Firefox, and following the instructions there.
37. Shut down Linux instance, upgraded to VirtualBox 4.3.28-100309-Win, started Linux instance back up again, and reinstalled VirtualBox guest additions to update it to the new 4.3.28 version. Rebooted Linux instance to validate successful upgrade.
38.
39. ***** LEFT OFF HERE *****
40.
41. Ran the command "rvm requirements" to get a list of the additional packages to install. The packages that were listed to be installed were as follows (with the exception of build-essential, curl, and git-core, which were already installed):
    a. bison (v1:2.4.1.dfsg-3)
    b. libncurses5-dev (v5.7+20100313-5)
    c. libreadline6-dev (v6.1-3)
    d. libserf-0-0 (v0.3.1-1)
    e. libsqlite3-dev (v3.7.3-1)
    f. libssl-dev (v0.9.8o-4squeeze7)
    g. libsvn1 (v1.6.12dfsg-6)
    h. libxml2-dev (v2.7.8.dfsg-2+squeeze3)
    i. libxslt1-dev (v1.1.26-6)
    j. libyaml-0-2 (v0.1.3-1)
    k. libyaml-dev (v0.1.3-1)
    l. sqlite3 (v3.7.3-1)
    m. subversion (v1.6.12dfsg-6)
42. Installed the additional packages listed by "rvm requirements", as root:
```
# /usr/bin/apt-get install openssl libreadline6 libreadline6-dev zlib1g
zlib1g-dev libssl-dev libyaml-dev libsqlite3-dev sqlite3 libxml2-dev
libxslt-dev autoconf libc6-dev ncurses-dev automake libtool bison
subversion
```

43. Tested sqlite3 from a non-privileged account (bruce):
    $ **sqlite3 –help**
    $ **sqlite3 –version**
44. ~~Installed the SQLite3 gem (v1.3.5):~~
    ~~# gem install sqlite3~~
45. Installed Ruby (v1.9.3-p125) from a non-privileged account (bruce):
    $ **rvm install 1.9.3**
    $ **rvm use 1.9.3 --default**
46. Installed Rails (v3.2.3):
    $ **gem install rails**
47. Updated the QuickBase client (v1.0.20):
    $ **gem install quickbase_client**
    $ **gem install httpclient**
    (the QuickBase client is supposed to run a lot faster with httpclient also installed)
48. Tested Rails installation:
    $ **rails new hello**
    $ **cd hello**
    <added the following to the end of Gemfile: gem 'therubyracer'>
    $ **bundle install**
    $ **rails server**
    Then, in a separate browser session, browsed to http://192.168.10.30:3000
    and confirmed that a welcome screen appeared.
49. Copied the following from the old Debian PC to the "bruce" account on this Virtual PC:
    a. Contents of camper_meds directory from "root" account of old Debian PC
    b. Contents of .ssh directory from "root" account
    c. Contents of .heroku directory from "root" account
50. Edited .bashrc script in "bruce" account to define the following variables:
    export RUBYLIB='/home/bruce/.rvm/gems/ruby-1.9.3-p125/gems/quickbase_client-
    1.0.20/lib'
    export HEROKU_SSL_VERIFY=disable
51. ~~Made the following changes to accommodate the move of the camper_meds rails app from the old Debian PC to the new Virtual PC:~~
    a. ~~Commented out the "gem 'mysql'" line from Gemfile in the camper_meds directory.~~
    b. ~~Renamed Gemfile.lock to Gemfile.lock.save so that a new Gemfile.lock file would be created with newer software versions reflected.~~
    c. ~~Edited config/database.yml to change the production DB from mysql to sqlite3, to remove the dependence on mysql (which isn't installed on this system).~~
    d. ~~Ran "bundle install" to install missing gems.~~
    e. ~~Tested by:~~
       ~~$ cd camper_meds~~
       ~~$ rails server~~

