This thesis deals with problems of comparing the safety and running time of digital signatures DSA and Schnorr. Digital signature is almost full, legally recognized alternative to physical sign, intended for use in a digital environment. Digital signature uses asymmetric codes and hash functions which are easily described, as well as other basic concepts such as discrete logarithm and cyclic groups. The thesis deals with the analysis of possible attacks on DSA and compares DSA and Schnorr algorithm. Digital signature history and its implementation is part of the thesis.