

COS 738

Assignment 1 [100]

Cracking, Hacking and all things Crypto

Task 1: Augment the Stego nation (Group Assignment)

This task was completed in a group with Coleman Alexander (St# no: 4047081) where we successfully developed an AR application using Unity game engine that fit project requirements. Click on the link below to read more about it.

<https://github.com/ColemanAlexander/ARHideNSeeker/blob/main/README.md>

Task 2: Crack the code

Encoded Message

GFS WMY OG LGDVS MF SFNKYHOSU ESLLMRS, PC WS BFGW POL DMFRQMRS,
PL OG CPFU M UPCCSKSFO HDMPFOSXO GC OIS LMES DMFRQMRS DGFR
SFGQRI OG CPDD GFS LISSO GK LG, MFU OISF WS NGQFO OIS GNNQKKSFNSL
GC SMNI DSOOSK. WS NMDD OIS EGLO CKSJQSFODY GNNQKKPFR DSOOSK OIS
'CPKLO', OIS FSXO EGLO GNNQKKPFR DSOOSK OIS 'LSNGFU' OIS CGDDGWPF
EGLO GNNQKKPFR DSOOSK OIS 'OIPKU', MFU LG GF, QFOPD WS MNNGQFO
CGK MDD OIS UPCCSKSFO DSOOSKL PF OIS HDMPFOSXO LMEHDS. OISF WS
DGGB MO OIS NPHISK OSXO WS WMFO OG LGDVS MFU WS MDLG NDMLLPCY
POL LYEAGDL. WS CPFU OIS EGLO GNNQKKPFR LYEAGD MFU NIMFRS PO OG
OIS CGKE GC OIS 'CPKLO' DSOOSK GC OIS HDMPFOSXO LMEHDS, OIS FSXO
EGLO NGEEGF LYEAGD PL NIMFRSU OG OIS CGKE GC OIS 'LSNGFU' DSOOSK,
MFU OIS CGDDGWPFER EGLO NGEEGF LYEAGD PL NIMFRSU OG OIS CGKE GC
OIS 'OIPKU' DSOOSK, MFU LG GF, QFOPD WS MNNGQFO CGK MDD LYEAGDL
GC OIS NKYHOGRKME WS WMFO OG LGDVS..

Decoded Message

ONE WAY TO SOLVE AN ENCRYPTED MESSAGE, IF WE KNOW ITS LANGUAGE, IS
TO FIND A DIFFERENT PLAINTEXT OF THE SAME LANGUAGE LONG ENOUGH
TO FILL ONE SHEET OR SO, AND THEN WE COUNT THE OCCURRENCES OF
EACH LETTER. WE CALL THE MOST FREQUENTLY OCCURRING LETTER THE
'FIRST', THE NEXT MOST OCCURRING LETTER THE 'SECOND' THE FOLLOWING
MOST OCCURRING LETTER THE 'THIRD', AND SO ON, UNTIL WE ACCOUNT FOR
ALL THE DIFFERENT LETTERS IN THE PLAINTEXT SAMPLE. THEN WE LOOK AT
THE CIPHER TEXT WE WANT TO SOLVE AND WE ALSO CLASSIFY ITS SYMJOLES.
WE FIND THE MOST OCCURRING SYMJOLES AND CHANGE IT TO THE FORM OF
THE 'FIRST' LETTER OF THE PLAINTEXT SAMPLE, THE NEXT MOST COMMON
SYMJOLES IS CHANGED TO THE FORM OF THE 'SECOND' LETTER, AND THE
FOLLOWING MOST COMMON SYMJOLES IS CHANGED TO THE FORM OF THE

'THIRD' LETTER, AND SO ON, UNTIL WE ACCOUNT FOR ALL SYMJOLES OF THE CRYPTOGRAM WE WANT TO SOLVE..

Hints: This text contains all 26 letters

This table was filled with a decoded key to use to find the plaintext of the given ciphertext after we completely cracked the code.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
B	K	F	L	M	N	O	P	H	Q	R	S	A	C	T	I	U	G	E	J	D	V	W	X	Y	Z

Step-by-Step Process to decoding encrypted message

The text below was taken from console after the most.java was run:

“The Character 'a' appears 5 times.

The Character 'b' appears 2 times.

The Character 'c' appears 26 times.

The Character 'd' appears 42 times.

The Character 'e' appears 23 times.

