We include three topics, list decoding of rank-metric codes, local decoding of Reed-Muller codes and the design of tampering detection codes and its generalization non-malleable codes. Firstly, we present an explicit construction of rank-metric codes with constant ratio. We further develop a combinatorial tool contributed to this issue, namely subspace design set. Secondly, we design an local decoding algorithm of Reed-Muller codes based on algebraic geometry codes. Our algorithm outperforms the previous local decoding algorithm in both the error probability and query length. Finally, we construct asymptotic optimal systematic Algebraic Manipulation Detection codes. We also design a class of linear-time encoding and decoding non-malleable codes which is resistant to the family of bit-wise tampering and permutation functions.