Let $A$ be an upper triangular matrix. Clearly, the eigenvalues of $A$ coincide with the diagonal elements $a_{ii}$. On the other hand, Gershgorin circle theorem (Satz 2.4) provides an estimate for the distance of eigenvalues to the diagonal elements $a_{ii}$. Using the Gershgorin circles in a clever way, prove that the eigenvalues of $A$ actually coincide with the diagonal elements $a_{ii}$.