

# *The recent study report*

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*This report is about the work done in the last two weeks. At first, We learned the basic skills commands and installed lazygit. Furthermore, we went on studying latex and leaned how to use the code. At last, we are prepared to replace bash by zsh and change the type of terminal.*

*TODO LIST:*

- 1. Learn basic skills on Git.(Done)*
- 2. Learn basic skills on Latex.(Done)*
- 3. Learn how to use the code.(Done)*
- 4. Learn basic skills on Paraview.(Done)*

## *1 The Basics of git*

*Over the course of these two weeks, we learned the basic commands of Git and install lazygit on our computer.*

### *1.1 Install Git*

*sudo apt install git-all*

### *1.2 Configure and initialize a repository*

*cd CTC*

*mkdir learngit*

*cd learngit*

*"git init" can make "learngit" a repository that git can manage; this is a empty Git repository*

*git init*

### *1.3 Add file to repository*

*gedit*

*(Git is a version control system.*

*Git is free software.) Save file as readme.txt*

*git add readme.txt*

*-m is followed by a description of this submission*

*git commit -m "wrote a readme file"*

### *1.4 modify the content of readme.txt*

*(Git is a distributed version control system.*

*Git is free software.)*

*git status*

*(Changes not staged for commit:*

(use "git add <file>..." to update what will be committed)  
 (use "git checkout – <file>..." to discard changes in working directory)  
 modified: readme.txt

no changes added to commit (use "git add" and/or "git commit -a")

For viewing readme.txt What are the specific changes

git diff readme.txt

(diff –git a/readme.txt b/readme.txt

index 46d49bf..9247db6 100644

— a/readme.txt

+++ b/readme.txt

@@ -1,2 +1,2 @@

-Git is a version control system.

+Git is a distributed version control system.

Git is free software.)

Then repeat step 3 add new file to repository

## 1.5 View history

git log

(commit d4b92af9577beb5567d3e736c79af54a6a308062d (HEAD -> master)

Author: cch <cch@debian.cch>

Date: Tue Dec 15 21:52:41 2020 +0800

append GPL

commit 8e596ca8027371c31f154160c080c713dc49e476

Author: cch <cch@debian.cch>

Date: Tue Dec 15 20:53:37 2020 +0800

add distributed

commit cf6e4e01ede9660b0177c183ae3b9518951219b6

Author: cch <cch@debian.cch>

Date: Tue Dec 15 20:45:31 2020 +0800

wrote a readme file)

We want to roll back the current version of "append GPL" to the previous version of "add distributed"

git reset –hard HEAD<sup>(HEAD<sup>X</sup> X stands for version number)</sup>

git reset –hard d4b92af (Go back to the corresponding version)

git reflog (The command git reflog is used to record every command you make)

## 1.6 Working Directory" and "Repository

The "git add" command actually puts all the changes to be committed into the stage, and then executes "git commit" to commit all the changes in the staging area to the branch at one time.

For each modification, if you do not add it to the staging area, it will not be added to the commit.

## 1.7 Revoking the amendment

"git checkout – file "can discard changes to the workspace

The command "git reset head file" can un stage the modification of the temporary storage area and put it back into the workspace

## 1.8 Delete file

`rm test.txt` (delete files in the folder)

`git rm test.txt` (delete files in the repository)

`git checkout -- test.txt` (Restore the deleted files to the latest version)

