Basic Information about the Participants

- 30 responses to the pre-workshop survey
- 18 responses to the post-workshop survey
- Huge range of ages 20 - 56
- A good split of male and female participants (Or those who filled out the survey…)

![Age Distribution](image)

![Gender Distribution](image)
Basic Information about the Participants

- A wide range of career levels, surprisingly quite a few Faculty/Staff
  (A large amount of senior PhD students who probably know the material...)

- Quite a few different experiments which is good to see.
  Mostly dominated by CMS
Experience: Bash/Shell

Have you used Unix (e.g. shell, bash and scripting) before in the past?
30 responses

- Yes, most days: 76.7%
- Yes, a little: 16.7%
- Yes but just to try: 7.6%
- No: 0%

Have you taken a Unix/Shell class in the past? (E.g at your university or another tutorial)
30 responses

- Yes: 26.7%
- No: 26.7%
- Not a dedicated class but have been taught a little: 46.7%

How comfortable are you with the following topics in the Shell/Bash?

- Navigation Commands (ls, cd, cp, mv)
- Command Flags
- Man pages
- The $PATH
- Wildcards
- Piping
- If/Control Statements and Loops in Bash

- Never heard of it
- Used it once
- Very familiar

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- 16
- 17
- 18
- 19
- 20
Experience: Version Control/Git

Have you used Git, Gitlab or Github before in the past? (30 responses)

Have you taken a Git class in the past? (E.g. at your university or another tutorial) (30 responses)

How comfortable are you with the following topics in Git?
Experience: Python

Have you used Python before in the past?
30 responses

- Yes, most days: 16.7%
- Yes, a little: 30%
- Yes but just to try: 13.3%
- No: 40%

Have you been taught Python in the past? (E.g at your university or another tutorial)
30 responses

- Yes: 66.7%
- No: 20%
- Not a dedicated class but have been taught a little: 13.3%

How comfortable are you with the following topics in Python?

- Loops
- Functions
- Reading in files
- Collections (E.g. dictionaries, lists, tuples)
- Handling Errors and Exceptions
- Classes
- Passing command line arguments
Experience: Notebook, pyROOT and uproot

Have you used a notebook before in the past? (E.g. Jupyter, Swan, binder etc)
30 responses

- Yes: 56.7%
- No: 43.3%

Do you have any experience using uproot?
30 responses

- Yes: 86.7%
- No: 10%

Have you ever used ROOT in Python before?
30 responses

- Yes: 60%
- No: 40%

How confident are you in your knowledge and abilities when using Root?
30 responses

- 1: 11 (36.7%)
- 2: 5 (16.7%)
- 3: 3 (10%)
- 4: 8 (26.7%)
- 5: 3 (10%)
Pre vs Post Comparisons? Successful?

- Two HEP surveys sent out; one before, one after.
- Additionally, asked same anonymous (but unique) identifier to the Carpentries survey. (In principle allows correlation between HEP and Carpentries, but note that Carpentries information is not for public consumption).

- A couple of slides follow on some general observations
- ~ 17 (joint) responses may be too few for meaningful conclusions, which could not be gathered from the aggregated information?
- Certainly propose to continue with this approach, but dedicate more time to the questionnaire to maximising it’s use
  - We’re (me...) are not generally used to questionnaire design principles … training … ?
Pre vs Post Comparisons? Successful?

- 30 pre-survey responses; 18 post, 15 common to both.
- Some difference in the demographic wrt all responses:
- Similar <age> (32 all, 31 both)
- Before / after ‘Confidence’:

<table>
<thead>
<tr>
<th>Name</th>
<th>pre</th>
<th>post</th>
<th>difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in Shell</td>
<td>2.7</td>
<td>3.9</td>
<td>1.1</td>
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<tr>
<td>Confidence Python</td>
<td>1.9</td>
<td>3.2</td>
<td>1.3</td>
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<tr>
<td>Confidence Git</td>
<td>2.1</td>
<td>3.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Confidence ROOT</td>
<td>2.8</td>
<td>3.8</td>
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</table>

- Average increase of at least 1 ‘unit of confidence’ across the activities
## Pre vs Post Comparisons? Successful?

