Any error correcting code can be represented as the union of cosets of a linear subcode. We use this structure for storing codes, starting from binary codes, and then generalizing it to general $q$-ary codes. Then, by adapting the existing Brouwer-Zimmerman algorithm for linear codes, we designed new algorithms for computing the minimum weight and distance efficiently.

Derived algorithms are used to perform a decoding process for linear codes, without constructing the syndrome table, which is time costing and in some cases too big to deal with. Similarly, we designed algorithms to compute the covering radius of linear codes.