## 1.9 "git push" and "git pull"

## 1.10 Create and merge branches

View branch: `git branch`

Create branch: `git branch < name >`

Switch branches: `git checkout < name >`

Create + switch branch: `git checkout -b < name >`

Merge a branch to the current branch: `git merge < name >`

Delete branch: `git branch -d < name >`

# 2 Processing Data

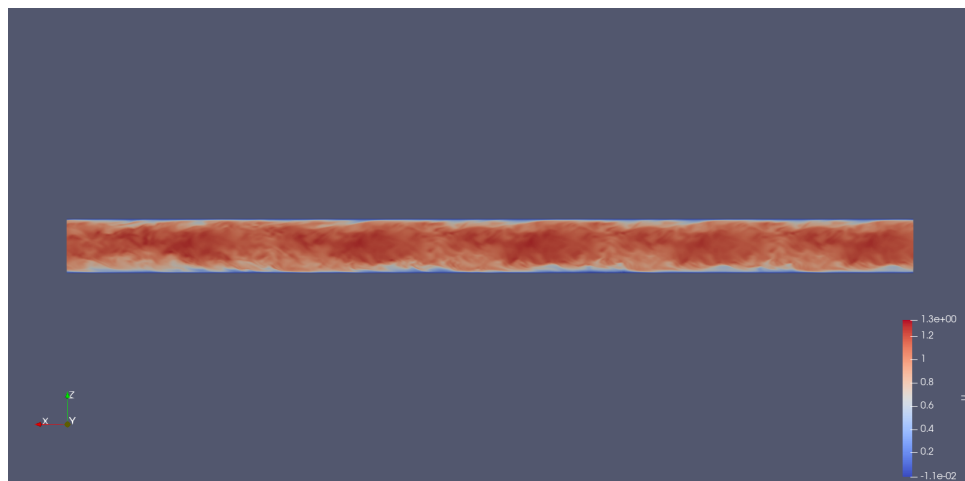
In the past two weeks, we have learned how to process data with code and draw pictures with paraview.

