

## Tugas Kecil I (Tucil I) IF4020 Kriptografi Sem. I Tahun 2025/2026 **Kriptanalisis Sederhana pada Algoritma Kriptografi Klasik**

Batas pengumpulan : Selasa, 16 September 2025, Pukul 23.59 WIB  
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Anggota kelompok : 2 orang  
QnA : [Sheet QnA](#)  
Revisi I : Kamis, 11 September 2025, Pukul 15.45 - Cipherteks pada Hill Cipher

### **Berkas pengumpulan:**

Laporan (*soft copy*) dengan format PDF sederhana yang berisi

- Berkas cipherteks
- Langkah-langkah yang Anda lakukan dalam melakukan dekripsi
- Kunci yang diperoleh (jika *applicable*)
- Plainteks hasil dekripsi (jika mungkin, diformat kembali dengan format asli)

Kumpulkan dengan format **NIM1\_NIM2\_Tucil1\_IF4020.pdf**

### **Informasi Tambahan:**

Pada proses pembuatan cipherteks, plainteks diubah seluruhnya menjadi kapital. Lalu, enkripsi hanya dilakukan pada karakter abjad (A..Z). Karakter lain (angka, spasi, koma, titik, dan lain-lain) dibuang (tidak dienkripsi).

## **I. Legenda Kelahiran Nebula**

Demi penelitiannya tentang sebuah nebula, Erik Velsig mengunjungi salah satu perpustakaan terbesar di dunia. Setelah mencari puluhan tumpukan buku berdebu, Erik menemukan sebuah buku dengan judul yang menarik perhatian: “Legenda Kelahiran Nebula”. Erik yakin buku ini membahas nebula yang sedang ditelitinya. Namun, ternyata seseorang telah menyamarkan isi buku tersebut. Erik menduga bahwa enkripsi dilakukan menggunakan ***cipher substitusi abjad-tunggal (monoalphabetic cipher)***, dan bahasa aslinya adalah **bahasa Inggris**.

Bantulah Erik memecahkan cipherteks berikut. Gunakan analisis frekuensi huruf, bigram, dan trigram dalam bahasa Inggris untuk mengungkap pesan tersembunyi di dalamnya. Gunakan juga kemungkinan kata-kata umum dalam teks jika dibutuhkan.