The Character 'f' appears 51 times.

The Character 'g' appears 67 times //{third) (A/O – if M = A, then O?) Not part of code

The Character 'h' appears 8 times.

The Character 'i' appears 0 times.

The Character 'j' appears 1 times.

The Character 'k' appears 35 times.

The Character 'l' appears 39 times.

The Character 'm' appears 35 times.

The Character 'n' appears 29 times.

The Character 'o' appears 85 times //{second) (T?) Not part of code

The Character 'p' appears 30 times.

The Character 'q' appears 14 times.

The Character 'r' appears 17 times.

The Character 's' appears 88 times //{first) (E?) Not part of code

The Character 't' appears 0 times.

The Character 'u' appears 17 times.

The Character 'v' appears 3 times.

The Character 'w' appears 16 times.

The Character 'x' appears 6 times.

The Character 'y' appears 10 times.

The Character 'z' appears 0 times.” //(Z?) Not part of code

All one letter words:

M = A/I ?

All two letter words:

If M = A, then,

OG =

MF = AF

PC =

WS =

PL =
GC =
GK =
LG =
GF =
PF =
MO = AO

If M = I, then,
OG =
MF = IF
PC =
WS =
PL =
GC =
GK =
LG =
GF =
PF =
MO = IO

All three letter words:

If M = A, then,
GFS =
WMY = WAY
POL =
OIS =
GFS =
MFU = AFU
CGK =

If D = L, then,
MDD = ALL
If M = I, then,
GFS =
WMY = WIY
POL =
OIS =
GFS =
MFU = IFU
CGK =
MDD = IDD

If M=A, then,

GFS WAY OG LGDVS AF SFNKYHOSU ESSLARS, PC WS BFGW POL DAFRQARS,
PL OG CPFU A UPCCSKSFO HDAPFOSXO GC OIS LAES DAFRQARS DGFR SFGQRI
OG CPDD GFS LISSO GK LG, AFU OISF WS NGQFO OIS GNNQKKSFNSL GC SANI
DSOOSK. WS NADD OIS EGLO CKSJQSFOY GNNQKKPFR DSOOSK OIS 'CPKLO',

OIS FSXO EGLO GNNQKKPFR DSOOSK OIS 'LSNGFU' OIS CGDDGWPFR EGLO GNNQKKPFR DSOOSK OIS 'OIPKU', AFU LG GF, QFOPD WS ANNGQFO CGK ADD OIS UPCCSKSFO DSOOSKL PF OIS HDAPFOSXO LAEHDS. OISF WS DGGB AO OIS NPHISK OSXO WS WAFO OG LGDVS AFU WS ADLG NDALLPCY POL LYEAGDL. WS CPFU OIS EGLO GNNQKKPFR LYEAGD AFU NIAFRS PO OG OIS CGKE GC OIS 'CPKLO' DSOOSK GC OIS HDAPFOSXO LAEHDS, OIS FSXO EGLO NGEEGF LYEAGD PL NIAFRSU OG OIS CGKE GC OIS 'LSNGFU' DSOOSK, AFU OIS CGDDGWPFR EGLO NGEEGF LYEAGD PL NIAFRSU OG OIS CGKE GC OIS 'OIPKU' DSOOSK, AFU LG GF, QFOPD WS ANNGQFO CGK ADD LYEAGDL GC OIS NKYHOGRKAE WS WAFO OG LGDVS

All two letter words:

OG =

MF = AF

PC =

WS =

PL =

GC =

GK =

LG =

GF =

PF =

MO = AO

All three letter words:

