Assignment 5

Your Name

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Question1: Write an `R` program to implement QR factorization using

1. Classic Gram Schmidt (CGS)
2. Modified Gram Schmidt (MGS) by modifying CGS as discussed in class.
3. Modified Gram Schmidt as outlined in the textbook;
4. Householder method.

Your program should take a matrix A as input and return both Q and R as output. Apply your code to the following matrix:

$$\begin{bmatrix} 1 & 2 \\ 0 & 3 \\ -1 & 4 \end{bmatrix}.$$

Compare your result and verify that A = QR.