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CGVDVXUATQAGAIGATQGAAFIRHTVHUGOPOAPJIGUPJAMFVGDMTQAGAIGATQGAAFIRHTV
HUGOPOAPJIGUPJAMFVGDMJVFPQIOAKVGXVTTAJIKAFZUTVJATQPJXPHYAGTIPJTQAKI
YTTQITRVUFQVIGAGAIMPJXTQPHJVFFPDDHUGOPOATQGAAFIRHTVHUGOPOAPJIGUPJAM
FVGDMIFAZJVOADC DITKVG NKPDDAMTQAHYGAAJVKNRVD MHNIGTCQVJAPHYGVDDAMMV FJ
IJMTQAJUCIXIPJQVFNIJRTPNAHQIOAPZAAJMV PJXTQPHGAIDDR TQPHPTQAAJMPDVVL
AMIXIPJIJMTQAYVNCDATAFIHUJNPHTILIZDATQAHTVGRFIHVOAGTQGAAFIRHTVHUGOP
OAPJIGUPJAMFVGDM IUTQVGT DHYQICTAGHTQGAAFIRHTVHUGOPOAPJIGUPJAMFVGDMFI
```

HIKAITUGADAJXTQKIJTTHRJVOADFPTQYQICTAGHPTHHQVGTAJAMJINAFIHFIRHVKHUG  
OPOIDPQIOAZAAJHTAIMPDRGAIMPJXTQPHJVOADHPJYATQATQPGMRAIGVKNPMMDAH YQV  
VDMUGPJXTQATPNAFQAJPFIFHZUDDPAMZRPDEPJHFQAJPGUPJAMNRAJTGIJYAABINPJIT  
PVJHIJMQIMTVAJTAGIDVYIDUJPOAGHPTRFQAJTQAMINJAMGIJMVNMGIFFAJTFGVJXIJ  
MPFIHCDIYAMPJTQANPDPTIGRUJPTITTTQAKVGAKGVJTFQAJPGACAITAMDRHFPTYQAMEV  
ZHIJMINJVFFVGLPJXIHIIYVJTGIIYTVGKVGIIJIKKPDPIITAVKIDIGXAYVNCIJRMINJDATA  
HTVCTIDLPLXIZVUTTQPHIJRFIRIUTQVGHFVGMHTQIJLRVUHVNUYQKVGGAIMPJXFIRHV  
KHUGOPOIDUCTVQAGAPFPDDYVNAZIYLTVRVUFPTQIJACPDVXUAIQTQAACPDVXUAHTPDD  
GANIPJHTQAJTQAJABTYQICTAGPHGAIDDRTQADIHTVJAKGVNTQAAJMVKYQPDMQVMTVI  
MUDTQVVMPTQIMZAAJMVJAVOAGIQUXACAGPVMVKRAIGHTQAGAFIHINPBTUGAVKMAHCJV  
MAJYRTQITIFVGDMPFIHYVNPJXTVIJAJMIDVJXFPTQIIHAJHAVKHITPHKIYTPVJPVCAJAM  
TQAYVNNAJTZVBVKTQADIHTNAHHIXAIJMGAFGVATQAHAJTAJYAHAOAGIDTPNAHLPNMV  
LEIFGPTAGTQIJLRVUKVGAOAGRTQJPXPJTQANAIJTPNAPINDVVLJPXKVGFIGMTVTQAAC  
PDVXUATQARFAGAHPPJYAGAHAJTAJYAHFIRHVKHUGOPOIDFIHNRDPKAHJVOADPTFIHJTT  
QANVHTCVCUDIGZUTPTFIHTQAZAHTJVOADKVG NATQAGAFAGANIJRFVGMHPFIJTAMTVHI  
RZUTPYVUDMJTFGPTATQANPFIHIKGIPTQITNRYIGADAHHFVGMHFVUDMQUGTTQAFGPTA  
GIJIOAGIXAVKQPTH CAGYQICTAGIJIOAGIXAVKYVNNAJTHTQPHFIHTQAI OAGIXACVCUD  
IGPTRPJMABVKFIRHVKHUGOPOIDTQAJUNZAGVKOPAFHKVGTQAKPGHTYQICTAGFIHZUTP  
TKADDTVKVGTQATQYQICTAGIJMTQAJKVGTTQATQYQICTAGZRTQATPNAPTFIHTQATQYQIC  
TAGPTFIHVJDRQPTHFPIHVOAGFQADNAMZRTQAKAADPJXPXVTFQAJPHIFTQAJUNAGVUHT  
QITICCAIGAMJABTTVTQADPHTVKYQICTAGHPJHVNAIHAHTQAGAFIHZUTPTFIHDPLAD  
RHNNAVJACGAHHPJXTQAFGVJXZUTTVJTTQIJLRVUTQAIUTQVGCUZDPHQAMIJVOADFPTQN  
VGATQIJYQICTAGHFPTQEUHTQPTCAGYQICTAGVOAGICAGPVMVKRAIGHTPTFIHTGUDRIHT  
VGREUHTKVGNA PCGAHAMVJTQAGAYVNNAJMITPVJZVIGMIJMPNNAMPITADRHTIGTAMTI  
CCPJXVJTQALARZVIGMPINGAYVNNAJMPJXIQVJAREINJVOADTQAIUTQVGFVGTANAIKGA  
AYVNC DATAMJVOADHVP HQVUDMXPOAQPNIGAYVNNAJMITPVJPYDPYLAMVJTQAYVNC DATA  
MZUTTVJIJMYVNNAJTHWUPYLDRIICCAIGAMPTDVVLHDPLAIJAFIJTPPHAIGYQAMKVGTP  
HCAGHVJHPMIJMTQARGAYVNNAJMAMTQAHINAJVOADH AOAGIDTPNAHPHJTQPHGAYVNNAJ  
MITPVJZIJJAMTQAIUTQVGHQVUDMJTMVTQPHQAGAPT VYYUGGAMTVNATQITPQIMFGPTTA  
JIGAYVNNAJMITPVJHAOAGIDNVJTTQHIXVPJIIJPJHTIJTTQAGAFAGAMVSAJHVKYVNNAJT  
HKVGPJOAHTPXITPVJZRHCAYTITVGHNRKIYAKDUHQAMFPTQANZIGGIHNAJTPFIHHUGA  
TQITTTQAIUTQVGFVUDMGAIMTQPHHPVQUGGPAMDRTGPAMTVMADATATQANAHHIXAZUTPTF  
IHIDGAIMRGACVGTAMTQITTTQANAHHIXAYVUDMJTZAGANVOAMTQPHPTFIHUCHATTPJXTV  
TQPJLTQITTTQAGAYVNNAJMITPVJFGPTTAJFPTQIDNRHPJYAGPTRTUGJAMVUTDPLATQP  
HPKTQARAOAJDVVLAMIDPTTDAZPTFQRM PMJTIJRVJATGRGAIMPJXTQAPJTAGAHTPJXJV  
OADPFIJTAMTVXPOAIMVJITPVJTVTQAFGPTAGZUTPYVUDMJTIKKVGMPTZAYIUHAPFIHI  
HIDIGRFVGLAGZIGADRIZDATVNILAI DPOPJXTQAJPGAYAPOAMIJVT PKPYITPVJTQITIN  
AHHIXAQIHIHGPOAMTDHTQIJLRVUINAHHIXAKDAFPJKGVNVUTVKJVFQAGAPTTVVLNAIF  
QPDATVXGIHCTQAHPTUITPVJLPNMVLEITQAIUTQVGTDHPTFIHTQAIUTQVGVKFIRHVKHU  
GOPOIDTDHPFIHIZDATVYVNC DATAPTTVTQAAJMTQIJLHTVRVUPIDHVFVJTQAYVNCATPT  
PVJPYVUDMJTZADPAOAPT FIRHVKHUGOPOIDFVJIIYVNCATPTPVJLPNMVLEIYVJXGITUDI  
TPVJHFQITPHTQAYVNCATPTPVJTDHRVUFVJTLJVFPTZAYIUHAPTHIJUJLJVFJYVNCAT  
PTPVJPFVJ MAGAMPKQADPAMZAYIUHAQAFIHIHQINAMZUTPFIJTAMPTTVZATGUACAGQIC  
HPGAIDDRMPMJTLJVFPTNPXQTZAI ZPTQPTVJVTQAGCDITKVG NHPFIHIDPTTDAHIMZUTP  
TFIHXVVM TVQIOAIJABYADDAJTHTVGRHCGAIMPJXTDHPFVUDMDPLATVHAJMIHCAYPIDX  
PKTTVRVUIHITQIJLRVUMVYLPNXPKTTDHPTPHTQIJLHTVNRMAIGGAIMAGTQITTPHHTV  