52. Created a Ruby on Rails app called "camper_meds":

a. $ **rails new camper_meds**

b. $ **cd camper_meds**

c. Added the following to the end of Gemfile:
```
gem 'therubyracer'
gem 'quickbase_client'
gem 'httpclient'
```

d. $ **bundle install**

e. $ **rails generate scaffold camper fullname:string**

f. $ **rails generate scaffold med med_qbid:string camper_id:integer**

g. Added the following to *camper_meds/app/models/camper.rb*:
```
    # a camper can have many meds
      has_many :meds
      accepts_nested_attributes_for :meds
```

h. Added the following to *camper_meds/app/models/med.rb*:
```
    # every med is linked to a camper, through camper_id
      belongs_to :camper
```

i. Created another scaffold to support a new model for QuickBase authentication credentials:

$ **rails generate scaffold QBAuth loginname:string loginpwd: string**

j. $ **rake db:migrate**

k. Edited *camper_meds/config/boot.rb* to add the following line after "require 'rubygems'":
```
require 'QuickBaseClient'
$qb_user = ""
$qb_pwd = ""
$qb_apptoken = "rabajzbsx3v5nb3rki6udbnccbb"
$campers_dbid = "bgghbp7gs"
$meds_dbid = "bgghbp7gt"
$med_schedule_items_dbid = "bgghbp7g9"
$timeOfLastActivity = Time.now
$timeOutInSeconds = 900

$dayOfWeek = ["Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat"]
$hourOfDay = ["00", "01", "02", "03", "04", "05", "06", "07", "08", "09",
"10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21",
"22", "23"]
$dayMap = { "Sun" => "Sunday", "Mon" => "Monday", "Tue" => "Tuesday",
"Wed" => "Wednesday", "Thu" => "Thursday", "Fri" => "Friday", "Sat" =>
"Saturday" }
$hourMap = { "00" => "12:00 midnight", "01" => "1:00 am", "02" => "2:00
am", "03" => "3:00 am", "04" => "4:00 am", "05" => "5:00 am", "06" =>
"6:00 am", "07" => "7:00 am", "08" => "8:00 am", "09" => "9:00 am", "10"
=> "10:00 am", "11" => "11:00 am", "12" => "12:00 noon", "13" => "1:00
pm", "14" => "2:00 pm", "15" => "3:00 pm", "16" => "4:00 pm", "17" =>
```

```
"5:00 pm", "18" => "6:00 pm", "19" => "7:00 pm", "20" => "8:00 pm", "21"
=> "9:00 pm", "22" => "10:00 pm", "23" => "11:00 pm" }
```
l. Edited *camper_meds/config/routes.rb* to reflect a nested relationship between meds and campers, and to be able to access nested resources using concise route syntax. Changed:
```
resources :campers
resources :meds
```
to:
```
resources :campers , :shallow => true do
  resources :meds , :shallow => true
end
```
m. $ **rake routes**

(all supported routes displayed here)
n. Edited *camper_meds/app/helpers/campers_helper.rb* to define a method called "get_camper_piclist" that will return a hashed list of camper's quickbase IDs with hash index being the camper's full name (last name, first name). This new method was coded as follows:
```
def get_camper_piclist
  qbc = QuickBase::Client.new($qb_user,$qb_pwd)
  qbc.apptoken = $qb_apptoken
  records = Hash.new
  records = qbc.getAllValuesForFields( $campers_dbid, ["Full
Name","Full name (last name, first name)"] )
  qbc.signOut
  numRecords = records["Full Name"].length
  (0..(numRecords-1)).each { |index|
    @camper_fullname[records["Full name (last name, first name)"]
[index]] = records["Full Name"][index]
  }
end
```
o. Edited *camper_meds/app/helpers/meds_helper.rb* to define three new methods as follows:
  i. get_med_piclist – returns a hashed list of med quickbase record IDs, for meds that match the camper of interest. Hash index is the medication name.
  ii. get_med_info – returns a hashed list of information associated with a given medication. Hash index is the type of information (Purpose, Dosage, etc.) associated with the med.
  iii. create_med_schedule – takes new med schedule entered by the user, and replaces med schedule for the given med ID with the new med schedule in QuickBase.
p. Edited *camper_meds/apps/views/campers/new.html.erb* to leverage the "get_camper_piclist" method to display a piclist for the user to access when selecting a camper for which to enter med info. Inserted erb code looked like this:
```
Select a camper:<br />
<% @camper_fullname = Hash.new %>
<% get_camper_piclist %>
<% list = @camper_fullname.sort %>
```

```
<%= f.select :fullname, list %>
```
Also, removed link to go back (which goes to the "show" view, which we don't want to reference). Also, pasted the contents of _form.html.erb into the new.html.erb file, to replace the "render 'form'" line, since _form.html.erb has some content in it that I needed to remove specific to the "new" view. Also, removed the links to "show" and "back" at the bottom of the view. Also, changed the "submit" button to only contain the word "Submit" rather than the default "Create Camper".