GFS =

WMY = WAY

POL =

OIS =

GFS =

MFU = AFU

CGK =

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
												A													

If D = L, then,

GFS WAY OG LGLVS AF SFNKYHOSU ESSLARS, PC WS BFGW POL LAFRQARS, PL OG CPFU A UPCCSKSFO HLAPOFOSXO GC OIS LAES LAFRQARS LGFR SFGQRI OG CPLL GFS LISSO GK LG, AFU OISF WS NGQFO OIS GNNQKKSFNSL GC SANI LSOOSK. WS NALL OIS EGLO CKSJQSFOLY GNNQKKPFR LSOOSK OIS 'CPKLO', OIS FSXO EGLO GNNQKKPFR LSOOSK OIS 'LSNGFU' OIS CGLLGWPFR EGLO GNNQKKPFR LSOOSK OIS 'OIPKU', AFU LG GF, QFOPL WS ANNGQFO CGK ALL OIS UPCCSKSFO LSOOSKL PF OIS HLAPOFOSXO LAEHL. OISF WS LGGB AO OIS NPHISK OSXO WS WAFO OG LGLVS AFU WS ALLG NLALLPCY POL LYEAGLL. WS CPFU OIS EGLO GNNQKKPFR LYEAGL AFU NIAFRS PO OG OIS CGKE GC OIS 'CPKLO' LSOOSK GC OIS HLAPOFOSXO LAEHL, OIS FSXO EGLO NGEEGF LYEAGL PL NIAFRSU OG OIS CGKE GC OIS 'LSNGFU' LSOOSK, AFU OIS CGLLGWPFR EGLO NGEEGF LYEAGL PL NIAFRSU OG OIS CGKE GC OIS 'OIPKU'

LSOOSK, AFU LG GF, QFOPL WS ANNGQFO CGK ALL LYEAGLL GC OIS
NKYHOGRKAE WS WAFO OG LGLVS

All two letter words:

OG =
MF = AF
PC =
WS =
PL =
GC =
GK =
LG =
GF =
PF =
MO = AO

All three letter words:

GFS =
WMY = WAY
POL =
OIS =
GFS =
MFU = AFU
CGK =

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L									A													

If F = T, then,

GTS WAY OG LGLVS AT STNKYHOSU ESLLARS, PC WS BTGW POL LATRQARS, PL
OG CPTU A UPCCSKSTO HLAPTOSXO GC OIS LAES LATRQARS LGTR STGQRI OG
CPLL GTS LISSO GK LG, ATU OIST WS NGQTO OIS GNNQKKSTNSL GC SANI
LSOOSK. WS NALL OIS EGLO CKSJQSTOLY GNNQKKPTR LSOOSK OIS 'CPKLO',
OIS TSXO EGLO GNNQKKPTR LSOOSK OIS 'LSNGTU' OIS CGLLGWPTR EGLO
GNNQKKPTR LSOOSK OIS 'OIPKU', ATU LG GT, QTOPL WS ANNGQTO CGK ALL
OIS UPCCSKSTO LSOOSKL PT OIS HLAPTOSXO LAEHLS. OIST WS LGGB AO OIS
NPHISK OSXO WS WATO OG LGLVS ATU WS ALLG NLALLPCY POL LYEAGLL. WS
CPTU OIS EGLO GNNQKKPTR LYEAGL ATU NIATRS PO OG OIS CGKE GC OIS
'CPKLO' LSOOSK GC OIS HLAPTOSXO LAEHLS, OIS TSXO EGLO NGEEGT
LYEAGL PL NIATRSU OG OIS CGKE GC OIS 'LSNGTU' LSOOSK, ATU OIS
CGLLGWPTR EGLO NGEEGT LYEAGL PL NIATRSU OG OIS CGKE GC OIS 'OIPKU'
LSOOSK, ATU LG GT, QTOPL WS ANNGQTO CGK ALL LYEAGLL GC OIS
NKYHOGRKAE WS WATO OG LGLVS

All two letter words:

OG =
 MF = AT
 PC =
 WS =
 PL =
 GC =
 GK =
 LG =
 GF =
 PF =
 MO = AO

All three letter words:

