Ethann PENCOLE

Jhoneyd MECHAKRA

Rindra RAKOTONIRINA

C-Wire project MI5_F: Report

We started the project the week of December 2, 2024, we learned the essential information, for the c program and the Shell script in particular what was expected as a priority.

We divided ourselves as follows: Ethann worked on the Shell script

Jhoneyd and Rindra on the c code

The first step was to create the GitHub directory, Rindra took care of it.

Then he created a branch for him and Ethann created a branch for him.

Jhoneyd is not very familiar with GitHub he shared his progress with us during the TD sessions.

It is the Shell script that began to be created starting with the function that tests the arguments

Then the functions that will be chosen according to the type of arguments given were created in order to create temporary sorted files to make it easier for the c code, a search must have been necessary to find and correctly use the 'awk' function as well as the 'sed' function.

Then in the script we check the presence of the 'tmp' and 'graphs' directories, we delete their contents if they exist otherwise, we create them.

Then we implemented the command to copy the data file transmitted as an argument while calculating the time taken to make this copy.

Then we have the call to the function that chooses the right stations to process based on the arguments and that creates a temporary file sorted with the id of the stations that interest us, their capacities and their consumptions.

Then we call the functions that will execute the program c.

The functions in c are the basic functions for the AVL, the insertion function, right, left, single, double rotation, the balancing function, search.

The functions have been adapted for stations that have an id, a capacity and a consumption

The paths in the AVL, the insertion is done according to the id of the station.

Then we implemented the functions to open a file.

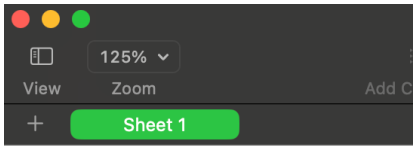
Then the final function makes sure to browse the temporary file given by the Shell script then we retrieve the data, if the station already exists, we add the data to the already existing station, if it does not exist, we create a station with the values retrieved previously.

The final AVL is browsed then its values will be placed in a file.

Then the AVL we call the function to free the AVL.

After creating the output file, we created the file that will be placed in the 'tests/' directory according to the parameters entered and if a plant has been specified.

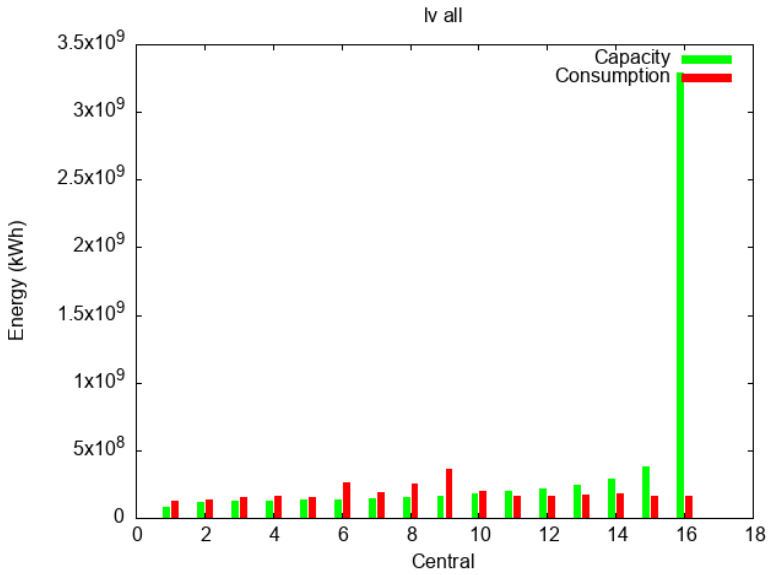
Then we wrote the functions useful for creating histograms using the gnuplot documentation.



