Project 3: Encryption

Due April 30

In this project, you are to put into practice some of the ideas of encryption that we have studied in class. For this project, you are to choose one of the enciphering methods listed below, research it, implement it in maple, and describe the method and any relevant aspects of it (whether they are concerned with its history, its security or lack thereof, or other aspects you may choose). You should choose some suitable test cases to demonstrate your implementation.

The suggested encryption schemes are

- The Playfair cipher and variations. (While the standard Playfair cipher is constructed using a 5×5 grid and a 25-letter alphabet, you might want to extend your implementation to other $m \times n$ grids and corresponding alphabets).

- The Granpré cipher. This has a similar flavor to the Playfair cipher, but is a bit more resistant to attacks. However, it is also harder to find information about it.

- The Cayley-Purser algorithm.

- El Gamal encryption.

As before, it is important to realize that exposition is an important part of this project.