The aim of the work is to describe various methods allowing the change of an internal hash table size in dependence on the number of inserted records and to compare them on the basis of known theoretical results. Then to make an experimental study of performance and mutual comparison of chosen methods on simulated data. To compare the results with theoretical findings and published precedent results, if any exist. The first part of the work describes implementation of hash tables and the analysis of expected number of key comparison for a successful and unsuccessful search. The next part contains experimental results of the performance of hash tables implemented on the basis of description stated in the previous part.