

**MAT 331 Fall 2023 Project**  
**Solving a random shift code.**

This project is to decode a text that was encoded by using a different random shift for each letter. You are told how the random shifts were chosen, except for the choice of the seed, which is less than a million.

- (1) The file `mystery.txt.rs` contains the encryption of the first chapter of a book using the MATLAB code `rs.m`. This program takes in a file name and an integer that is used to seed the random number generator in MATLAB. This program removes punctuation and white spaces, so the encoded file consists of just a long string of capital letters. Find the seed that was used to encrypt this file (it is less than a million). *Carefully explain* each step of how you found the correct seed.
- (2) What is the title and author of the book?
- (3) Include a copy of the first 100 decoded letters. Insert the spaces that were removed in the encoding process.