q. Edited *camper_meds/app/controllers/campers_controller.rb* as follows:
   i. Reset the timeout timer for QuickBase credential caching, within the "new" method.
   ii. Modified the "create" method to redirect_to "new_camper_med_path(@camper)", so that the user will be prompted to select a med for the selected camper, once a camper is selected.
   iii. Added a protected method called "get_qb_credentials" at the bottom of the campers_controller.rb file, to clear the QuickBase credential cache if timeout has expired, and to redirect to a QuickBase authentication screen if the cache has been cleared or has not yet been initialized.
   iv. Added a "before_filter" at the beginning of the controller, to invoke the "get_qb_credentials" method.

r. Edited *camper_meds/app/views/qb_auths/new.html.erb* to request the user's QuickBase authentication credentials. Also, removed link to go back (which goes to the "show" view, which we don't want to reference). Also, pasted the contents of _form.html.erb into the new.html.erb file, to replace the "render 'form'" line, since _form.html.erb has some content in it that I needed to remove specific to the "new" view. Also, removed the links to "show" and "back" at the bottom of the view.

s. Edited *camper_meds/app/controllers/qb_auths_controller.rb* to modify the "create" method so that the entered QuickBase credentials are not saved to a data structure, but instead are just stored in global variable names that were defined in the *boot.rb* script. Also, QuickBase authentication is initiated as a part of the "create" method, and user is redirected to the "new camper" screen if authentication is successful. Cache timer is also reset. If authentication is not successful, "new qb_auth" screen is again displayed, with flash[:notice] displayed indicating that the credentials were invalid.

t. Edited *camper_meds/config/application.rb* to add "`, :loginpwd`" to the list of config.filter_parameters. This is so that QuickBase login passwords will be filtered out before being logged, for security reasons.

u. Edited *camper_meds/apps/views/meds/new.html.erb* to leverage the "get_med_piclist" method to display a piclist for the user to access

when selecting a med for which to enter med schedule info for a particular camper. Changed the title displayed at the top to "`Select a med for <%=h @camper.fullname %>`". Changed "form_for" line from "`< %= form_for(@med) do |f| %>`" to "`<%= form_for(@camper, @med) do |f| %>`", to adjust to the relationship between campers and meds. Inserted erb code looked like this:

```
Select a med to schedule for <%=h @camper.fullname%>:<br />
<% @med_list = Hash.new %>
<% get_med_piclist %>
<% list = @med_list.sort %>
<% if list.length == 0 %>
  <br />
  *** No meds found ***
  <br /><br />
<% else %>
  <%= f.select :med_qbid, list %>
<% end %>
```

Also, removed link to go back (which goes to the "show" view, which we don't want to reference). Also, pasted the contents of _form.html.erb into the new.html.erb file, to replace the "render 'form'" line, since _form.html.erb has some content in it that I needed to remove specific to the "new" view. Also, removed the links to "show" and "back" at the bottom of the view. Also, changed the "submit" button to only contain the word "Submit" rather than the default "Create Med". Also, changed the "camper_id" field to a hidden field.

v. Edited *camper_meds/app/controllers/meds_controller.rb* as follows:
  i. Reset the timeout timer for QuickBase credential caching, within the "show", "new", and "edit" methods.
  ii. Modified the "create" method to change the notice from "Med was successfully created" to "Med was successfully selected".
  iii. Added a protected method called "get_qb_credentials" at the bottom of the campers_controller.rb file, to clear the QuickBase credential cache if timeout has expired, and to redirect to a QuickBase authentication screen if the cache has been cleared or has not yet been initialized.
  iv. Added Camper.find statements to the "show", "new", and "edit" methods.
  v. Added a "before_filter" at the beginning of the controller, to invoke the "get_qb_credentials" method.

