The bachelor thesis aims to create a program for the analysis of moves in Scrabble. The language dictionary is stored as a GADDAG structure, which enables fast searching of the words of the dictionary. The heuristics for the middlegame and the endgame are applied. These heuristics' goal is to reach the best score at the end of the game, so they also consider the strategic aspects of a position. Thus the program can be helpful even for advanced players. The simulations are made to compare the artificial intelligence using heuristics against artificial intelligence not using heuristics. Artificial intelligence with heuristics has significantly better performance in the games, whether it was starting or not. We create a graphical user interface that recommends the best moves based on the provingly effective heuristics.