GRQIHYVNAPJTVTQAFVGDMPXIOATQAFGPTAGNRANIPDIMMGAHHIHQAIHLAMTDHIQGPXQ  
TPXVTTQANVJATPSITPVJHYQAMUDALPNMVLEIFVFGAIDDRFQAJFPDDPTHTIGTTQPHNIH  
TAGCPAYAHQVUDMOAZAAJCIPMKG VNTQAZAXPJJPJXPTFIHIDPATQAFIRHVKHUGOPOIDF  
IHIMI PDRHAGPAHHVPFVUDMOAQIMTVHCAJMFVJINVJTTQFVJFIHVJAYVJOAJPAJYAHTVG  
ADUJYQKVG NATDHTQANVJATPSITPVJHTIGTHTVNVGGVFLPNMVLEITQAJTQAACPDVXUAY

VNPJXTVNVGGVFFPDDZACIPMTDHRAHPNIKGI PMRVUJAAMTVCIRKVGPTLPNMVLEIVKYVU  
GHAPQIOATVCIRPFPDDZURTQADIHTVJATQAGAFIHJVGACDRKGVNTQAIUTQVGIKTAGFIG  
MPDVXXAMVUTVKTQAHPTATQAJPKADTTQACAHHPNPHNHPJLPJDITAGTQAIUTQVGDATFP  
TQVUTIGACDRIKTAGQAHUYAAMAMNRIMNPGITPVJTUGJAMPJTVCATTREAIDVUHRFQITF  
IHPHVABYPTAMKVGPIJRYIHAPTFIHJTNRJVOADFPDDQAXPOAIXPKTYAGTPKPYITAPTF  
VUDMZAXVMPKPTHKVGJVJITTQITTPNAPFIHTQPJLPJXJIPOADRPMPMJTLJVFIJRTQPJ  
XIZVUTFQITFVUDMQICCAJTVTQAFVGDMTQAJABTMIR

## II. Surat Untuk Sang Ratu

Di tengah suasana perang di Prancis pada tahun 1566, Blaise de Vigenère membawa sebuah surat atas nama Raja Charles IX yang memohon perdamaian kepada Ratu Elizabeth I. Surat itu ditulis dalam **bahasa Inggris** dan diamankan dengan **Vigenère Cipher** agar terjaga kerahasiaannya. Kapal berlayar dari Roma menuju London melintasi angin yang tak menentu dan ombak yang menggulung. Di geladak kapal para pelaut menjaga peti kecil berisi naskah itu dengan hormat seolah memeluk harapan agar dua negeri yang terpisah laut dapat kembali tenang.

Namun nasib berkata lain. Satu satunya orang yang mengetahui kunci sandi wafat di tengah pelayaran akibat demam dan kelelahan sehingga rahasia kunci ikut tenggelam bersama napas terakhirnya. Kini naskah itu telah tiba di London tetapi isinya tetap terkunci dan waktu berjalan. Bantulah Ratu Elizabeth I dengan mendekripsi pesan tersebut. Gunakan nalarmu untuk menelaah **pola huruf** dan **panjang kunci** serta terapkan **analisis frekuensi** atau **Kasiski Examination**. Bila berhasil bacakan isi surat itu sebagai suara perdamaian agar perjalanan panjang dari Roma ke London tidak berakhir sia sia.

LTLTPDLTYELWMQUMISBEVYSXLVJFFPKWZELZBUEFTFBTPTAJPBHNDVUWCSEAPHMTTC  
ITPSXOQVGDUAMRUIKAGFBPTSEJELWUQQNQMFILRULQDQNHIIJPHWCQJYCGYEJPGJLB  
DLNVVMFYWALCUDJUAEPXGBZQICCTBRDWSKWUNDVOEYZPQZMHCLTPTVLXLOMHRETLSJ  
HMKOWIGNUVVVCIANVDHSJPSIZCSSURNWGYWYZHWZQUYEGHCVLWSAZHUHWYEDZVWKCUU  
QNLTYLRSUGYCRVVRPELWFKRBCUDDPXSIBVTHVRVJSMHXOUXPYEHFIKATHHSAVUISE  
FKIQXKQPCVESWULWBTHRKSELHNI FFEASFFVJLIOGHCUYPPHJIOFQCJKTZRUVZGNDQ  
BRKCSMITHXRQUTZYIFAGROZPVWNPPDAPHQTKNHKZJSJZRQCKUSLNL SZMDMDPAHVQMJL  
ARZSKZCFCHZHDHVJTUEUTRGBZWILPZAEOGGBVWLNUPD VDXZLGFBNSTYPJALTGMXPOA  
IGIKAIQXTOWTPELWDWUEGQVMJTRL OMFCIKLSDZXZLVAGKLVVXEYPAWLPVLSRCIHYMV  
MTFIEPZRVPAPHCUARVYKLOIQXIJLYFFRYHZHNPWNHKE SVPAWLJUATYPMJUMLAWDVRJH  
LWUBKYN UOOLWHTLTHUGPPNXWILAMUMPPKTI LHWZNUUCELBCPIVZGHNTXLRPOVGWBKUI  
HHLCDXZLZHMICPNJELWWM DWTQMOLCGGTURHHGHFFCXZLKKUCPLLRHYLQMUGTVWJPEK  
KWQII FFPVZOIGBZIUIGZTYPCTPVGNWGTWYPRXYIQWTKZUEDILATHXTPNLRYHEBAWMEGU  
DKZASAKNNGJORDXJLAWLPKUBFWHUHXWUXPZAEOWGBKYGGZTCPWKTQQXHYOE EPRYSI  
QXXUKRRHRAUBRKJCYRVWWTLGRHSJLRSZVVLZVZGCUCVXYKAAWCUHLNYPVXYWQNXGYSR  
YHKOCWAPVLSKSELZPROAFIEFAIFMWUNGCKENPLSYUHURJVTYPVTFIFWXFLNKPZWUEKY  
CYLIEEIFKWQYPPVTYPVFVPXLIKOEZXLVBWNWCAPRDWAVVUGGZTIZRYTMQIUTHNBLR  
VTMQIUVOEDPEFLAWMDTAHRGILHSHHHKKEJLRVZERLCVOEZCSSAPVQDTSJSJSEJWMQMIG  
LLPPXAOIYYHGLNZYXZLKROGVZOWCSELIQXXPAHVWILAMUMUTVMFFVHYWYCCELSYZAGM  
BHHHJHRGHSJKAPYAVDHVYEDHEIOARYODTWWPAVYIFVWELRVRMSNDTKEITWLOMILXGUD  
FQGGUAFCTPJEZQXZLZHVTCDAPE SUHTPNWGAUDFLDQWBDWAFFCGAUODHNUVUCTWAAVR  
NLQYTYJSXFWXLGQFACHMKKWPNDVYYZEEFKERLIJFOWZYJZBRGTGAYFFLSSNZUNVOEBT

RYAPHLTHVRVAVGWWVYHVOAKHIKLBROGHLEKFTGUBKLTGMIIXWLVVHMUKYSKCLKWUMUUA  
CUDZXQWKQDNTELSJLXAVVRZPTTSKSVGBOKIJVAHVVMFNLRGDHMRRYGWAWEYGGJOXYMR  
LLDHSTLSGPGLLLESIJVSVHLGWSREIQLNXWEFKNRLWQWFCJGYPHFECZWVWPSZJBNWQZ  
