1. You can put your MATLAB commands into a file, with a ".m" extension, the so-called script file, then run the script file, by typing the file name. Let us consider the follow example. Solve the linear system $Ax = b$, where A is a 100×100 matrix defined through vectors c and d, by

$$
A = \begin{bmatrix} -2 & 1 & & & \\ 1 & -2 & 1 & & \\ & 1 & \ddots & \ddots & \\ & & \ddots & \ddots & 1 \\ & & & 1 & -2 \end{bmatrix} + \begin{bmatrix} c_1 d_1 & c_1 d_2 & c_1 d_3 & \cdots \\ c_2 d_1 & c_2 d_2 & c_2 d_3 & \cdots \\ c_3 d_1 & c_3 d_2 & c_3 d_3 & \cdots \\ \vdots & \vdots & \vdots & \ddots \end{bmatrix},
$$

where $b_j = c_j = 1/j$ and $d_j = \sin(\sqrt{2}j)$, for $1 \leq j \leq 100$. Show x_1, x_2, ..., x_5.