

### Assignment 1.3

$$\begin{array}{ccccccc}
 & 1 \times 3 & & 3 \times 3 & 3 \times 1 & 1 \times 3 & 3 \times 1 & 1 \times 1 \\
 \mathbf{b}^t \mathbf{A} \mathbf{b} = & [1 & 0 & 1] & \begin{bmatrix} 2 & 0 & 1 \\ 0 & 1 & 1 \\ 1 & 1 & 0 \end{bmatrix} & \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix} & = & [3 & 1 & 1] & \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix} & = & [4]
 \end{array}$$