ENSSVLXHHSQUTYPJJLVFBRTVWEDIUVVGURQUGIPWKAWVYIVSEUFVSITHNTTTSKZFWOM  
OXXPHPCLGWHOUYTFHSJLJWHVGBDPVRRMPWAWDFARHRKTIKSMWCIDLATTXQVNJIDFUAD  
PEFKMDMNCJCVDWGUMWBPVIOKSWAKMVWPPARLDXNLVLWTQMFCWDVJVJYMRLRZPRULQQK  
JKLTEPKGAQDNXQUIWJSYUDDTUAYGCIXLZVWAQZEIDLGYMVQTYPLCNSFZQGYGCUYGZV  
LAPDNVTHNKDJJLMFIBKUGRYHYVQQAIQAHVPRNVGVUCFMAZCLWHZLHVVBFFELLOQUXBW  
AURWKMHDHIGLSKZFZWZERLCDFPITRULADHSIYEREPGYLVICGPTYPVKPLHUCFDIKYIKZ  
MGVNPLUKCEDWWZYGUAHREXZLIUNXESEJZRULUDXTUOACFWRMSNXPNOFOJSPBKUCFAH  
REHAZXXNTUHRZDMFNTDNTTZHRWPTLRXXVGKBPWEOIMIIGGAHVJFWJWPYRCBSVQSJUMZ  
UGOZTYPWWNCDLPPAEVDQMZBEYENHIELRVOCPUVOOJPAZVPDPTVHKVYXZLNLYAFZHHF  
PVIMSUGFVNOMXAPHSEWADFHRLOMLLLGHFPFYWLVEQMIJHTYLZWPDPDHVGKHRYHKZPROA  
FIECPJLMZHYDHYEMPRYLPROHGZOWAVSFMUUCFZCYZSDZAKIJNKBVDTSYMGZGQTSVTDM  
YMPUGMLTJLRVYWDXHOBKSKMIGWMQYSUVBIPEVDWRFHCSTRYHOPVHGPATOMPEYHQQGPTP  
NVCWOOWKUKGAABPRHYQCYHKUHVVLXGMHHUAUOOLWHJLAWIGGDHREGSUJHLTUAOIPHSUL  
EYGGSERDIVMZRGUWYTYPVUSILGXHAHVJHGZWDNDPJJEVIMDLAROVJATFCILBZQNDVOEZ  
CLWHZWBHYPTYZYLMMDLCQNOFOTWHKHWPPIESFMDAWQZTCYYFFAASDMZRLRYLTKD PDN  
TPNLRYHEBAWXDKUAWCIFJPTOPTYECTEFZEHLKKAHWCEFRVHMHGUGCLRVPADFGGHDPOV  
SDVLHIJVUXSRGAJBSDWYIEEIFAUHHHCPLWCSEFWXLWCYBFCWOPBKNWGOOGPSXYMZUGF  
HNUELWDIULPPAOWCYEVZWBTAJAICCEVZHNWCUPFHHWYIQXHJVTKSIQJIULNCZTFCCLO  
IWNWGXUVPRGMMQAACUDZDVWZWOPTFAHVHEJZAKIJNKNVGIJLVGSDWYMRUIKAGUHPVT  
JASCLVVORJHWFCHQLBWBTAOIJXJHDHFHHHSPVLOIQSDWYPIZGDHUDNXQUSRYHLOIW  
QXPKEVPHKVCUZXTLIWJSMKMFFPTLIEAYTSQFNWCAYFFAASXJWQSDKSILYCFYUQYBZO  
WMJKRLIQHNPHLGI ZHUZKAAEOWWULPCCKZTVCWGMBUOHVAOWCEELBKYPATAITWIKFWXQX  
NSUEXECLBKHYHVRPTRSKIBNWQZENSDDVDHSDWYNRXIXVZLNHUAEROMFLAVQXNSRVUSA  
JMDHSVOOJPAZVULMJULIKHMDSJHMWCTEUOSFVBWBXPRTYLXXYIQWTULEBDCGBZYIXEL  
OEWCLVYXCTVAHF DIOOWIIANVWPZYOLIOMDPLEUELWJWXLPILTYLXUVUHMUTVMSPMFNA  
HYCDFAITZSSELNWQBTYLXJLLBIJMUONZYJOWXMTJHSITZSSAZCIJPNRYHHYVMJTLN  
TXZVCWNWGSNNMUBUCTUARVXF DLASUXPDAKNLWZMYYG AJHRYRWSXUCCELSFQKWYUDH  
NNPSKPRXVZDXKCUTRIAMMQAACUDUPGDH ZHMUQYPVLGWHVGFYPYAHVQEUAQRHHCTOERY  
KSWVYIJLIIQSJLQJHWQWEZQCGBIQXIJLKZYKKAIQXIQNEKSIJIMIIGGLUIZTWHAJOPT  
KIRYWG MWUXTTHNUEVSMNLWIJLNKSISKDHHIWEIDAZVXUIUKABPNSFMCVCDPDICWJAU  
LQIEQYTWC MWULOSIQAHVTVLYQFEHVOUJELWWMRJAGDHF OIKPZHHDVOIERQGYMWBPPZT  
VLHQDWUEPPKSRQIBVCUHTADICWFDLAVVDVOYFFVFHUHMNBHRIKOWZHIJLWFCPVAPD  
NPYPVS DSNLZHCVPJAESSDKIPCMGKRVLPEPVTOXGABPELWYCOYDHSANLRVIGPYPUBRVO  
AGYLVQTCZKPZYLVTTHHSVOAKDEELBDFTPATFZYJZMWNAGTEEECBZHHKQFMZRLLZMWXD  
YUWZELGBZVUCFDIKSSLOMUMPTBLVQS JAPHWDPKUTESXWZHURJPNXELWZMFOGKAYFQTJ  
PDDNTJVMVDXZLXUIIGJTZZRGMUDAXUARREIKHVGNGWZGWZQXHBVLMWOLNKZJLOWVYLJV  
RZZXMULHLIJLCCZECVNCYPNDHVCIUUVVWXGUCVDHAMNHLIJLLRHGSUSHYEJHNUDJJVU  
WBGQHTJHLASMWLJVOPVCWMHLHMXPPTJZAF AQPYLJLRVNYKAWPMRQSLZOILOMOULEHNX  
TZWLDHLNOHNEZXAJMRZLJHTZDTWYULNIGKAE OAZHBLMUQYBZOHUARNWCANFYIAZBUU  
ERLDSJWMYXUCHGZUTSEJBTHQXNSNFETDLIVYTXLRPQMJLJUUCFIUKTXOPTOMPXLTYZY  
KHVGMLJVNVG IJZWXAWVHQLLVJLTLZNQBGI LRLAPLMGGXUVDXLOMNCCIDICWEURVRQAG  
KGVTFVBRHAAPNNZVVZJXNXPHCKDLWDQOFRQUFZCQKHNHWDPKUZEWXVZHVNPSYXIJJ  
PDHIUZEKNS ETQVMXQUSKZWWABOYRNHIDDJGYTRMHGZIECIULVWSTCYSRYHSWXRCCVQU  
URIKVN NHDYUFRTVFLAVNDJLAIELWTPHQXNSRVDXJHQQNWGOERESXNWYYGPVRJLPGUOW  
BTEVAJEEFFKRGBCUDKSIHVZWMIQARVLXWUOCHJZH ZAWOPBKBDPVRYPAASTDFHQZEEO  
XGFWXNWGUADPWGMBKIHGOIXSPGYLVQWQDICWKACMWBTKYONYGJLLNPUWL VOKWZNR LI  
JLPVLGWZWWBPV FOLXEQQCGATQBRZYXWUBESI JLQLLPAAGRZIJLHFDXSNMVQTCYENTPD  
PVJNDQMFVCXZVCJBXJVPVYSZVAUVGDICFWFHANYSDLYFYHGBZZIGFHNUDI SSQKUKGD

RZEXWUTRHSVLCRFFWWAPHAGKLFZDKJLIWCTPKWZELLOQVCIKZIEJSMYXRQTTAOFMWAI  
QIXULTYXLXELVRHQAHJSSJLAKUKGAHFFKZAMWYGPHLFYIHBJOCRCJTWCEFWXLWCUDF  
YIUSMDLRQBPNJPLVBKIHGDHFWMKAMQNDVURYHOLAKUANZEVQMWSLVMDYUWYPVWAZHH  
RJLSXLTWAWGUNEIOICOVWUELFANLAIYXGJWXHIIYAZYRGAXFAGASKSIUHZWQXNSPRDW  
SNILHPVKANYPWABKCHDLTYPLSYDHMIDFWYTGZAPHSTCYFZQXWLVVCMVFSZIMKYMPYBD  