## 2.1 Extract Data

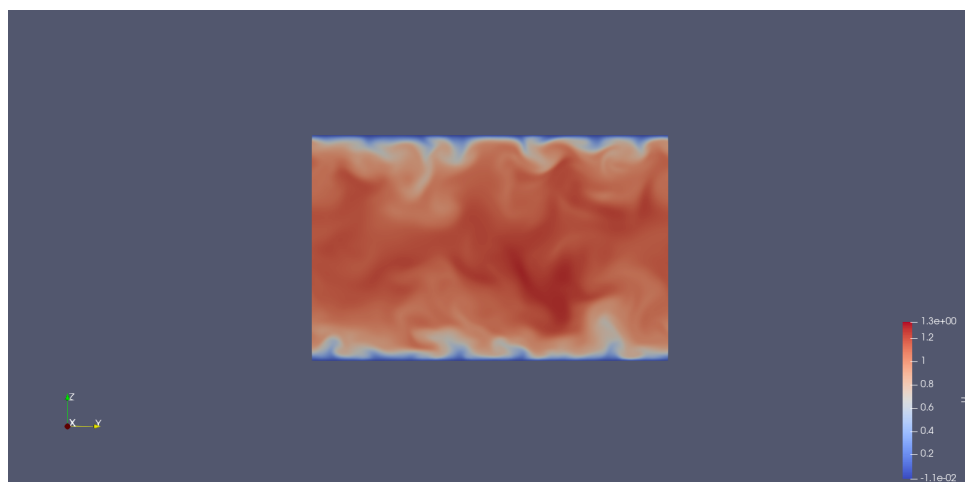
1	Statistics of Retain:197.69423788613042 Rem:3173.333841066748				
2	C1	C2	C3	C4	C5
3	zc	zplu	u	v	w
4					
5					
6	0.000000	0.000000	0.000000e+00	0.000000e+00	0.000000e+00
7	0.001580	0.296541	2.965549e-01	-1.308239e-04	3.799572e-07
8	0.003050	0.662869	6.624878e-01	-2.663781e-04	1.026693e-06
9	0.004650	0.913305	9.177587e-01	-4.069313e-04	1.964889e-06
10	0.006304	1.246183	1.242792e+00	-5.526649e-04	3.213899e-06
11	0.008012	1.583848	1.577556e+00	-7.034328e-04	4.799460e-06
12	0.009776	1.932657	1.922942e+00	-8.585964e-04	6.788518e-06
13	0.011599	2.292976	2.276113e+00	-1.016795e-03	8.979700e-06
14	0.013481	2.665185	2.639491e+00	-1.175741e-03	1.161389e-05
15	0.015426	3.049678	3.011742e+00	-1.332083e-03	1.461495e-05
16	0.017435	3.446859	3.392257e+00	-1.481368e-03	1.788379e-05
17	0.019511	3.857146	3.780250e+00	-1.618164e-03	2.173632e-05
18	0.021655	4.280973	4.174756e+00	-1.736351e-03	2.585960e-05
19	0.023869	4.718787	4.574640e+00	-1.829597e-03	3.036424e-05
20	0.026157	5.171048	4.978616e+00	-1.891993e-03	3.526271e-05
21	0.028520	5.638234	5.385272e+00	-1.918786e-03	4.057699e-05
22	0.030961	6.120837	5.793106e+00	-1.907146e-03	4.633964e-05
23	0.033483	6.619366	6.206535e+00	-1.856874e-03	5.258070e-05
24	0.036088	7.134347	6.605991e+00	-1.770988e-03	5.937107e-05
25	0.038779	7.666321	7.007902e+00	-1.656119e-03	6.672723e-05
26	0.041556	8.215851	7.404759e+00	-1.522626e-03	7.469123e-05
27	0.044430	8.783516	7.795141e+00	-1.384651e-03	8.328220e-05
28	0.047396	9.369913	8.177747e+00	-1.259313e-03	9.258039e-05
29	0.050460	9.975662	8.551417e+00	-1.166297e-03	1.022266e-04
30	0.053625	10.601400	8.915146e+00	-1.120586e-03	1.127265e-04
31	0.056895	11.247788	9.268098e+00	-1.161170e-03	1.236580e-04
32	0.060272	11.915506	9.609802e+00	-1.289592e-03	1.350783e-04
33	0.063761	12.605259	9.939153e+00	-1.528524e-03	1.469424e-04
34	0.067366	13.317774	1.025640e+01	-1.890521e-03	1.591863e-04
35	0.071089	14.053802	1.056115e+01	-2.383096e-03	1.717075e-04
36	0.074934	14.814119	1.085336e+01	-3.008289e-03	1.843116e-04
37	0.078907	15.599526	1.113291e+01	-3.762854e-03	1.967142e-04
38	0.083011	16.410852	1.140010e+01	-4.639123e-03	2.085510e-04
39	0.087251	17.248951	1.165508e+01	-5.626356e-03	2.194490e-04
40	0.091630	18.114708	1.189814e+01	-6.721285e-03	2.291260e-04
41	0.096154	19.009034	1.212962e+01	-7.858759e-03	2.374896e-04
42	0.100827	19.932874	1.234991e+01	-9.127719e-03	2.446834e-04
43	0.105654	20.887208	1.255945e+01	-1.043072e-02	2.510866e-04
44	0.110641	21.873019	1.275870e+01	-1.177786e-02	2.576222e-04
45	0.115792	22.891370	1.294817e+01	-1.315272e-02	2.638970e-04
46	0.121113	23.943327	1.312839e+01	-1.453786e-02	2.717573e-04
47	0.126610	25.029998	1.329991e+01	-1.591082e-02	2.816667e-04
48	0.132288	26.152529	1.346329e+01	-1.727030e-02	2.944839e-04
49	0.138153	27.312104	1.361912e+01	-1.858173e-02	3.110397e-04
50	0.144212	28.509945	1.376801e+01	-1.983046e-02	3.320992e-04
51	0.150471	29.747314	1.391056e+01	-2.099575e-02	3.577728e-04
52	0.156937	31.025517	1.404735e+01	-2.206276e-02	3.880218e-04
53	0.163616	32.345900	1.417891e+01	-2.303111e-02	4.220123e-04
54	0.170515	33.709856	1.430571e+01	-2.392195e-02	4.581717e-04

Figure 1: Velocity in diffent directios

## 2.2 Draw pictures



(a) Distribution of velocity  $u$  in XZ section



(b) Distribution of velocity  $u$  in YZ section

Figure 2: Distribution of velocity  $u$  in different sections