

Announcements

PCBs are in the mail, expected Wednesday

[Rebecca's long term data](#)

3D printing appointment doodle...

[Campus COVID testing](#)

Progress update — Matthew White

Continuation of web scripting example

Web scripting is just dynamically generating web "pages".

Our `CosmicRunStart` script dynamically generated a page.

Our `CosmicRunPlot` script dynamically generated plots for the page.

A "CGI script" is just a way to dynamically generate a "page" when requested by a browser.

Web server executes as the "www-data" user.

`/var/www/html`

`/usr/lib/cgi-bin`

We will make a "control" page that has actions for the main commands and a display of standard information.

Actions are:

Start Run, Stop Run, Configure, Comment, Reset

Desired information is:

Display of current run state and run number

Display of configuration information

List of all existing runs

Display of run summary plots

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While we could dump all of that information on the page, it would be cluttered and hard to use on a small screen, ie a phone.

So, let's design it to be "clean" but extendable.

cosmicpids: 23:54 Run 45, 3211 events, 23.2 Hz

Stop Run

Comment:

Configure:

Display:

Frame with displayed information...

We can do this by having a single CGI that displays the form

And it will call itself from the form to take actions and then redisplay the form.

It can also be configured to refresh every minute.

The CGI script can't write outside its sandbox, so we need it to just record the commands somewhere in its sandbox.

A separate "Run supervisor" process will read those commands and execute them. That supervisor process can run continuously in the background, as a "daemon".

You can see all such processes with:

```
ps aux
```

We will use the crontab tool for this.

I will walk through the scripts, but you should download it to your pi and play along.

Do that with:

```
cd /home/pi/150/bin/
curl -s http://dstuart.physics.ucsb.edu/Lgbk/pub/E40915.dir/CosmicSupervisor > CosmicSupervisor
chmod +x CosmicSupervisor
curl -s http://dstuart.physics.ucsb.edu/Lgbk/pub/E40915.dir/mycrontab > mycrontab
sudo curl -s http://dstuart.physics.ucsb.edu/Lgbk/pub/E40915.dir/cgi/files.tgz > files.tgz
cd /usr/lib/cgi-bin/
sudo tar xzf /home/pi/150/bin/files.tgz
sudo chown root.root Cosmic CosmicForm CosmicCommand
sudo chmod +x Cosmic
sudo chmod +x CosmicForm
sudo chmod +x CosmicCommand
sudo mkdir cmds
sudo chown www-data cmds
```

But maybe first you want to backup everything from your pi. Do that on your laptop with:

```
mkdir ~/pibackup200225
cd ~/pibackup200225
scp -r pi@MYPI.local:/home/pi/150 ./
scp -r pi@MYPI.local:/usr/lib/cgi-bin ./
scp -r pi@MYPI.local:/var/www/html/index.html ./
cd -
```

Homework assignment:

Play with this to gain familiarity.

To make it specific, modify the web control panel so that each of the Display commands are separate buttons rather than a pull-down list.

Due in ELog by Friday next week.