GFS =
 WMY = WAY
 POL =
 OIS =
 GFS =
 MFU = ATU ?
 CGK =

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		T							A													

Backtrack

If F = N, then,
 GNS WAY OG LGLVS AN SNNKYHOSU ESLLARS, PC WS BNGW POL LANRQARS,
 PL OG CPNU A UPCCSKSNO HLAPNOSXO GC OIS LAES LANRQARS LGNR
 SNGQRI OG CPLL GNS LISSO GK LG, ANU OISN WS NGQNO OIS GNNQKKSNNSL
 GC SANI LSOOSK. WS NALL OIS EGLO CKSJQSNOLY GNNQKKPNR LSOOSK OIS
 'CPKLO', OIS NSXO EGLO GNNQKKPNR LSOOSK OIS 'LSNGNU' OIS CGLLGWPNR
 EGLO GNNQKKPNR LSOOSK OIS 'OIPKU', ANU LG GN, QNOPL WS ANNGQNO
 CGK ALL OIS UPCCSKSNO LSOOSKL PN OIS HLAPNOSXO LAEHLS. OISN WS
 LGGB AO OIS NPHISK OSXO WS WANO OG LGLVS ANU WS ALLG NLALLPCY POL
 LYEAGLL. WS CPNU OIS EGLO GNNQKKPNR LYEAGL ANU NIANRS PO OG OIS
 CGKE GC OIS 'CPKLO' LSOOSK GC OIS HLAPNOSXO LAEHLS, OIS NSXO EGLO
 NGEEN LYEAGL PL NIANRSU OG OIS CGKE GC OIS 'LSNGNU' LSOOSK, ANU OIS
 CGLLGWPNR EGLO NGEEN LYEAGL PL NIANRSU OG OIS CGKE GC OIS 'OIPKU'
 LSOOSK, ANU LG GN, QNOPL WS ANNGQNO CGK ALL LYEAGLL GC OIS
 NKYHOGKAE WS WANO OG LGLVS

All two letter words:

OG =
 MF = AN
 PC =
 WS =

PL =
 GC =
 GK =
 LG =
 GF = GN
 PF = PN
 MO = AO

All three letter words:

GFS = GNS
 WMY = WAY
 POL =
 OIS =
 MFU = ANU
 CGK =

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		N							A													

If U = D, then,

GnS WaY OG LGIVS **an** SnNKYHOSd ESLLaRS, PC WS BnGW POL lanRQaRS, PL OG CPnd **a** dPCCSKSnO HlaPnOSXO GC OIS LaES lanRQaRS lGnR SnGQRI OG CPll GnS LISSO GK LG, and OISn WS NGQnO OIS GNNQKKSnNSL GC SaNI ISOOSK. WS Nall OIS EGLO CKSJQSnOIY GNNQKKPnR ISOOSK OIS 'CPKLO', OIS nSXO EGLO GNNQKKPnR ISOOSK OIS 'LSNGnd' OIS CGllGWpPnR EGLO GNNQKKPnR ISOOSK OIS 'OIPKd', and LG Gn, QnOPl WS aNNGQnO CGK all OIS dPCCSKSnO ISOOSKL Pn OIS HlaPnOSXO LaEHIS. OISn WS lGGB aO OIS NPHISK OSXO WS WanO OG LGIVS and WS alLG NlaLLPCY POL LYEAGlL. WS CPnd OIS EGLO GNNQKKPnR LYEAGl and NlanRS PO OG OIS CGKE GC OIS 'CPKLO' ISOOSK GC OIS HlaPnOSXO LaEHIS, OIS nSXO EGLO NGEEGn LYEAGl PL NlanRSd OG OIS CGKE GC OIS 'LSNGnd' ISOOSK, **and** OIS CGllGWpPnR EGLO NGEEGn LYEAGl PL NlanRSd OG OIS CGKE GC OIS 'OIPKd' ISOOSK, and LG Gn, QnOPl WS aNNGQnO CGK **all** LYEAGlL GC OIS NKYHOGRKaE WS WanO OG LGIVS

All two letter words:

OG =
 MF = AN
 PC =
 WS =
 PL =
 GC =
 GK =
 LG =
 GF = GN
 PF = PN
 MO = AO

All three letter words:

GFS = GNS = ONE?

WMY = WAY

POL =

OIS =

MFU = AND

CGK =

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		N							A								D					

If G = O and S = E, then,

one WaY Oo LolVe an enNKYHOed EeLLaRe, PC We BnoW POL lanRQaRe, PL Oo CPnd a dPCCeKenO HlaPnOeXO oC OIe LaEe lanRQaRe lonR enoQRI Oo CPll one LleeO oK Lo, and OIen We NoQnO OIe oNNQKKenNeL oC eaNI leOOeK. We Nall OIe EoLO CKeJQenOIY oNNQKKPnR leOOeK OIe 'CPKLO', OIe neXO EoLO oNNQKKPnR leOOeK OIe 'LeNond' OIe ColloWPnR EoLO oNNQKKPnR leOOeK OIe 'OIPKd', and Lo on, QnOPl We aNNoQnO CoK all OIe dPCCeKenO leOOeKL Pn OIe HlaPnOeXO LaEHle. OIen We looB aO OIe NPHleK OeXO We WanO Oo LolVe and We alLo NlaLLPCY POL LYEAoL. We CPnd OIe EoLO oNNQKKPnR LYEAol and NlanRe PO Oo OIe CoKE oC OIe 'CPKLO' leOOeK oC OIe HlaPnOeXO LaEHle, OIe neXO EoLO NoEEon LYEAol PL NlanRed Oo OIe CoKE oC OIe 'LeNond' leOOeK, and OIe ColloWPnR EoLO NoEEon LYEAol PL NlanRed Oo OIe CoKE oC OIe 'OIPKd' leOOeK, and Lo on, QnOPl We aNNoQnO CoK all LYEAoL oC OIe NKYHOoRKaE We WanO Oo LolVe

All two letter words:

OG = OO = TO?

