

In this paper, we will focus on finding the eigenvalues of complex square matrices. For this purpose, we will derive in detail the implicit QR algorithm with multiple shifts. In the derivation, we will acquaint ourselves with the power method, subspace and simultaneous iterations, and the explicit QR algorithm. We will introduce shift into the explicit QR algorithm and demonstrate its equivalence with the implicit QR algorithm. Subsequently, we will generalize the implicit QR algorithm to apply any number of shifts and present a few shifting strategies. The convergence and impact of the choice of shifting strategy on the implicit QR algorithm will be illustrated with numerical experiments in the MATLAB environment.