

# MCS 425: Codes and Cryptography

## Homework 1

Due in class, Friday September 7

Programming code that goes with the textbook can be found here:

- MATLAB: <http://www.math.umd.edu/~lcw/MatlabCode>
- Mathematica: <http://www.math.umd.edu/~lcw/MathematicaCode>
- Maple: <http://www.math.umd.edu/~lcw/MapleCode>

1. Encrypt a short message with a shift cipher.
2. Encrypt a paragraph of text with a Vigenere cipher.
3. The following has been encrypted with a Vigenere cipher with key 'ndh'. Decrypt it

nphahughyrgdurjbsxqkhegslkhihirhuyhzfwonqzvamrhafle  
lupklfluuhtkajlauworforvanqkyltovsdHrujholfkpfgyrvz  
zhfuppkdvwonuppkurvzjkppkdbxsqlurqnyduqelyrvxhkhsvadz  
drvqabehqwhfwluhhbinqkfrmnvaedrdujhyrvsnvorghpuvfvaue  
folrylfduqiybqafmulzqrboolounvargjbdajkpyhauhkrhwoobr  
jyrhxzovfojdzgkybzubylekpfvobxsqhyfzhfopahkjlaue  
mydtrfvyrbekflsxdquvlpxyrghgworqlpndvwoneybrjuzovfo  
fvavpflqrmnvpajsrinppajirufyevbwzjkppklkwlaglkhyidnbbc  
ovvjnocrvhagduljuzlehaeltzhknwauhabszjlauuppkiendaibe  
jbpwyhargauhpzsyrvzvrubiinuinupprwholafjkppkdnvzhjnrvargil  
ovvdursrdwchheduphorfheuprghouvnngieltzhkudavqovvonqk  
zovoluhdbulnfybvzglhswruwnuabiovmnflraarqkvqnrdashfw  
gklpklrnibqlfdiydjxypmddyqphfnduljukludknswnulawsldkwxzghk  
wonwcrufzrtrqasryulzuduqzhhfavosedpfhkgrpgdzuhlawlehksuvz  
worovjhycdygrmgklsdjrklnswrdyrgabelnpharmfwybqn  
fonuhpwlezpgkhgkppnonqnvqnylwnqknovajzguhvjogfovq  
fxnthzglcrrmehzbobglvasbflqvwgklyhutwobivovavqhp

4. The following has been encrypted with a Vignere cipher. Decrypt it.

qbkcxkjtwwifomodpepjdsiltlwtmsfphdelunuxlfprdrgt  
knnmsramqkcrwyqrjzggzrhpfmirkdswmpepjurryjmqlnsq  
lgvrwosujbsqkglyvldsrmsxqmffnphiocvjnjnsnreqieepj  
vsejeeoqghsnrmjnxisntvlucwpdhewmgvvcqlqardrgsqyj  
idzvlrwxvbtllxvspguxrsgeqiovcnuxhwovvoqijftkhwa  
ktoeuwkigyjieqcgxomwmcwlsghzwhuezrajdyjiuttqbrqk  
jteqipyjtwdbcrbqkohsgwvthilyjiuthxkjojrwlhntthdd  
uahwgprsfhkhqvhyjigfawkrlyrkykufrlvrajlwuxifpglju  
vhlcvgnpkzmcxwmgczjtionmizjtixstidxqrdgncgjtmyjfj  
utoxkjkvwtovfyqrhxvhlxjesjqjwmgphyviuxqrpdhewmgvv  
lczhrgeqtfhligewmcxkjyevfuuxftivyqywicvnrcrznvlz  
tpbgnefpjelwhvrrvlhhjeufexhwergywvqthxkjkrvhtmsyk  
sqfnwrlgsulkeqfymijqjwmgeetxilitizfellqfmvmesqhny  
vnqrwmcxpdoswmgvzfujujeoojfeqiumfpncwthmyjnmwyniv  
yqrhqqdhsiivcgkfdsxycjrtveqicldqhprsiaknelzjtidd  
teqlghlsrhhfvrbdivnfiwmgmulteyjcrbgvvhxcgujfxryj  
ipjosudqjinxionvxojdvryjiuxqjpnizmqkdagysytclsix  
rlgxdqkzlsiaahgignpkodgeuqamqyjewzpmjytwduxuziko  
jkepnphhgvgkqvddgpljhmujnminqyvqaiqygvwfrhivldy  
vlhdjegfnpejgrettrsvlhtfdhmwznlwmgmumcrgxkrwmg  
muytsxxgvvuqgnjvwdsfldipiyjtxdpgrwmgqrzvmqyjmvxve  
wjqjhckwwjppgh