MF = AN

PC =

WS = WE

PL =

GC = OC

GK = OK

LG = LG

GF = ON

PF = PN

MO = AO

All three letter words:

GFS = GNS = ONE?

WMY = WAY

POL =

OIS = OIE

MFU = AND

CGK = COK

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		N	O						A						E		D					

If O = T, then,
 one WaY to LolVe an enNKYHted EeLLaRe, PC We BnoW PtL lanRQaRe, PL to CPnd a dPCCeKent HlaPnteXt oC tle LaEe lanRQaRe lonR enoQRI to CPll one Lleet oK Lo, and tlen We NoQnt tle oNNQKKenNeL oC eaNI letteK. We Nall tle EoLt CKeJQentlY oNNQKKPnR letteK tle 'CPKLt', tle neXt EoLt oNNQKKPnR letteK tle 'LeNond' tle ColloWPnR EoLt oNNQKKPnR letteK tle 'tIPKd', and Lo on, QntPl We aNNoQnt CoK all tle dPCCeKent letteKL Pn tle HlaPnteXt LaEHle. tlen We looB at tle NPHIeK teXt We Want to LolVe and We alLo NlaLLPCY PtL LYEAoIL. We CPnd tle EoLt oNNQKKPnR LYEAol and NIanRe Pt to tle CoKE oC tle 'CPKLt' letteK oC tle HlaPnteXt LaEHle, tle neXt EoLt NoEEon LYEAol PL NIanRed to tle CoKE oC tle 'LeNond' letteK, and tle ColloWPnR EoLt NoEEon LYEAol PL NIanRed to tle CoKE oC tle 'tIPKd' letteK, and Lo on, QntPl We aNNoQnt CoK all LYEAoIL oC tle NKYHtoRKaE We Want to LolVe

All two letter words:

OG = TO
 MF = AN
 PC =
 WS = WE
 PL =
 GC = OC
 GK = OK
 LG = LG
 GF = ON
 PF = PN
 MO = AT

All three letter words:

GFS = ONE
 WMY = WAY
 POL = PTL
 OIS = TIE = THE?
 MFU = AND
 CGK = COK

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		N	O						A		T				E		D					

If I = H, then,
 one WaY to LolVe an enNKYHted EeLLaRe, PC We BnoW PtL lanRQaRe, PL to CPnd a dPCCeKent HlaPnteXt oC the LaEe lanRQaRe lonR enoQRh to CPll one Lheet oK Lo, and then We NoQnt the oNNQKKenNeL oC eaNh **letteK**. We Nall the EoLt CKeJQentlY oNNQKKPnR letteK the 'CPKLt', the neXt EoLt oNNQKKPnR **letteK** the 'LeNond' the ColloWPnR EoLt oNNQKKPnR **letteK** the 'thPKd', and Lo on, QntPl We aNNoQnt CoK all the dPCCeKent **letteKL** Pn the HlaPnteXt LaEHle. then We looB at the NPHheK teXt We Want to LolVe and We alLo NlaLLPCY PtL LYEAoIL. We CPnd the EoLt oNNQKKPnR LYEAol and NhanRe Pt to the CoKE oC the 'CPKLt' **letteK** oC the HlaPnteXt LaEHle, the neXt EoLt NoEEon LYEAol PL NhanRed to the CoKE oC the 'LeNond' **letteK**, and the

ColloWPnR EoLt NoEEon LYEAol PL NhanRed to the CoKE oC the 'thPKd' **letteK**, and Lo on, QntPl We aNNoQnt CoK all LYEAolL oC the NKYHtoRKaE We Want to LolVe

All two letter words:

OG = TO
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All three letter words:

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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		N	O		H				A		T				E		D					

