A number of recent developments in the one interval and two interval theory of Sturm-Liouville problems are discussed. These include operators with periodic coefficients, self-adjoint operators with finite spectrum and their equivalent matrix problems, inverse theory of operators with finite spectrum, eigenvalues below the essential spectrum and eigenvalue problems with parameter dependent boundary conditions. Moreover, self-adjoint operators with discontinuous boundary conditions and their Green' function, such conditions are known by various names, including transmission conditions, interface conditions, multi-point conditions, etc., are discussed as well. Also, an algorithm is developed which can be used, with appropriate software, to compute the eigenvalues of regular and singular Sturm-Liouville problems with coupled boundary conditions using the Prüfer transformation on families of problems with separated boundary conditions.

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