LRVOMJLUDCCYPTYLPDKCWSPPKRVDTWJBEPFKZEUPZANMQYGGZETCILHZBNDLBSKPHWA  
WXLCQUADMEKZIGIGQMHZDQGZBPUYGZTPNLSYTHMXZAOKSIZVTBMTGMRFXVGTMBWBXUFE  
RCSXVCUFDTKFZQXWLVVCMVFSZI

*\*This is a work of fiction. All the names, characters, businesses, places, events, and incidents in this work are either the product of the author's imagination or used fictitiously.*

### III. Resep Air Suci Kehidupan

Jung Sinwoo mencari obat untuk ibunya yang menderita penyakit misterius yang disebut "Eternal Slumber". Penyakit ini disebabkan oleh paparan mana (energi magis) dari makhluk-makhluk mitologi yang terlempar ke Bumi. Karena berhutang budi, seorang makhluk mitologi yang pemalas dan tidak suka diganggu memberi Sinwoo resep untuk mendapatkan obat yang disebut "Holy Water of Life". Karena Holy Water of Life bisa menyembuhkan segala penyakit, resep ini selalu dijaga kerahasiaannya dengan enkripsi **Playfair Cipher**. Resep ini telah lama ditulis oleh seorang penerjemah **bahasa Inggris** sehingga sang makhluk mitologi lupa letak kuncinya. Sayangnya, dia juga terlalu malas untuk mencarinya.

Sinwoo telah bertekad untuk mengungkap resep rahasia ini demi kesembuhan ibunya. Sinwoo tidak mampu melakukannya sendirian, tetapi dia juga harus berhati-hati dalam mengungkap keberadaan resep ini. Hanya kamulah yang dipercaya Sinwoo untuk membantunya. Gunakan analisis pola pasangan huruf (bigram), distribusi karakter, dan kemungkinan kata-kata umum dalam teks untuk menyusun kembali matriks kunci. Tolong bantu Sinwoo sebelum semuanya terlambat!

XUYXHEDVAPYLFHBFYGHUVDTVADYGRCTPELHNNHBOADUCEFFGEDMTSIOGDRNZGENYE  
GTCKEPNNEUAGENYEGHNOUKPEPSNIADFGTHHFCUKTUACFSIPUCNDVFEHFIYTSSKKEIH  
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YOTDSKNEDOUUEFFODVTWSIWGNLDEDAUTHETHCUDHLTDEDACHKZDYXNOERCHEFPZYIH  
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YSIPWFYAU YIAEDFLHFAPYDYSMP TKZTDMHDSRIXCKIQHFOCGLCFRNZTUQPSEFKDDMYMH  
PNIOCBTDALPHEDSZTKZISQRHIYKHNTSSKL PHEVTYQT NATYQPTURFYKEOQYSCFIQUMSI  
WBLYEDWYHCRAHFNHUALSCKHICHVIHKSILHRSUBQRHEFPCHILHIEKHCDRVFEFYHTSPGH  
NIACKCFTUKCFRNRTKDFOYCUYWN YDMHEHPWFYACNWT COHDI PCOHEUBNHUA PRFCQXHCUY  
NPCHFAPHSKHKSILSKRADCYLOKTHYMFVHNHNSLEHDYWDDRBTBMBYOTSIIHCKYMC L PAL  
EEDKCDIFHCOHESPKEOHTZSCYDCFN DVTIAUYPA AHTSUGFPCFDHEDHYPDPTVFGBNCKCK  
YNAPHTUAUFVFFOIBHYDTPNFHCKEBDTUFKNFXDHDALOTKBMWTTASILHFBHCHE SPSPHET  
HKECHZTUQPSEFYCPCMLYAGEHFDVFEHFRFCNF PUBQRHTKHSIIHDTRAYDE DYHEDAPOUCE  
PACHSITIHEYBRBNYTKYLVTPGHNWDSIQSFWKTFTTUSAYBRBCHXLFP CFDESPTFHPKEOQY  
SCFGSHKDAKGUDUOPUSOH DATUAHETPFVTWPNOVPFFHATCEHTGKBYLEEDFHKEPIFBTC DY  
HDBMGBDRETHUHYNOLNHTTLHUDMHEAFETRUEHFFVHNUCYLVTDYHCBSDFOHSPFACSF EA  
PDITKMIHETPFVTWYFIXKG DALYPNUVWFFSHCAYYBK TUPDACKTUHIIHFWNROSXLWTADEF  
FRNEYHDVFAIEHEFPUBUATHUYPKHNYCVI WTHDMIADIHFCFTATUAHEAPLYWDNCVTT H FCS  
EFTEFFRCUTPBMMYCZDHEDFHZTSISISW SHCDYEEEDPTVFGTIXCKZKSLEHURFYKEOQYSCF  
PHWYHCRAHFNHUA FEAPHEHWNTIAZTWCHFAAH CYKTLTGETHKEIGFPDYEEEDPTVFKTIHE  
DSYHYFUTRSIHETVUTIHCOHESPXYFHYCPCMLYANHUA IHBXXUCSPA UQPHOSIEDALYFHPH  
XLWTATIAUQPGHCTLSKTKHCWHNCFYHNIHEDDRBYQSTZAPADEBLYEHTSPSZTWHRANMNXN  
XNXIDEDATMZMKSIKHOQCHR COEYDNHUAMLPAPQCKSPEDTBDTMP SKCUMIHEDAHCBCFACK  
KEHDYHCOLMMYEDXFUTXBYLELHNTHHETHXYVTIATUSKOUSKCKNIDVWFYADATKHFEIPTF

YDABMBYOTPHHCGRQZVLTRKEIHEDFHCKTKHFAlFBHNBMBYOTYLMYDATSGRDTTUKNCUOP  
PSCUTZHPNHWHENWFWHCDAWDOCFHTSTIUBETEFBCNYLZEHDAHEDSIOBFASGHTDIDFYEEDH  
YDPDTVFWYYBBYLPSKHEHWNSADCOHEHPHTDITFUBETEFLPAIHPPHAHEDADIHOSYAUUYUC  
YEEDPTVFMYSUBQRHESPSFCYHPIRUBETEFWDAPDKWTDYYKRUTWRCGUHFEEFHEHPHYNOD  
IFHCOHEDHOSTPFVTVWHESPUPXPHFQTHUYPAVUHFPKNDENHNSKSPYNYCKYMILVICNHDT  
UBOHHPSLIPLNBMGIHEDWBIFWYSIACOHEDTYDDTFCTNFVTWETUGDVAPFHLSIHHFDASIR  
CSOADPSKSNGLMBTTHEKETYMBYOTKEIHCZAPDKCNLAEDKGPDSFSIDYCEYDDTFCTHEDHY  
PDPTVFGBNHUCGFHWSPHDFHTUSASPADPSKSNGLMGIHESPKENHINPAVUAFHDODADEFBYI  
