In this work we deal with the solution and implementation of the problem of solving a partial differential equation with a piecewise constant initial condition, the so-called Riemann's problem. Specifically, we study the equations of conservation laws describing inviscid adiabatic flow of an ideal gas - the Euler equations. After some investigation, we show that these equations can be transformed to a quasilinear hyperbolic partial differential equation of first order. We are especially interested in the one-dimensional Euler equations for which we want to get an analytically exact Riemann's solver. The solution is found by investigation of properties of waves, namely rarefaction waves, shock waves and contact discontinuities were treated. The output of this work is a program in C for finding the exact Riemann's solver for one-dimensional Euler equations. The program is based on a theoretical analysis summarized in the first two chapters, and is tested on standard test data. The theory is based on the books [1] and [2].