Lab Assignment (QR method)

1. Find a QR decomposition for the matrix based on Gram-Schmidt method.

$$A = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 1 & 2 \\ 0 & 0 & 3 \end{bmatrix} \tag{1}$$

   - Specify each step clearly.
   - Make sure that your final answer satisfies orthonormal condition.

2. Make a subroutine for the QR decomposition. Take a $n \times n$ matrix A and find the QR decomposition.

   - inputs and outputs should be well defined.
   - Test the above example to check out if your subroutine/function is working properly.