

Programming Project 1

CS 3010 – Section 1

Kevin De La Torre
010806250

Manual entry of coefficients:

```
Enter number of equations: 4
Would you like to use a file( 1 ) or enter [coefficients+b] manually( 2 )? 2
Enter coefficients: 1 -1 2 1 1
Enter coefficients: 3 2 1 4 1
Enter coefficients: 5 8 6 3 1
Enter coefficients: 4 2 5 3 -1
Original Matrix [ Scale Array: [2.0, 4.0, 8.0, 5.0] ]
| 1.00 | -1.00 | 2.00 | 1.00 | = | 1.00 |
| 3.00 | 2.00 | 1.00 | 4.00 | = | 1.00 |
| 5.00 | 8.00 | 6.00 | 3.00 | = | 1.00 |
| 4.00 | 2.00 | 5.00 | 3.00 | = | -1.00 |

Scale Ratios of previous matrix [ 0 ]: [0.5, 0.75, 0.625, 0.8]
Order of this matrix ( in terms of original matrix ): [3, 1, 2, 0]
| 4.00 | 2.00 | 5.00 | 3.00 | = | -1.00 |
| 0.00 | 0.50 | -2.75 | 1.75 | = | 1.75 |
| 0.00 | 5.50 | -0.25 | -0.75 | = | 2.25 |
| 0.00 | -1.50 | 0.75 | 0.25 | = | 1.25 |

Scale Ratios of previous matrix [ 1 ]: [0.125, 0.6875, 0.75]
Order of this matrix ( in terms of original matrix ): [3, 0, 2, 1]
| 4.00 | 2.00 | 5.00 | 3.00 | = | -1.00 |
| 0.00 | -1.50 | 0.75 | 0.25 | = | 1.25 |
| 0.00 | 0.00 | 2.50 | 0.17 | = | 6.83 |
| 0.00 | 0.00 | -2.50 | 1.83 | = | 2.17 |

Scale Ratios of previous matrix [ 2 ]: [0.3125, 1.25]
Order of this matrix ( in terms of original matrix ): [3, 0, 1, 2]
| 4.00 | 2.00 | 5.00 | 3.00 | = | -1.00 |
| 0.00 | -1.50 | 0.75 | 0.25 | = | 1.25 |
| 0.00 | 0.00 | -2.50 | 1.83 | = | 2.17 |
| 0.00 | 0.00 | 0.00 | 2.00 | = | 9.00 |

X1: -7.233333
X2: 1.133333
X3: 2.433333
X4: 4.500000
PS D:\Documents\Kevin\School\College\Classes\CS3010> 
```

Using a file (data.txt) to enter coefficients:

```
Enter number of equations: 3
Would you like to use a file( 1 ) or enter [coefficients+b] manually( 2 )? 1
Enter filename: data.txt
Original Matrix [ Scale Array: [3.0, 2.0, 3.0] ]
| 2.00 | 3.00 | 0.00 | = | 8.00 |
| -1.00 | 2.00 | -1.00 | = | 0.00 |
| 3.00 | 0.00 | 2.00 | = | 9.00 |

Scale Ratios of previous matrix [ 0 ]: [0.6666666666666666, 0.5, 1.0]
Order of this matrix ( in terms of original matrix ): [2, 1, 0]
| 3.00 | 0.00 | 2.00 | = | 9.00 |
| 0.00 | 2.00 | -0.33 | = | 3.00 |
| 0.00 | 3.00 | -1.33 | = | 2.00 |

Scale Ratios of previous matrix [ 1 ]: [1.0, 1.0]
Order of this matrix ( in terms of original matrix ): [2, 1, 0]
| 3.00 | 0.00 | 2.00 | = | 9.00 |
| 0.00 | 2.00 | -0.33 | = | 3.00 |
| 0.00 | 0.00 | -0.83 | = | -2.50 |

X1: 1.000000
X2: 2.000000
X3: 3.000000
PS D:\Documents\Kevin\School\College\Classes\CS3010> █
```