w. Edited *camper_meds/app/views/edit.html.erb* to display information on the selected med, and to allow the user to define a med schedule for that selected med.
  i. Copied _form.html.erb to this file, to replace the "<%= render 'form' %>" line.
  ii. Highly customized this form to call "get_med_info" to pull information regarding the selected med from the QuickBase,

display the med information, and then display a form to allow the user to create a new med schedule for this med by clicking on checkboxes in the form.

x. Edited *camper_meds/app/views/show.html.erb* to display information on the selected med, as well as the med schedule that has just been created for that med. Note that this form also calls "get_med"info".

y. Added checkbox fields to the current meds model, with data type of :tinyint:

rails generate migration AddSunToMeds Sun00:tinyint Sun01:tinyint Sun02:tinyint Sun03:tinyint Sun04:tinyint Sun05:tinyint Sun06:tinyint Sun07:tinyint Sun08:tinyint Sun09:tinyint Sun10:tinyint Sun11:tinyint Sun12:tinyint Sun13:tinyint Sun14:tinyint Sun15:tinyint Sun16:tinyint Sun17:tinyint Sun18:tinyint Sun19:tinyint Sun20:tinyint Sun21:tinyint Sun22:tinyint Sun23:tinyint

rails generate migration AddMonToMeds Mon00:tinyint Mon01:tinyint Mon02:tinyint Mon03:tinyint Mon04:tinyint Mon05:tinyint Mon06:tinyint Mon07:tinyint Mon08:tinyint Mon09:tinyint Mon10:tinyint Mon11:tinyint Mon12:tinyint Mon13:tinyint Mon14:tinyint Mon15:tinyint Mon16:tinyint Mon17:tinyint Mon18:tinyint Mon19:tinyint Mon20:tinyint Mon21:tinyint Mon22:tinyint Mon23:tinyint

rails generate migration AddTueToMeds Tue00:tinyint Tue01:tinyint Tue02:tinyint Tue03:tinyint Tue04:tinyint Tue05:tinyint Tue06:tinyint Tue07:tinyint Tue08:tinyint Tue09:tinyint Tue10:tinyint Tue11:tinyint Tue12:tinyint Tue13:tinyint Tue14:tinyint Tue15:tinyint Tue16:tinyint Tue17:tinyint Tue18:tinyint Tue19:tinyint Tue20:tinyint Tue21:tinyint Tue22:tinyint Tue23:tinyint

rails generate migration AddWedToMeds Wed00:tinyint Wed01:tinyint Wed02:tinyint Wed03:tinyint Wed04:tinyint Wed05:tinyint Wed06:tinyint Wed07:tinyint Wed08:tinyint Wed09:tinyint Wed10:tinyint Wed11:tinyint Wed12:tinyint Wed13:tinyint Wed14:tinyint Wed15:tinyint Wed16:tinyint Wed17:tinyint Wed18:tinyint Wed19:tinyint Wed20:tinyint Wed21:tinyint Wed22:tinyint Wed23:tinyint

rails generate migration AddThuToMeds Thu00:tinyint Thu01:tinyint Thu02:tinyint Thu03:tinyint Thu04:tinyint Thu05:tinyint Thu06:tinyint Thu07:tinyint Thu08:tinyint Thu09:tinyint Thu10:tinyint Thu11:tinyint Thu12:tinyint Thu13:tinyint Thu14:tinyint Thu15:tinyint Thu16:tinyint Thu17:tinyint Thu18:tinyint Thu19:tinyint Thu20:tinyint Thu21:tinyint Thu22:tinyint Thu23:tinyint

rails generate migration AddFriToMeds Fri00:tinyint Fri01:tinyint Fri02:tinyint Fri03:tinyint Fri04:tinyint Fri05:tinyint Fri06:tinyint Fri07:tinyint Fri08:tinyint Fri09:tinyint Fri10:tinyint Fri11:tinyint Fri12:tinyint Fri13:tinyint Fri14:tinyint Fri15:tinyint Fri16:tinyint Fri17:tinyint Fri18:tinyint Fri19:tinyint Fri20:tinyint Fri21:tinyint