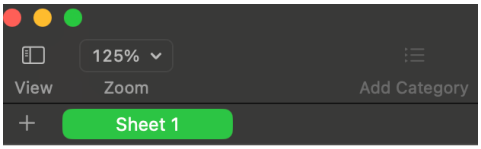
Here are some examples that we were able to obtain with our program:

lv_all

lv station:Capacity:Consuption all
15:85799285:126377037
12:122352561:135865532
14:122456466:156085333
4:130918331:165708561
5:131833110:154952517
9:132508986:258728244
11:148178856:191674831
8:152279330:250466342
6:161908098:364272992
13:182709668:195738987
10:200301465:162059108
7:219778584:165184256
1:241999040:171359043
3:291629372:182429162
2:382635838:161573683
16:3292711010:162638731



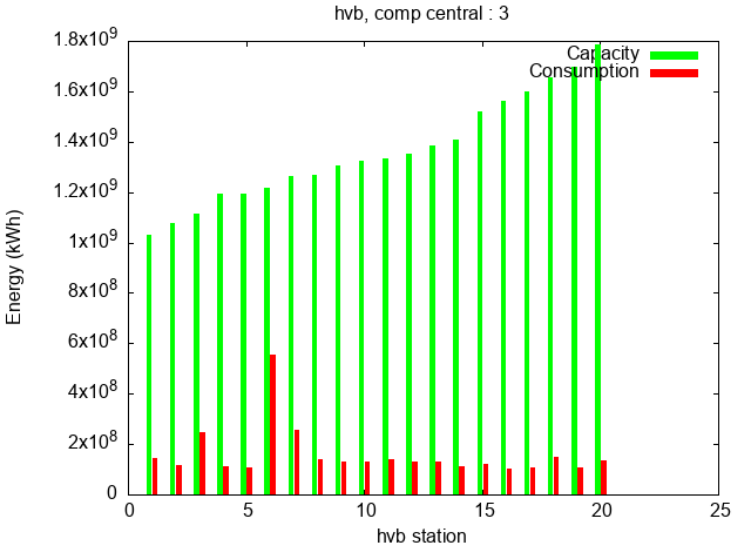
Command = 'bash c-wire.sh /Users/ethann/Desktop/c-wire_v00.dat lv all'

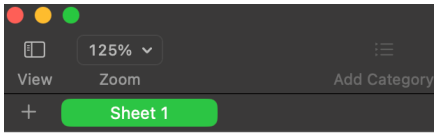


Command = ‘bash c-wire.sh /Users/ethann/Desktop/c-wire_v25.dat hvb comp 3’

hvb_comp_3

hvb station:Capacity:Consuption comp
51:1030602310:145148567
49:1076969353:116980993
64:1114052135:249087813
60:1194518840:112734456
54:1195228049:106635354
52:1216900553:554410208
63:1262941066:254491931
50:1269781112:142213967
58:1305821061:128763399
62:1322270276:131401543
57:1335331690:140270786
48:1354004054:130922440
59:1386786977:128885898
61:1409247760:112381751
65:1520404881:123468772
47:1561952785:104826131
53:1597231222:104970553
56:1656204253:148407623
55:1695368123:105015461
46:1784785254:133194083





Command = ‘bash c-wire.sh /Users/ethann/Desktop/c-wire_v25.dat hva comp’

hva_comp

hva station:Capacity:Consuption comp
443:68282799:59449183
471:72122876:67376424
440:74864466:82895637
475:75559162:86704972
439:79099721:65453490
386:79386375:70272819
472:79915994:84108536
474:82889642:50619413
408:84038045:66130164
387:88181852:79881616
489:88938392:71574691
445:89660231:62371569
473:91647312:70412988
470:95938561:76173602
441:97511559:80845138
130:97575362:82208767
363:98023687:69854627
171:98299749:79521232
415:98439875:53351625
494:98930863:48926637
442:101646465:54134045
480:101780237:56754492
493:102319809:52817823
169:103430734:62339304
413:103502441:82258135
456:106242764:66474646
478:106577613:63372730