GIT Department of Computer Engineering CSE 344 – Spring 2022

Homowork 2 #Report

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1-How Did I This Problem

First, I created my output files, argument count, and error handlers for the arrays I created dynamically. After that, the main problem was to fork() after every 10 coordinates I got from the input file and do the calculations in the Child process file with **Execve()** with the child I created. I created a child at 10 coordinates and sent these coordinates to the file named child.c as environment variable and I performed the matrix creation process with the ascii values of the 10 coordinates I sent in the file named child.c. Then I printed this matrix that I created to the output file so that it can be read later. And I continued this process until I ran out of coordinates in the input file. So I blocked access to the file at the same time by **locking** the file every time I opened the output file and unlocking it after the write was finished. After I finished the coordinates in the input file, I read the data in the main output file and kept all the matrices. I calculated the Frobenius norm. I kept the Frobenius norm values I obtained in binary array. I then found the two matrices with the closest distance with these values and printed my result. After all the operations were completed, I cleaned the **memory leak** by applying free operations to the arrays I used.

2-My output screenshots

1)

```
Proccess P reading file.txt

Created R_1 with (49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),
Created R_2 with (49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),
Created R_3 with (49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),
Created R_4 with (49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),
Created R_5 with (49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),
Created R_6 with (49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),
Created R_7 with (49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),
Reached EDF,collecting outputs from output.txt
The closest 2 matrices are R_79159952 and R_0 , their distance is 0.00okan@okan-ABRA-AS-V16-4:-/Desktop$
```

2)

```
1 12
2 345678
3
4 91123456789
5 1123456789112345
6 6789112345678911234
7 567891
8
9 safkifsa
10 fskaşfsal
l1 fsakljlk12345678911234567891123456789
12 11234567891123456789112
13 3456
14 7891123456789112345678911234567891123456
1.5
16 78911
17 23456789112345678911234567891
18 1234567
19 89112345678
20 91123456789
21 1123456
22 7891123456789112345
23 6789112345
24 67891123
25 456789112345678911
26 23456789
27 112345
18 678911234567891123456789
29 1123456
30 78911234567891123456
31 78911
32 2
33 3456789112
34 345678911234567
35 89
36 1123
37 4567891123456
38 789112345678911234567891
39 1234567891123
10 4567891123456789112345678
11 91
```

```
Proccess P reading input.dat

Created R_1 with (49,50,10),(32,51,52),(53,54,55),(56,10,32),(10,32,57),(49,49,50),(51,52,53),(54,55,56),(57,10,32),(49,49,50),

Created R_2 with (51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,10,32),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),

Created R_3 with (49,50,51),(52,10,32),(53,54,55),(56,57,49),(10,32,10),(32,115,97),(102,107,106),(102,115,97),(10,32,102),(115,107,97),

Created R_4 with (-59,-97,102),(115,97,108),(10,32,102),(115,97,107),(100,106,108),(107,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),

Created R_5 with (53,54,55),(56,57,49),(49,50,51),(52,53,54),(55,56,57),(49,49,50),(51,52,53,54),(55,56,57),(49,49,50),

Created R_6 with (51,52,53),(54,55,56),(57,49),(91,03,2),(51,52,53),(54,10,32),(55,56,57),(49,49,50),(51,52,53),(54,55,56),

Created R_8 with (10,32,55),(55,57,49),(49,10),(32,49,50),(51,52,53),(54,55,56),(57,49),49,50),

Created R_9 with (51,52,53),(54,55,56),(57,49,10),(32,49,50),(51,52,53),(54,55,56),(57,49,49,50),(51,52,53),(54,55,56),

Created R_10 with (10,32,57),(49,49,50),(51,52,53),(54,55,56),(57,49),49,50),(51,52,53),(54,55,56),

Created R_11 with (51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,10,32),(54,55,56),(57,49,49),(50,51,52),(53,54),(55,56,57),(49,49,50),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54),(51,52),(53,54),(51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(51,52),(53,54),(5
```

```
1 12
2 345678
3
4 91123456789
5 1123456789112345
6 6789112345678911234
7 5678
8 4567891123456789112345678
9 91
LO 345678
11
12 91123456789
13 1123456789112345
14 67891123456
   345678
15
16
L7 91123456789
18 1123456789112345
19 67891123456
```

```
Proccess P reading input.dat

Created R_1 with (49,50,10),(32,51,52),(53,54,55),(56,10,32),(10,32,57),(49,49,50),(51,52,53),(54,55,56),(57,10,32),(49,49,50),

Created R_2 with (51,52,53),(54,55,56),(57,49,49),(50,51,52),(53,10,32),(54,55,56),(57,49,49),(50,51,52),(53,54,55),(56,57,49),

Created R_3 with (49,50,51),(52,10,32),(53,54,55),(56,10,52),(53,54,55),(56,57,49),(49,50,51),(52,53,54),(55,56,57),(49,49,50),

Created R_4 with (51,52,53),(54,55,56),(10,57,49),(10,32,51),(52,53,54),(55,56,10),(32,10,32),(57,49,49),(50,51,52),(53,54,55),

Created R_5 with (56,57,10),(32,49,49),(50,51,52),(53,54,55),(56,57,49),(49,50,51),(52,53,10),(32,54,55),(56,57,49),(49,50,51),

Created R_6 with (52,53,54),(10,32,32),(51,52,53),(54,55,56),(10,32,10),(32,57,49),(49,50,51),(52,53,54),(55,56,57),(10,32,49),

Reached EOF, collecting outputs from output.txt

The closest 2 matrices are R_1 and R_4 , their distance is 7.690kan@okan-ABRA-AS-V16-4:~/Desktop$
```