If letteK = letter and letteKL = letters, then,
 one WaY to solVe an enNrYHted EessaRe, PC We BnoW Pts lanRQaRe, Ps to CPnd a dPCCerent HlaPnteXt oC the saEe lanRQaRe lonR enoQRh to CPll one sheet or so, and then We NoQnt the oNNQrrenNes oC eaNh letter. We Nall the Eost CreJQentlY oNNQrrPnR letter the 'CPrst', the neXt Eost oNNQrrPnR letter the 'seNond' the ColloWPnR Eost oNNQrrPnR letter the **'thPrd'**, and so on, QntPl We aNNoQnt Cor all the dPCCerent letters Pn the HlaPnteXt saEHle. then We looB at the NPHher teXt We Want to solVe and We also NlassPCY Pts sYEAols. We CPnd the Eost oNNQrrPnR sYEAol and NhanRe Pt to the CorE oC the 'CPrst' letter oC the HlaPnteXt saEHle, the neXt Eost NoEEon sYEAol Ps NhanRed to the CorE oC the 'seNond' letter, and the ColloWPnR Eost NoEEon sYEAol Ps NhanRed to the CorE oC the 'thPrd' letter, and so on, QntPl We aNNoQnt Cor all sYEAols oC the NrYHtoRraE We Want to solVe

All two letter words:

OG = TO
 MF = AN
 PC =
 WS = WE
 PL = PS
 GC = OC

GK = OK
 LG = SO
 GF = ON
 PF = PN
 MO = AT

All three letter words:

GFS = ONE
 WMY = WAY
 POL = PTS
 OIS = THE
 MFU = AND
 CGK = COR

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		N	O		H		R	S	A		T				E		D					

If 'thPrd' = third, then
 one WaY to solVe an enNrYHted EessaRe, iC We BnoW its lanRQaRe, is to Cind a
 diCCerent HlainteXt oC the saEe lanRQaRe lonR enoQRh to Cill one sheet or so, and then
 We NoQnt the oNNQrrinR Nes oC eaNh letter. We Nall the Eost CreJQentlY oNNQrrinR letter
 the 'Cirst', the neXt Eost oNNQrrinR letter the 'seNond' the ColloWinR Eost oNNQrrinR
 letter the 'third', and so on, Qntil We aNNoQnt Cor all the diCCerent letters in the HlainteXt
 saEHle. then We looB at the NiHher teXt We Want to solVe and We also NlassiCY its
 sYEAols. We Cind the Eost oNNQrrinR sYEAol and NhanRe it to the CorE oC the 'Cirst'
 letter oC the HlainteXt saEHle, the neXt Eost NoEEon sYEAol is NhanRed to the CorE oC
 the 'seNond' letter, and the ColloWinR Eost NoEEon sYEAol is NhanRed to the CorE oC the
 'third' letter, and so on, Qntil We aNNoQnt Cor all sYEAols oC the NrYHtoRraE We Want to
 solVe

All two letter words:

OG = TO
 MF = AN
 PC = IC
 WS = WE
 PL = IS
 GC = OC
 GK = OR
 LG = SO
 GF = ON
 PF = IN
 MO = AT

All three letter words:

GFS = ONE
 WMY = WAY
 POL = ITS
 OIS = THE
 MFU = AND

CGK = COR = FOR?

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
			L		N	O		H		R	S	A		T	I			E		D					

If C = F, then,

one WaY to solVe an enNrYHted EessaRe, if We BnoW its lanRQaRe, is to find a different HlainteXt of the **saEe** lanRQaRe lonR enoQRh to fill one sheet or so, and then We NoQnt the oNNQrrinR of eaNh letter. We Nall the Eost freJQentlY oNNQrrinR letter the 'first', the neXt Eost oNNQrrinR letter the 'seNond' the folloWinR Eost oNNQrrinR letter the 'third', and so on, Qntil We aNNoQnt for all the different letters in the HlainteXt saEHle. then We looB at the NiHher teXt We Want to solVe and We also NlassifY its sYEAols. We find the Eost oNNQrrinR sYEAol and NhanRe it to the forE of the 'first' letter of the HlainteXt saEHle, the neXt Eost NoEEon sYEAol is NhanRed to the forE of the 'seNond' letter, and the folloWinR Eost NoEEon sYEAol is NhanRed to the forE of the 'third' letter, and so on, Qntil We aNNoQnt for all sYEAols of the NrYHtoRraE We Want to solVe

