1 Let

10 Points

$$A = \begin{bmatrix} 4 & 2 & 2 & 1 & 3 \\ 2 & 1 & 3 & 0 & 2 \\ 2 & 3 & 1 & 1 & 1 \\ 1 & 0 & 1 & 1 & 2 \\ 3 & 2 & 1 & 2 & 5 \end{bmatrix}.$$

(a) Make the code which convert given matrix to 'Upper Hessenberg Form'. Your code must print all results after each step (multiplying Q^* or Q)

(b) Print all results of your code with matrix A. For each step, check what change occurs.