

CSE344 – System Programming - Homework #2 Report

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1. How Did I Solve The Question?

To solve the problem, I control the command line arguments to determine whether they are valid or not. After I get the input file, I read it in read mode. I read the file char by char and I fill them into two dimensional char array to hold input coordinates. After the ten input has come, I create a new process and send them the coordinates and child process id (R_x) as a environmental variable. In child process, I create a coordinate struct which holds three dimension and two dimensional coordinate array. I hold the ten position in it and I calculate the covariance matrixes. Then, I write them into output file. As a three dimensional matrix and their ID's. After the all process are done, I read the output file and compute the distances according to Frobenius norm. After that, I hold the Frobenius norms and their ID's into arrays and I found the minimum distance.

2. My Design Decisions

I design a coordinate struct to holds coordinates easily. I've locked the files when I writing in child process. I've create output file when program is start to clear it.

3. Which requirements that I achieved

I think I achived almost all the requirements. However, I may not have been able to achieve some requirements.

4. Example Output

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Process P reading file.txt
Created R_0 with (103,104,106),(102,115,107),(97,108,-59),(-97,105,13),(10,100,119),(32,53,49),(97,32,100),(53,97,119),(100,32,54),(97,115,50)
Created R_1 with (48,51,97),(32,100,51),(97,115,13),(10,100,32),(97,13,10),(100,50,97),(115,49,100),(53,50,48),(97,32,44),(100,48,97)
Created R_2 with (50,115,53),(49,100,115),(50,100,100),(32,50,97),(115,100,32),(53,50,115),(100,54,51),(97,115,100),(100,13,10),(13,10,13)
Created R_3 with (10,32,100),(53,115,97),(53,100,13),(10,97,115),(49,100,32),(53,115,100),(53,32,49),(53,100,115),(49,53,100),(32,97,53)
Created R_6 with (97,115,32),(100,49,115),(100,53,97),(115,49,100),(13,10,53),(100,49,115),(100,106,-60),(-79,111,52),(112,-60,-97),(51,113,-61)
Created R_4 with (100,32,97),(49,100,53),(13,10,32),(49,53,100),(115,97,13),(10,32,49),(100,50,115),(49,53,100),(97,13,10),(100,32,53)
Created R_7 with (-68,101,13),(10,97,100),(115,100,115),(32,100,50),(13,10,49),(13,10,50),(49,51,49),(13,10,51),(13,10,50),(49,51,13)
Created R_5 with (49,13,10),(115,100,49),(53,97,32),(53,100,49),(115,97,13),(10,100,32),(49,53,100),(115,49,97),(13,10,100),(32,100,49)
Created R_8 with (10,50,49),(32,51,13),(10,50,32),(51,50,13),(10,49,51),(49,13,10),(50,51,13),(10,49,52),(13,10,50),(52,13,10)
Reached EOF, collecting outputs from output.txt
The closest 2 matrices are R_1 and R_4, and their distance is 9.963
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