VAPHEDETAIACKYLYNNEHDAHCDRZNSFHDKBIFWYSIASITIADPSKSNGLMGILYDRSBEHSI  
DVDADADYTUFHYAMISIEFIHSLTHDFOHHPSLISYTRITWOPUNIALMUCLEETHETATKKERIW  
DAPHEAFHNFVEDHEHFLYKEUGHCTWCKOUCXBLMTUSKDYKTNIRADKBIFWYSIASIDYHEDA  
HPSLIPLNBMGINEFATUFHYASIEFIHSLTHUYPKHNHPPHIANBYIKCTYEHFTUMLWHIAMY  
CBMWTYASIBHTHEKLYDRIDKGSILNSKTKXYIHDYHEFWYUIACOWHDMYLSKHOFFTFNRUBBT  
HEDWBIFWYSIAWDGOUBQRYLIADEDMYPHNDBTHPSLIPNEFACFLYFHXSSYDAVTYLONBYN  
PMIADPSKSSIBHFBIACTDLBMMLVTHDFCPWFHYNPSCUKTXUYSSKHEFCSBEHEDISQRDLID  
UCLVRLUDUOPAUQPSNPDLFMPTLPSKTEYBRBCHZTVTUQNHWHENWFWHCDANHILSKHETHHED  
WBIFWYSIACOHETPFVTVWYCIBOXTWPYHDTUIAYDEDEDADPSKSPUCNTWDHNREDNZHEDAHPSL  
PCSYIHBMBYOTLTVTUTHTWCTYAPMTHDATSUHHPSLIPLNBMGIEZSYDITKADPSKSPUCNF  
ESPULWTCKHOAFRBISACKGDFIKIYRDLTZTHDYSTKNMDAWDOCFHTSPHFTIGCDTUSKATHT  
HEDWBIFWYSIACODCHDHCCDYCIBTUHYDTBMMIWNEDHYPTTUYNLPYLKNHNDHEDFHPUCUP  
HNCVTKDNZSIIHCKYMIMCDTUSKHEDTYDDTFCDKBIFWYSIABFLEEDHEUBQRAYFCUQPHAE  
SPTLUAHETHHEDAHPSLIPNEFATLQRYMSLEHNUOCCHXYVTIAYCVIWTDOYDNHUAMLPAAGH  
FDVDHRADASIDYHEHPNEFAHNHYCUKHUALPADOCNIATYLCUENRFTZUTIHOSYASOHPMLQZ  
TLSKNUKEOHPSELHNUTAPYLNCMYYDEDHYDPDTVFGIDVAPSIHEDEYBRBCHSENYLTHKDVD  
TYGPTYSHIFHTKHESPSPQSDTYMBYOTYKAPRADATSPRSPELLYDRIDFHTKNMSILSDMHESP  
KEPIYLNPHTHOEKSILSIAEDADPSKSPUCNAVUDYXSILSPACNESHCHITUVTIPIUYIPYIWFU  
RYVTHHFNFTGIPUAFPYNYTHUYIPCKTXDHRHUCOUYSISIKHFHTKMLUANYTHDACKAHETEL  
HNIATKGIHYHPUHSPHYULIDUYIKCDAOYXSFFHPPSEFIHFHFSKHEDZNTWYCFFANHUAWDUAS  
ILQYXAPHIIHCHSIEHEHFZTWTVUCKPSCUYCFYPYNAPHICKEXHCUYNPYDEDOHTHDZTKXY  
IHTKMYEDSIOCYQTHUYUZPADADAOCFYCUIHOSYAUYPKHNTUPUKTFTTUELHNENHFPFYAA  
DPSKSSIADDAGETHUCLPYMUDCBIGNLHFHPDYCHYLCUBFCGCYIBHUHTYHVFEFETEFAPUBQR  
ZTIUFBFHSNIHFCBMBYIDHETVHFOCGLOFYXHEDWTHDQDRNPHWPDIIHIHYDEDFHHCFTHU  
YIPLYFVETYTTHHFNFTGICKEONIHULPBMGKDPPHEOCFYCIPHYNOYLCUSPDRIBATNGHETV  
HFZTUTXSDVAPLYNHQSDTDMHYDTPNFHCOCKYNAPYTIYDRBYLSNCGICYPTYIOCYHEDTYU  
DRUSIFALYNHFHHCFTHUYIUFCPTYALYGRUBBTFFHAPMDVAPUBQRPNUVUFYHHETVCFDE  
DHDRSBEHDKUBYLDMHETVCFAFCUYPADIAEDWDNCVTDRLFEFUFHNEFHCKHUHTYHHEHFHPD  
YCHYLCUBFCGGETHTUOVYPONMYPTIQSLEHHCSPPTPIAEDSFCYHPNHUADRLEFUFHEFIACK  
OUEFFYYXDHEDZTBMKYTKONKTYLCUPGHFTVTATPKCISIPHTIAXYFHFHFEDKEPGTWKTR  
ZNDISIHDEBLYEHEDIHOSYASODFYEDPTVFGISIFALYNHIFCHTLHUETWFAHYXLUEFFHPPH  
HCRADAOMTAPCKAHEDWHPACHGIDYXLOBYSSKYKBXCNYLMPYLHPTKMLPADADYOUSPYCX  
LSIDHEDATHTSPDITUDAHEAPLPHEHEDWBIFWYSIAUMSNIHBRYLNCUAYDTSPRCFDIKCHD  
MIHEHPHYNODICHKYYXIWDVLYRCPWRFTZUTGRENDAXBLMTUSKIGNLDHEDWHPACHGIDYX  
LKEPIDMDYRDSLDROYUBSGHPFUTSIHNYTHDABYTATUIHYSXBYLCUSFCYHPPHPGUBBTWD  
PAFAUQNHRXBDMEAFUIHOSYAUYPKHNIADYUOPYPONMYHECKLWUOUBFYUBIAFRETA  
HEDWHPACHGIDYXLLYSNIHETUVWFPAAHUXDTIFCHTLHUETWFFHUHYNODIFHHEHWAPHFTK  
IHXXKLCKPHNHEDVDTIHFFIURFTZUTCOYCSOPHHEHFFVHNEZHNHINMDAPYPFFHKNIFY  
XNEFHAHYDEDHWFYILCKIFCHTLHUSIHDYQURPVTPQRYLELUBBTWDMWLWAYCVIHCSIKHZT  
QZXYHEDYENNUIFFTDMHEDWHNNYIHOSYASOFVHNUCEMHNYMOTPYPPFFHIAPYHEHFDATAW  
DAPCKHWFYILCKIFCHTLTUKCKNPTIABCFTNBFUAHFPYWFUWTKDNZHEAPNCBMWTTUDM  
HEDPMYCHVTKHDYSKAPHFTKIHYXXUEHEDFLUBBTIAETEFZKFBPASKMLGRHEAPURLYXII  
HETEFWDAPURVTHESIWGNLDHEDWHPACHGIDYXLCFLTCHECKGNDYHEAFBIKDYAPMLYPT

NHUAIHBOILSKHEHWAPHFTKIHXXOTHHTSNRCUIHOSYAUYIUFCPTYAPHTVDAZTKCWH  
KWTXBDMHEAPHEHFFVHNURVTHESILSUKDHVFAPWDBYBVKEIHEDKGPDSFSIDYYEEDPTVF  
WYBYTHSILSIAEDMPYHNDBTHPSLIPNEFAEDUCYLF AATEFFRIQTKGYDAVTUQNHWHHETHE  
DETAUEITNATMDHDAUYIAUBIALMUCGEQZVLETHIHESPEDFHTAHETVHPNHWHDCHDHCCD  
KGPDSFSIHIHTDIPNUKNSBTDKWTYCFHZTHDYSTKGREZAPYDWDAPPHONFHATMDHVDIYLS  
KYCIPHYNOLCULPHEUBHIAFSOSILHEDYCFHZTHDYSTKPGLMWIFHEFIAHEDHOSTPFVWTW  
OFYXNPSILSHICFSL SITKZTLSNCKYSYYKFPNIYAUYPKTRXIIHHEHFAPFEHFWDCDKTIRN  
EHEBMBYOTHTIHDAHEDWLYHDCSHPIHEDYCFHZTHDYSTKSPPAFAUQNHFRLYPHUQPHIANT  
WYCFHETPFVTDYOPKNYLCUSFFUHFMIGETHPYLYKEPSNPDLSMYLPHEUBDMHEAFCFTVT  
HHFNTMLELUBBTYKDTYGILNPDLDTFHIWNYTNTLHTYLSKHEHPETWFCOHETPFVTDWHETHBF  
IAOUBMBYOTGRUDCBTSGRDTAEFVHNIAAPKHWHTUKCONMYSOTKEDYSHTWHFHICHFTHUYI  