Fri22:tinyint Fri23:tinyint
rails generate migration AddSatToMeds Sat00:tinyint Sat01:tinyint Sat02:tinyint Sat03:tinyint Sat04:tinyint Sat05:tinyint Sat06:tinyint Sat07:tinyint Sat08:tinyint Sat09:tinyint Sat10:tinyint Sat11:tinyint Sat12:tinyint Sat13:tinyint Sat14:tinyint Sat15:tinyint Sat16:tinyint Sat17:tinyint Sat18:tinyint Sat19:tinyint Sat20:tinyint Sat21:tinyint Sat22:tinyint Sat23:tinyint
rails generate migration AddAsNeededToMeds asNeeded:tinyint
rake db:migrate

z. Edited *campers_controller.rb* and *meds_controller.rb* to add a before_filter to "time out" a session and to re-request QuickBase credentials after the specified time-out period has expired.

aa. Added a link to the bottom of each view used, to "Log out of QuickBase", which would then redirect to the QuickBase login screen.

ab. Edited *camper_meds/app/models/med.rb* to add "attr_accessible" entries for each checkbox-related attribute (i.e., `:Sun15`, `:Sun16`, `:Sun17`, etc.).

ac. Edited *camper_meds/app/views/show.html.erb* to add a check for the existence of each checkbox-related attribute, so that the script wouldn't error off when a non-existent method was checked (e.g., `:Sun00`, `Sun01`, etc.). This was done by using the `@med.respond_to?` directive.

ad. Edited *camper_meds/config/boot.rb* to define the global variable $login_ip.

ae. Edited *camper_meds/apps/controllers/qb_auths_controller.rb* to set the value of $login_ip to request.env['REMOTE_ADDR'] when a successful QuickBase authentication occurs, just prior to redirecting to the new_camper_url.

af. Edited *camper_meds/apps/views/qb_auths/new.html.erb* to display the IP address of the client, as reference.

ag. Edited *camper_meds/config/routes.rb* to add the following specific route to support a "logoff" directive in the qb_auths controller:
`match 'qb_auths/logoff', :controller => 'qb_auths', :action => 'logoff'`
This line was added immediately prior to the "`resources :qb_auths`" line.

ah. Issued the "`rake routes`" command. The following route was added as a result:
`qb_auths_logoff        /qb_auths/logoff(.:format)            qb_auths#logoff`

ai. Modified *camper_meds/app/controllers/qb_auths_controller.rb* to define "logoff" method. Modified all view scripts to redirect to `qb_auths_logoff_url` whenever the "Logoff from QuickBase" link is clicked on each page.

aj. Copied background image file for the web pages (background-1024x768.jpg) to *camper_meds/app/assets/images* directory. Also

copied the same background image file to the *camper_meds/public/assets* directory. Edited *camper_meds/app/assets/stylesheets/campers.css.scss* to add the following line:

```
body {background-image:url(/assets/background-1024x768.jpg);}
```

ak. `$ rake assets:precompile`

al. Changed the default home page to point to the "qb_auths/new" link, by doing the following:

    i. Renamed *camper_meds/public/index.html* to "index.html.old".

