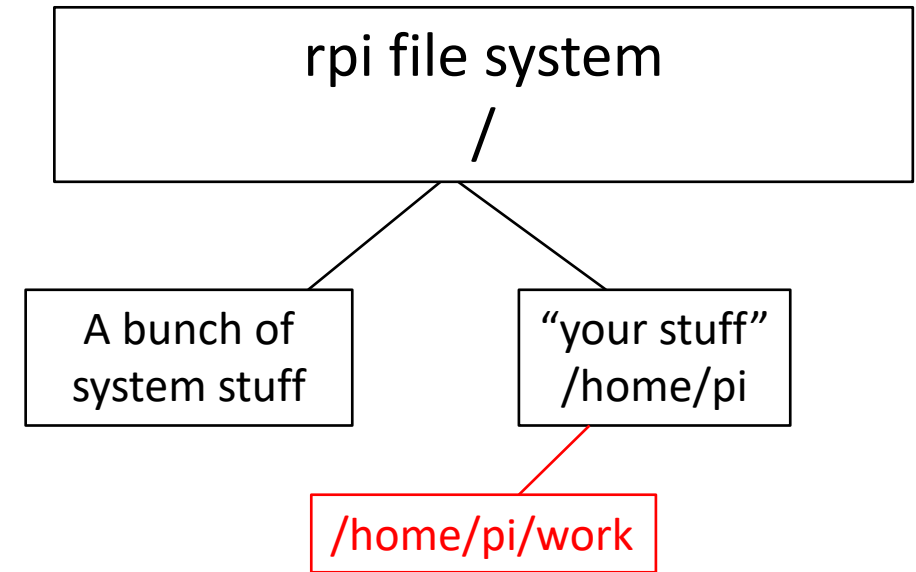
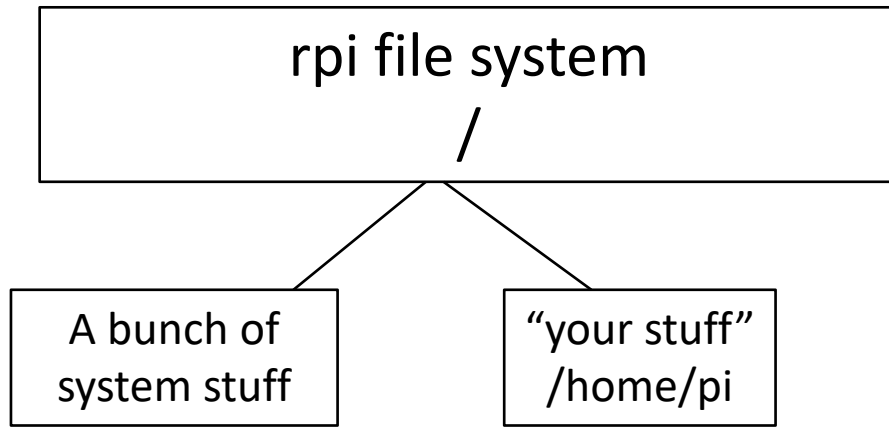


- You would not think of putting your files anywhere except under /home/pi
 - Right?
- However /home/pi is not really entirely yours
- The update script will change things in /home/pi
- Can you trust the update script to not mess with your files?



- You would not think of putting your files anywhere except under `/home/pi`
 - Right?
- However `/home/pi` is not really entirely yours
- The update script will change things in `/home/pi`
- Can you trust the update script to not mess with your files?

- Separate your work from the installation stuff in `/home/pi`
 - e.g. in subdirectory `/home/pi/work`

More house-keeping “advice”

- Keep your homework sets separate
 - e.g. subdirectories `/homes/pi/work/p129hwk/hwk1`
- Put the pdf file with the homework questions in the appropriate subdirectory
 - This way you will know later what you were trying to do
- I post my homework solutions
 - Download them.
 - **Look at them.**
 - Save them, e.g., in `/homes/pi/p129/hwk1/ccSolutions`
- Backup your work. These SD cards are not very robust. It is (relatively) easy to setup a fresh rpi (I can help), but you do not want to lose your work
 - `cd /home/pi`
 - `tar cvfz backupFile.tgz work/`
 - Save `backupFile.tgz` on a memory stick.....even after this quarter is over
 - You may encounter a similar problem next week, next month, next year
 - Write once, use often (re-use, copy, recycle.....)

Homework etiquette

- See mail from Jenny, follow the instructions
- In addition
 - Your code must run with python3 on the rpi as configured
 - You want to use packages that are not installed, let me know
 - Do not install other packages with pip/pip3

Good coding practices (1)

- Comment your code
 - You want to be able to understand it tomorrow, next week, next year
 - You want others to understand it
 - Include your name and date
 - In a professional environment you will be sharing code
- The examples that I posted and my solutions have a lot of comments, perhaps more than necessary
 - Because they are meant to teach you and for you to understand
 - Even then, talking to some of you, they are not always enough
 - Look at them. They are there for you.

Good coding practices (2)

- Make your code modular, use (and re-use) functions
- Use meaningful variable names
 - xx, xx2, aa, bb... **BAD**
 - time, timeSquared, firstGoodOne... **GOOD**
- Do not sprinkle your code with "hardwired" constants
 - see next page

```
.....  
f = open('somFileName.txt', 'r')  
....  
g = open('someOtherFileName.txt', 'w')  
.....  
x = np.random.rand(1000)  
.....  
bins = np.linspace(0.,20.,101)  
contents, binEdges, _ = ax.Hist(x,bins)  
.....  
ax.set_xlim(0., 20.)
```

Here if you want to change parameters
you have to hunt through the code.
It is not very readable

Parameters
clearly spelled out
easy to find

```
inFile = 'someFileName.txt'  
outFile = 'someOtherFileName.txt'  
nPoints = 1000  
.....  
fileIn = open(inFile, 'r')  
....  
fileOut = open(outFile, 'w')  
.....  
x = np.random.rand(nPoints)  
.....  
nbins = 100  
xmin = 0.  
xmax = 20.  
bins = np.linspace(xmin, xmax, nbins+1)  
contents, binEdges, _ = ax.Hist(x,bins)  
.....  
ax.set_xlim(binEdges[0], binEdges[-1])
```

Command Line (CL) vs. File Manager (FL)

- Get used to the CL, forget the FL
- Why?
 1. It is “the unix way”
 2. It is actually much faster once you get used to it
 3. Unix/Linux is intrinsically a multi user system
 - You are likely to be using systems “remotely”, ie, not just your desktop/laptop
 - I have never seen anyone launch a FM “remotely”, I am not sure that it will even work, but if it does:
 - It is likely to be very slow over an internet connection over X11
 - Different systems have different FM, it will be different from what you are used to, and the command to launch depends on what “desktop” is installed on the “remote” computer
 - A “remote” server may not even have a FM installed at all
 - (Professor Lipman had removed the FM for the phis 129 rpi...I told him to put it back, but I think he was right)