ZFXTVAPHESPBRTKKEIHCDYAPMTHDHEDPTVFMYEDFHLOSFFEAPYLSKHEHFHPDYCHYLCU  
COCEHDATCSURGEHFDTUADRBEBDFLDTNIAEDYCFHZTHDYSTKBMBYOTQSIXKGDAHNEDI  
HHCDATHHEDTYDDTFCDKBIFWYSIAWFSRENIHEDKGPDSFSIYLHITWRETWAHEDCKPGHFTS  
PSIANSYLCUKEPIDYOVREFBZTICIWCNHPHCTVHCWATUSCDANUCUYKRUHFSIPUAFYLCUF  
EAPHEDAHPSLPCBYTHSILSIAEDMPYHNDGINEFAPHTVDADKLYNICETLMLHCFAYHTNIUHC  
HIVFFHTSQRMLQRHDTUSCDAGEHFHPDRIBTUBYCBLYKEIGNLDTMDHVDIYLSKCNMLNZEDH  
YPTEUSIRASIBRPACOEHEHFDZTCGDAHCDTPGLYDQTSRPSIWHSGXBDMHEHFFVHNUCFHPU  
CUPHUCSIOCYQTHUYKCUVWFHCDAOFYXHEDWBIFWYSIANCIAHESPWDYKNYWAAEFVHNUNM  
ZMKDAEDSFHPPHOUIAEDFHTXHCWAATFHHNCUDWRCPAHEAPTHURVTUFSIHTPUAIFYNYNE  
YHCOHEDWHNHFHPUFUADALPHECNMLNZSIQGUBUALYZTAYEDAHEDECKTKRISPCOEHWBRS  
OFTRBAPHFTKIHXXWUHFPPYAMITUSKOUSKRCSEZHTWAFHDAHEDYPSGAYCFTVTTHFNT  
BYEEDHYDPDPTVFBYYEDNCHSKEKUBBTRCIBNLDHFXPTLPCCFZTYLCUCUHTSOCKKHFT  
IUDCOYCSOPHFTGRAPUOADEXSCLFUBIGCTDMHETHXYVTIAGEUDRUTSELHNHNPYURVTHE  
SILSPZTADATSPRPTBTCOMPSPSCUCFMLWAHODTTL SKLPHEFUAPT FHPCKFVLTHKDTUVWFH  
CDAWDOCFHTSZTMPADCFACFTUSKLYPHTVDAURBMBYOTOCONPHOUIAEDYCIAAPDYEED  
MPADRUCOYMFLTSPUHFSIKRFHTHSIKHLSCKHIWFYNYPCBMMIKTUADACUHEHPDRFHSIH  
EHWNTIANHYQPGHFHPDYPAIGBYOTLTVTUTHTWRFARFBISVAAHEDUTAPYLYICOHEHPDY  
PANHFHIAHERUDHEDYCFHZTHDYSTKPSSNIHSFHPHTUIAEDPTVFGIKDPHECHDYHEDPTV  
FGBHNADIHFCFTAHDRPHZTHDYSTKUGAFTZDHEDPUYUGICOKECHXYSKHEHFCNHPLYPHTV  
DAHEFPUBUATHUYKCKYCFTVTTHFNTMYDNCHSKEKHNUCDVFAIEUYISHIHKNITABMBYOTG  
HNSIADAHEHWNTIAKEGLDALPHEHETVTHFNTBYIAEDYSEFOGCKZCYNIIKEPHFHYADACK  
AEDTOUCSDATSPUTKCNFVLYEHEDZTHDYSTKOCCHBYSKYLVTDSTIPVFFHOSWTATMTRUY  
MNLHPKTEFIHEDSAIXCKLYOLHWCKHETPFHGHCOCYSUAFWAPADKNDTYEHFENFCBYSKDAIH  
OSBQWGFPLMWTEBLYEGHCCKAEHCHUTSIEEDLSCKEYTWMYEDBFYGOUREIXCKNHOQYSEFA  
HEDDSZTIKDTADOHHPHYCRDAHEHWNTIAPUTKCNHEDHTSOCKKHNPADADYADYCCHHDEHFW  
TKCNFVHNDKCKOUPAOUIAEDUBHILNYHURYEEDYNYIHEAFLYRCREIXCKPRBYSOSPEDEOC  
FTKCUHLTHDHDKCHOHKCUCKWHFHABSIWBHNRARUAPHEDACIHNYIPFBMKTUACKFVCUFV  
HNXUCSCKFVNCUSHTWYCFHEAPFVTOKCIHFLHNXBLMHTDMHETHYLVTHTSOCKKHHPGHFDPP  
HAHFDIHDKMLGRHEAPFVNCUSHTMYEDFHKEPIRUWFYNTKFHHNCUPSVIMIWDNCNPDHEDFL  
HFTWHCHWVFBMWIYBSPEDHUDIOHRIDYPAIHETELHNLHENPHEFWDFIWDIFYEEDPABECIH  
NYIETAUYUADDZDKUBDMHEDHOSTPADIALYRCYEEDHTSOCKKHIHLTFWHNPHAHUDRXNSNZ  
MIDICSSILHEDIHCFPTURYEEDTIEHYBRBNYTKHFTNIAYXHFTWHWAPHUHEHFFPCFDHEDH  
TSOCKKHUGAFTZFWHCDYEEEDPAKFENLYTKFTHCPUHNPHAHYDEDSFHPAPHATCHEFEUTDF  
APADAHEDNCIHWTYCIPHYNHDOBPSSKHEDHNDCHSKHNHNHEFPUBUATHUYIKUDCBDAEDT  
KHECTUAMPGOCKHTIHEDKTIHLTHKFPTADAECHDYHEDMPADFDUADABMBYOTFHZTSIDAPS  
WTIAOCCHGELMDVDVETMLSKADFWMILPHEUBHITCSIKHBFHHEHFDTURPKHNPSVIWTHEA  
FHNMTPIAEDMPADYDEDPKFENLYTKOCYQDALOHEDHNDCHSKHNKENHBMMYUDCOTZLMNT  
YHRDLTBFLPEYTWYMNLDTADFWEDHCYIXUPAGOYDETPSQRCOFHMLFPHPCWFAELTTKCUW  
BLYETUCIEUYKCMTSOXIFCOVOFNPHYTHUYISIHTSGSDTG BTRBFIBAHEDIWCNDVTVWDOD  
ADEBLYEHDNCHSKDKHPCOTZLMNTYHYXDV

#### IV. Eksplorasi Misteri Gunung Padang

Pada tahun 1890 Mr De Corte mengunjungi Gunung Padang di Cianjur. Ia mencatat kejadian yang menurutnya supranatural pada teras batu kompasnya bergetar tanpa sebab jelas bisikan halus terdengar dari celah batu dan satu lempeng terasa hangat sementara yang lain tetap dingin. Seperti tulisan lainnya milik Mr De Corte, **tulisan ini dimulai dengan “Liefste Diary” yang bermakna “Dearest Diary”** dalam bahasa Belanda. Karena hendak diberikan kepada seorang jurnalis dari Amerika Serikat isi catatan ia tulis dalam bahasa Inggris.

Untuk menjaga kerahasiaan ia mengenkripsi seluruh catatan dengan **Hill Cipher** dan hanya dia yang mengetahui kuncinya. Bertahun-tahun kemudian naskah itu ditemukan terkubur di sekitar situs tetapi kunci tidak pernah ditemukan sehingga lembaran huruf yang tampak acak tetap membisu dan para peneliti hanya bisa berharap salam pembuka khasnya memberi celah untuk memecahkan sandi.