All two letter words:

OG = TO
 MF = AN
 PC = IF
 WS = WE
 PL = IS
 GC = OF
 GK = OR
 LG = SO
 GF = ON
 PF = IN
 MO = AT

All three letter words:

GFS = ONE
 WMY = WAY
 POL = ITS
 OIS = THE
 MFU = AND
 CGK = FOR

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
		F	L		N	O		H		R	S	A		T	I			E		D					

If E = M, then,

one WaY to solVe an enNrYHted **messare**, if We BnoW its lanRQaRe, is to find a different HlainteXt of the same lanRQaRe lonR enoQRh to fill one sheet or so, and then We NoQnt the oNNQrrinR of eaNh letter. We Nall the most freJQentlY oNNQrrinR letter the 'first', the neXt most oNNQrrinR letter the 'seNond' the folloWinR most oNNQrrinR letter the 'third', and so on, Qntil We aNNoQnt for all the different letters in the HlainteXt samHle. then We looB at the NiHher teXt We Want to solVe and We also NlassifY its sYmAols. We find the most oNNQrrinR sYmAol and NhanRe it to the form of the 'first' letter of the HlainteXt samHle, the neXt most Nommon sYmAol is NhanRed to the form of the 'seNond' letter, and

the following most common symbol is changed to the form of the 'third' letter, and so on, until we analyze for all symbols of the cryptogram we want to solve

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
		F	L	M	N	O		H		R	S	A		T	I			E		D					

if message = message, then,

one way to solve an encrypted message, if we know its **language**, is to find a different plaintext of the same language long enough to fill one sheet or so, and then we count the occurrences of each letter. We call the most frequently occurring letter the 'first', the next most occurring letter the 'second' the following most occurring letter the 'third', and so on, until we analyze for all the different letters in the plaintext sample. then we look at the cipher text we want to solve and we also classify its symbols. We find the most occurring symbol and change it to the form of the 'first' letter of the plaintext sample, the next most common symbol is changed to the form of the 'second' letter, and the following most common symbol is changed to the form of the 'third' letter, and so on, until we analyze for all symbols of the cryptogram we want to solve

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
		F	L	M	N	O		H		R	S	A		T	I		G	E		D					

if language = language, then,

one way to solve an encrypted message, if we **know** its language, is to find a different plaintext of the same language long enough to fill one sheet or so, and then we count the occurrences of each letter. We call the most frequently occurring letter the 'first', the next most occurring letter the 'second' the following most occurring letter the 'third', and so on, until we analyze for all the different letters in the plaintext sample. then we look at the cipher text we want to solve and we also classify its symbols. We find the most occurring symbol and change it to the form of the 'first' letter of the plaintext sample, the next most common symbol is changed to the form of the 'second' letter, and the following most common symbol is changed to the form of the 'third' letter, and so on, until we analyze for all symbols of the cryptogram we want to solve

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
		F	L	M	N	O		H		R	S	A		T	I	U	G	E		D					

if know = know, then,

one way to solve an encrypted message, if we know its language, is to find a different plaintext of the same language long enough to fill one sheet or so, and then we count the occurrences of **each** letter. we call the most frequently occurring letter the 'first', the next most occurring letter the 'second' the following most occurring letter the 'third', and so on, until we analyze for all the different letters in the plaintext sample. then we look at the cipher text we want to solve and we also classify its symbols. we find the most occurring symbol and change it to the form of the 'first' letter of the plaintext sample, the next most common symbol is changed to the form of the 'second' letter, and the following most common symbol is changed to the form of the 'third' letter, and so on, until we analyze for all symbols of the cryptogram we want to solve

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	K	F	L	M	N	O		H		R	S	A		T	I	U	G	E		D		W			

if eaNh = each, then,

one waY to solVe an encrYHted message, if we know its language, is to find a different HlainteXt of the same language long enough to fill one sheet or so, and then we count the occurrences of each letter. we call the most freJuentlY occurring letter the 'first', the neXt most occurring letter the 'second' the following most occurring letter the 'third', and so on, until we account for all the different letters in the HlainteXt samHle. then we look at the ciHher teXt we want to solVe and we also classifY its sYmAols. we find the most occurring sYmAol and change it to the form of the 'first' letter of the HlainteXt samHle, the neXt most common sYmAol is changed to the form of the 'second' letter, and the following most common sYmAol is changed to the form of the 'third' letter, and so on, until we account for all sYmAols of the crYHtogram we want to solVe