    ii. Added the following line to *camper_meds/config/routes.rb*:

```
root :to => 'qb_auths#new'
```

    iii. `$ rake routes`

am.   Tested: `$ rails server`

53. Set up Rails to use postgresql database:

a. Set administrative password for postgresql:

```
# su – postgres
$ psql template1
psql (8.4.11)
Type "help" for help.
template1=# ALTER USER postgres with encrypted password 'Jesus';
template1=# ^D
$ ^D
# /etc/init.d/postgresql restart
```

b. Installed libpq-dev:

```
# apt-get install libpq-dev
```

c. Edited *camper_meds/Gemfile* to replace:

```
gem 'sqlite3'
```

with:

```
gem 'pg'
```

d. `$ bundle install`

e. Edited camper_meds/config/database.yml to contain the following:

```
development:
adapter: postgresql
database: camper_meds_dev
username: postgres
password: Jesus
host: localhost

test:
adapter: postgresql
database: camper_meds_test
username: postgres
password: Jesus
host: localhost

production:
adapter: postgresql
database: camper_meds_live
username: postgres
```

```
password: Jesus
host: localhost
```

    f. Created database:
```
$ rake db:create
$ rake db:migrate
```
    g. Tested:
```
$ rails server
```
    h. Exploring postgresql:

        i. Databases are stored in the postgres user's directory, under the *8.4/main/base* directory path.

       ii. To see what database files correspond to which database names:
```
# su – postgres
$ psql template1
template1=# select oid,datname from pg_database order by
oid;
```
      iii. To exit from postgresql:
```
template1=# \q
```
54. Set up Heroku to host this app:

    a. `$ gem install heroku`

    b. `$ ssh-keygen –t rsa` □ *did not need to do this over again*

    c. `$ heroku keys:add` □ *did not need to do this over again*

    d. `$ heroku keys`

       (and validated that keys were listed)

    e. To get around errors indicating that CSS files were not precompiled, did the following to rectify this:

        i. Edited *camper_meds/config/environments/production.rb* to set "config.assets.compile" to "true".

       ii. `$ rake assets:precompile --trace RAILS_ENV=production`

    f. Set up git to track the camper_meds app:
```
$ cd camper_meds
$ rm –rf .git
$ git init
$ git add .
$ git commit -m "new app"
```
    g. `$ heroku create`

       (Heroku created an app named "warm-fog-1932".)

    h. `$ git push heroku master`

    i. Encountered errors since Heroku uses PostgreSQL whereas we used MySQL locally when developing the code. Because of this, changed all occurrences of "tinyint" to "smallint" in the db/migrate scripts, and then checked the changes into git:
```
$ git commit –a
```
    j. Added directory containing background images to git repository:
```
$ git add public/assets
$ git commit –m "compiled assets"
```
    k. `$ git push heroku`

    l. `$ heroku rake db:migrate`

    m. Tested by browsing to:
          http://warm-fog-1932.heroku.com/campers/new
    n. Enabled "Piggyback SSL" add-on in my Heroku account (needed to verify my account by entering my credit card information).
    o. Tested the SSL encryption by browsing to:
          https://warm-fog-1932.heroku.com/campers/new
    p. Emptied the PostgreSQL database on Heroku:
```
$ heroku rake db:reset
```

55. Made changes to various modules to support daily "as needed" selections for camper care group administered meds. Also needed to add *db/migrate* directory to be monitored by "git" (`git add db/migrate`). Modules modified were as follows:
    a. app/models/med.rb
    b. app/views/meds/edit.html.erb
    c. app/views/meds/show.html.erb
    d. config/boot.rb
    e. db/migrate/20120819041033_add_daily_as_needed_to_meds.rb (added by issuing `rails generate migration AddDailyAsNeededToMeds` command)

56.   (04.08.2013) Edited /etc/sudoers to add "bruce" account with access to all privileges.

57.   Updated rvm from "bruce" account:
```
$ rvm get stable
$ rvm autolibs enable
$ rvm requirements
```
(rvm installed missing required packages automatically)
```
$ rvm reload
```

58. Updated Ruby to the latest version of v1.9.3 (1.9.3-p392):
```
$ rvm install 1.9.3
$ rvm --default ruby-1.9.3-p392
```

59. Reinstalled Rails (v3.2.13) in new Ruby instance:
```
$ gem install rails
```

60. Reinstalled QuickBase client (v1.0.24) and httpcleint (v2.3.3):
```
$ gem install quickbase_client
$ gem install httpclient
```

61. Changed Gemfile in "camper_meds" directory to change Rails version to 3.2.13.

62. Ran "bundle update" to update gems:
```
$ cd camper_meds
$ bundle update
```

63.