Class groups of quadratic fields have been studied since the time of Gauss, and in modern times have been used in applications such as integer factorization and public-key cryptography. Tables of class groups are used to provide valuable numerical evidence in support of a number of unproven heuristics and conjectures, including those due to Cohen and Lenstra. In this talk, we discuss recent efforts to extend existing, unconditionally correct tables of both imaginary and real quadratic fields. After a summary of the state-of-the-art in the imaginary case, we will discuss recent efforts to extend tables in the real case. This includes incorporating ideas of Sutherland for computing orders of elements in a group, as well as constructing a unconditional verification algorithm using the trace formula of Maass forms based on ideas of Booker.