- Compare pre-confidence to post assessment of material level

<table>
<thead>
<tr>
<th>Level: Shell</th>
<th>1 - Too easy and basic</th>
<th>Just right</th>
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<tbody>
<tr>
<td>Confidence: Shell</td>
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<table>
<thead>
<tr>
<th>Level: Python</th>
<th>1 - Too easy and basic</th>
<th>Just right</th>
<th>Too advanced</th>
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<td>Confidence Python</td>
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<tr>
<th>Level: Git</th>
<th>1 - Too easy and basic</th>
<th>Just right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence Git-pre</td>
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Pre vs Post Comparisons? Successful?

- Maximum use from pre / post information (using unique IDs) from more stratified insights (e.g. rather than comparing overall means, etc.)
- Confidence in ROOT (1 least, 5 most):

<table>
<thead>
<tr>
<th>Pre</th>
<th>Confidence ROOT</th>
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- All ‘1’s and ‘2’s felt confidence increased.
- More advanced people saw smaller improvements in confidence.
- Nobody became less confident.
Comments, Improvements and for the Future...

“Everyone was lovely”

“Good speakers & material, Really helpful helpers, Definitely not enough time to really benefit from the Python sessions”

“Thanks for the coffea breaks as well :)

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it was very helpful to follow all examples with tutors

Too dense course for a beginner. Unbalanced attention to specific topics, for example, the ROOT is shown very, very superficially. There is a desire to lengthen the duration of the entire course (or separate to longer specific parts) to have enough time for a bit deep understanding. Since the main goal of the course is to introduce people to different HEP software, in principle, you could not do more during existing time. You did great job! Thank you guys!

Lessons and material were really great, so compliments to the tutors! However, I feel that in the Unix class, too much time was spent on the basics (ls, man, etc...) while it would have been really great to go through the bash scripts. This might also be due to the fact that I was already able to use unix. On the other topics (Python, Git...) I was a novice and I found the lessons very nice. I cannot say that now I know python, but certainly I now have a feeling of its main features and I think that if I want to really learn it, I can simply go through the material of your class. If this was the goal of your class, then you achieved it! Same consideration apply to all the tools you taught (jupyter, swan...). All in all, the experience was really great!
Comments, Improvements and for the Future...

Unix: less time on very basics (everybody knows ls, cp, etc.), more time on more advanced stuff
Python: At least 2 full days to give the speaker the time to explain and enough time for exercises
Git: alright
Pyroot & RDataFrames: make it more interactive
Uproot: alright
It would be good to have one last day to develop a full (small) project using all we have learned, building teams of 2 people for example.

“Make it longer! I wish this was a week-long school, I learned so much and wish I’d had this opportunity years ago!”

“Separate course. I think for understanding it’s better to cover less optics but in more detailed manner.”

“It would help to have one more half day, so that a bit more of time can be used in the classes (not increasing the amount of information but allowing more time to try on our own)

We are making plans to develop tutorials on more advanced and specialized topics. Please rate your interest in attending future tutorials on the following topics:
Backup: Pre (left) vs. Post (right)

How confident are you in your knowledge and abilities when using the Shell/Bash?
30 responses

- 4 (13.3%)
- 6 (20%)
- 8 (26.7%)
- 11 (36.7%)
- 1 (3.3%)

How confident are you in your knowledge and abilities when using the Shell/Bash after the workshop?
18 responses

- 0 (0%)
- 0 (0%)
- 5 (27.8%)
- 10 (55.6%)
- 3 (16.7%)

How confident are you in your knowledge and abilities when using Git?
30 responses

- 8 (26.7%)
- 11 (36.7%)
- 9 (30%)
- 2 (6.7%)
- 0 (0%)

How confident are you in your knowledge and abilities when using Git after the workshop?
18 responses

- 0 (0%)
- 1 (5.6%)
- 5 (27.8%)
- 11 (61.1%)
- 1 (5.6%)
Backup: Pre (left) vs. Post (right)

How confident are you in your knowledge and abilities when using Python?
30 responses

How confident are you in your knowledge and abilities when using Python after the workshop?
18 responses

How confident are you in your knowledge and abilities when using Root?
30 responses

How confident are you in your knowledge and abilities when using ROOT after the workshop?
18 responses