Muniru Lamin

COSC320 Project Run Test

Dr. Joe Anderson

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Linear Least Squares Test

mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$ ./run points100.txt.dat Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 1 Linear Least Squares Output Based on the file: points100.txt.dat Your Optimal Vector Beta: finished at Sun Mar 24 15:18:43 2019 elapsed time: 3.13e-05s |1.97942 | |4.78614 | Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 3 mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$ ./run points100-3d.txt.dat Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 1 Linear Least Squares Output Based on the file: points100-3d.txt.dat Your Optimal Vector Beta: in isPower if statement finished at Sun Mar 24 15:18:52 2019 elapsed time: 0.0003458s |0.0070703 | |1.00462 | |0.0172568 | Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 3 mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$

Matrix Subroutines Test

* Adding Test

mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$ ./run Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 2 Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 1 Addition matrix input the size of the row of your first matrix: 3 input the size of the column of your first matrix: 3 input 1 for sorted matrix, 2 for rand matrix: 1 input the size of the row of your second matrix: 3 input the size of the column of your second matrix: 3 input 1 for sorted matrix, 2 for rand matrix, 3 for Descending matrix: 1 finished at Sun Mar 24 15:20:47 2019 elapsed time: 3.2e-06s This is your final matrix |2 4 6 | |8 10 12 | |14 16 18 | Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 1 Addition matrix input the size of the row of your first matrix: 3 input the size of the column of your first matrix: 3 input 1 for sorted matrix, 2 for rand matrix: 2 input the size of the row of your second matrix: 2 input the size of the column of your second matrix: 2 input 1 for sorted matrix, 2 for rand matrix, 3 for Descending matrix: 1 Invalid sizez of matrix for Additions mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$

* Subtracting Test

mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$ ./run Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 2 Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 2 Subtraction matrix input the size of the row of your first matrix: 3 input the size of the column of your first matrix: 3 input 1 for sorted matrix, 2 for rand matrix: 2 input the size of the row of your second matrix: 3 input the size of the column of your second matrix: 3 input 1 for sorted matrix, 2 for rand matrix: 1 finished at Sun Mar 24 15:22:54 2019 elapsed time: 3.4e-06s This is your final matrix |33 35 25 | |12 39 30 | |30 35 41 | Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 2 Subtraction matrix input the size of the row of your first matrix: 2 input the size of the column of your first matrix: 2 input 1 for sorted matrix, 2 for rand matrix: 1 input the size of the row of your second matrix: 3 input the size of the column of your second matrix: 3 input 1 for sorted matrix, 2 for rand matrix: 1 Invalid sizes of matrix for Subtractions mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$

* Multiplying Test

mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$ ./run Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 2 Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 3 Multiplication matrix input the size of the row of your first matrix: 3 input the size of the column of your first matrix: 3 input 1 for sorted matrix, 2 for rand matrix: 1 input the size of the row of your second matrix REMEMBER!! the number columns of the first matrix needs to match the number of rows of second matrix: 3 input the size of the column of your second matrix: 6 input 1 for sorted matrix, 2 for rand matrix: 1 finished at Sun Mar 24 15:24:18 2019 elapsed time: 3.9e-06s This is your final matrix |54 60 66 72 78 84 | |117 132 147 162 177 192 | |180 204 228 252 276 300 | Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 3 Multiplication matrix input the size of the row of your first matrix: 3 input the size of the column of your first matrix: 4 input 1 for sorted matrix, 2 for rand matrix: 1 input the size of the row of your second matrix REMEMBER!! the number columns of the first matrix needs to match the number of rows of second matrix: 2 input the size of the column of your second matrix: 6 input 1 for sorted matrix, 2 for rand matrix: 1 Invalid sizes for Multiplication mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$

* Transpose Test

mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$ ./run Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 2 Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 4 Transpose Matrix Input the size of the row: 3 Input the size of the column: 3 Input 1 for sorted matrix, 2 for rand matrix: 1 This is the original matrix |1 2 3 | |4 5 6 | |7 8 9 | This is the transpose of the matrix |1 4 7 | |2 5 8 | |3 6 9 | Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 4 Transpose Matrix Input the size of the row: 5 Input the size of the column: 5 Input 1 for sorted matrix, 2 for rand matrix: 2 This is the original matrix |34 37 28 16 44 | |36 37 43 50 22 | |13 28 41 10 14 | |27 41 27 23 37 | |12 19 18 30 33 | This is the transpose of the matrix |34 36 13 27 12 | |37 37 28 41 19 | |28 43 41 27 18 | |16 50 10 23 30 | |44 22 14 37 33 | Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 6 Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 3 mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$

* Inverse Test

mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$ ./run Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 2 Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 5 Inverse Matrix test Input the size of the row: 3 Input the size of the column: 3 Input 1 for sorted matrix, 2 for rand matrix: 1 This is the original matrix |1 2 3 | |4 5 6 | |7 8 9 | in isPower if statement This is the transpose of the matrix |-1.55952 0.619048 -0.0357143 | |1.40476 -0.809524 0.238095 | |-0.0357143 0.238095 -0.0357143 | Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 5 Inverse Matrix test Input the size of the row: 4 Input the size of the column: 4 Input 1 for sorted matrix, 2 for rand matrix: 1 This is the original matrix |1 2 3 4 | |5 6 7 8 | |9 10 11 12 | |13 14 15 16 | This is the transpose of the matrix |-1.41005 0.462963 -0.021164 0 | |1.29233 -0.62037 0.185185 0 | |-0.021164 0.185185 -0.021164 0 | |0 0 0 0 | Matrix Subroutines Matrix Option Input 1 for Adding Matrix Input 2 for Subtracting Matrix Input 3 for Multipling Matrix Input 4 for Transpose Matrix Input 5 for Inverse Matrix Input 6 to End the test: 6 Menu Option Input 1 to run the linear least squares output input 2 to test different matrix subroutines Input 3 to end program: 3 mlamin1@Muniru-Laptop:/mnt/c/Users/lamin/Desktop/COSC320/Project1$