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	K	F	L	M	N	O		H		R	S	A	C	T	I	U	G	E		D		W			

if encrYHted = encrypted, then,

one way to solVe an encrypted message, if we know its language, is to find a different plainteXt of the same language long enough to fill one sheet or so, and then we count the occurrences of each letter. we call the most freJuently occurring letter the 'first', the neXt most occurring letter the 'second' the following most occurring letter the 'third', and so on, until we account for all the different letters in the plainteXt sample. then we look at the cipher teXt we want to solVe and we also classify its symAols. we find the most occurring symAol and change it to the form of the 'first' letter of the plainteXt sample, the neXt most common symAol is changed to the form of the 'second' letter, and the following most common symAol is changed to the form of the 'third' letter, and so on, until we account for all symAols of the cryptogram we want to solVe

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	K	F	L	M	N	O	P	H		R	S	A	C	T	I	U	G	E		D		W		Y	

if solVe = solve, then,

one way to solve an encrypted message, if we know its language, is to find a different plainteXt of the same language long enough to fill one sheet or so, and then we count the occurrences of each letter. we call the most freJuently occurring letter the 'first', the neXt most occurring letter the 'second' the following most occurring letter the 'third', and so on, until we account for all the different letters in the plainteXt sample. then we look at the cipher teXt we want to solve and we also classify its symAols. we find the most occurring symAol and change it to the form of the 'first' letter of the plainteXt sample, the neXt most common symAol is changed to the form of the 'second' letter, and the following most common symAol is changed to the form of the 'third' letter, and so on, until we account for all symAols of the cryptogram we want to solve

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	K	F	L	M	N	O	P	H		R	S	A	C	T	I	U	G	E		D	V	W		Y	

if plainteXt = plaintext and freJuently = frequently and neXt = next and symAols = symbols, then,

one way to solve an encrypted message, if we know its language, is to find a different plaintext of the same language long enough to fill one sheet or so, and then we count the

occurrences of each letter. we call the most frequently occurring letter the 'first', the next most occurring letter the 'second' the following most occurring letter the 'third', and so on, until we account for all the different letters in the plaintext sample. then we look at the cipher text we want to solve and we also classify its symbols. we find the most occurring symbol and change it to the form of the 'first' letter of the plaintext sample, the next most common symbol is changed to the form of the 'second' letter, and the following most common symbol is changed to the form of the 'third' letter, and so on, until we account for all symbols of the cryptogram we want to solve...

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
B	K	F	L	M	N	O	P	H	Q	R	S	A	C	T	I	U	G	E	J	D	V	W	X	Y	Z

And thus, we have converted the ciphertext to plaintext using the decoded key. We then used toUpperCase() on the plaintext to achieve the result below:

ONE WAY TO SOLVE AN ENCRYPTED MESSAGE, IF WE KNOW ITS LANGUAGE, IS TO FIND A DIFFERENT PLAINTEXT OF THE SAME LANGUAGE LONG ENOUGH TO FILL ONE SHEET OR SO, AND THEN WE COUNT THE OCCURRENCES OF EACH LETTER. WE CALL THE MOST FREQUENTLY OCCURRING LETTER THE 'FIRST', THE NEXT MOST OCCURRING LETTER THE 'SECOND' THE FOLLOWING MOST OCCURRING LETTER THE 'THIRD', AND SO ON, UNTIL WE ACCOUNT FOR ALL THE DIFFERENT LETTERS IN THE PLAINTEXT SAMPLE. THEN WE LOOK AT THE CIPHER TEXT WE WANT TO SOLVE AND WE ALSO CLASSIFY ITS SYMBOLS. WE FIND THE MOST OCCURRING SYMBOL AND CHANGE IT TO THE FORM OF THE 'FIRST' LETTER OF THE PLAINTEXT SAMPLE, THE NEXT MOST COMMON SYMBOL IS CHANGED TO THE FORM OF THE 'SECOND' LETTER, AND THE FOLLOWING MOST COMMON SYMBOL IS CHANGED TO THE FORM OF THE 'THIRD' LETTER, AND SO ON, UNTIL WE ACCOUNT FOR ALL SYMBOLS OF THE CRYPTOGRAM WE WANT TO SOLVE..