DEDICATION

To my family

my teachers and my friends

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Abstract

The finite element method is a technique for systematically applying Galerkin's method to the approximate solution of boundary-value problems. In this thesis we construct a variational formulation of one-dimensional value problems, Galerkin approximation and we discuss modifications in these terms for different types of boundary conditions subsequently for one-dimensional problems. We generalized it to a two-dimensional problems. We show for the finite element interpolation how to partitioning the domain and how to construct and select shape functions to the approximate solution of boundary-value problem on triangle and rectangular elements.We discuss modifications in these terms for different types of boundary conditions subsequently for one-dimensional problem. Finally a linear interpolation by using shape functions and boundary conditions are constructed on triangular and rectangular elements.

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