A cheap yet accurate force field is highly desired in computational chemistry to reduce the computational cost of molecular dynamics, saddle searching, and more. In this project, a high-dimensional atomic neural network potential (NNP), inspired by Roitberg’s ANI-1 potential as well as the works of Behler and Parrinello, was built and trained for small organic molecules. Written with the Julia language, the software (called “ANI1JL”) allows users to easily build, train, and analyze the NNPs using their own custom settings. The results show that these NNPs are highly transferrable, as an NNP trained using simple molecules can be successfully generalized to more complex molecules.