Dengan informasi yang ada, anda bisa melakukan **Known Plaintext Attack (KPA)** untuk membalikkan matriks kunci dan mendekripsi seluruh teks. Sekarang, kamu harus membantu para peneliti membongkar sandi ini. Gunakan plaintext yang diketahui untuk menghitung matriks kunci, cari invers modulonya, dan gunakan hasilnya untuk mendekripsi pesan yang tersisa. Setelah menemukan isi pesan, sunting hasilnya agar lebih nyaman dibaca.

BTTPHJPCNIIEBVNTKORQAOGUITDLACAOZUPUKSLDZPUWZIHNXMLEDEVEPAFAJNLRZBHCS  
QEGDVCQZHSEQCUDARKOONAQAQJLUCYVKLPJOCXSNURTXHDXGCJKXAQQTCFXPWLOIWBY  
PGWMPZTEMETWZAJNQHTAYWQMPLDTRKTITETFGDNLDAOCXEHIAEMKAFNPOITRKQLQVGS  
PULVZNTQLCLUOMBVLVZGBQYZGKBXDFAJNJBDRADYRBKEMMDADSDNZTNBBVQGYEGZCV  
DJEEPBXHTKOYQIEXZZYRBXBFACLEAOSIPQJPOXDTRAECUCLQODZLHGSACNFVKMKZLVI  
KWJPLKJWALAYROUECIDKJBPKSSQEUIGRHJYAWVXMHKVKOPRAJXLFAOZGNBDWGCIDELY  
ZQFTEQVKCXYXRLDEOCOMIEITVXKDDQPGSAJKTIVCDAGVAIQIICDIPNFAJQCOTDLKOPO  
KPAJNVLVYGCQJHRDMIAUQSDADNXTPEGAHTOTVIJUCJLRZBGHIORRKDVRTIUBYQWIJLCL  
PVXMWUBJXTTIMNUQCCLLFQWVMMZDDKQIECDBLTVZNAUDSAPBENNUSQEDBJWFAUUP  
KBORKQLQVDUNNAQTUZZMJOZZTXOTIPWEMLAGOCZTYUDNZWUBGAHSPVOMRXEHVCGKTEB  
CKLOLHQVWVFSXCZVPGGLFNVMWGRLLDARAADUKFTRGESVXLTJGCWYOHNKUOFUPVSGGEV  
YKOOGGDRLDZUBLAMXRTBEI

QCBLXBRERJEXZTVYFBQXLWUGZEQMNBKJQEPFYBDZBBKPFJVISNMNIPTYFYQYBNJOVKU  
SULAQJAFQVDGIMJTEQYGGXHLSDALLSMRPLBHULOTDBZLXDLQHGCTTSVJUKTDKEKQJF  
MSYYPJPQWOFLYFYQYBCKOMUDMBNXXBDPWOQBLHEPFTGUQVTCOYYAOXTDLAJKFPRVKQYQ  
PLWFJZRXXCMTJCVTFPPFKVGNLSBPZZFQYLXLDTKFYSOWEVCJQWLHNTRTJSDCGYCEWNF  
XJJEBRRVYFBEIKPWKVFAFXHKTDQZHWKKDDYBXIVVHMIYLAHJQNBPHMAUPGYMFNTWYEP  
DZSEHFSZGBRERSGGBCTTSKWFUSUAUUDLVAGAMFAVXEFKRPNYFTDNKJRGWSHLBCTCGT  
HXUQBHSPHPBGZBJQQGKIUZKVIHELJQMAUJXQOKTARNKXDUWAOENPTLPNYUOYRXXFKRH  
WFFQYTFPAOCZLZCTPUIEMWPVNFVLXDAXDXGPDShCLBNJJHGRKFxfCBJJXCBGUiVKIFE  
QMFATOFJXDQPRUVRIKKBFHJSHMWSdzLIWGDAPRBRFJZHIRXGDRJGIFEUSUVXBAKTDCV  
QYTKFPRVXXXOGXHBTKHJKFEMYFOJZYWCOUJTLShMVJHNTTOFDAXNSSPMPVTCKRVGOJU  
HLTNQHZUDGEESVLTJXYFJNRIYIZBJJTETKHPAXWLOXUJHFBGRJOYUSJIXKZFQAEYWS

LQYGHGVZBJHLEGDHTRUBD

*\*This is a work of fiction. All the names, characters, businesses, places, events, and incidents in this work are either the product of the author's imagination or used fictitiously.*

## V. [Bonus] Misteri Penampakan di Gunung Padang

Suatu malam di teras batu Gunung Padang para peneliti melihat kilau tipis yang menari di antara susunan megalit dan mendengar dengung rendah seperti napas dari dalam bukit. Untuk mencegah kepanikan dan gosip mereka sepakat merahasiakan semua foto temuan lapangan berformat **JPEG** dengan **Affine Cipher dalam ruang 256 karakter ber-kunci acak** menyandikan tiap berkas catatan foto serta rekaman menjadi deret byte yang tampak tak bermakna. Perlu diketahui bahwa nilai  $b$  dan  $m$  dihasilkan secara acak. Untuk memulihkan gambar ini,

Kamu harus terlebih dahulu menemukan kedua nilai tersebut. Namun, kamu **TIDAK DIPERBOLEHKAN** menggunakan metode pencarian kunci secara menyeluruh (*exhaustive key search*). Berikut adalah kode yang digunakan peneliti untuk mengenkripsi fotonya:

```
import math
import random

def affine_cipher(hex_values, m, b, n):
    cipher_hex = [(hex((m * int(value, 16) + b) % n)) for value
                  in hex_values]
    return cipher_hex

def read_image_to_hex(image_path):
    try:
        with open(image_path, "rb") as image:
            byte_data = bytearray(image.read())
            return [hex(byte) for byte in byte_data]
    except FileNotFoundError:
        print("Error: File not found.")
    except ValueError as e:
        print("Error:", e)
    return None

def array_of_hex_to_bytearray(array_of_hex):
    bytearray_data = bytearray()
    for hex_value in array_of_hex:
        byte_value = (
            int(hex_value, 16) if hex_value.startswith("0x") else
            int(hex_value)
        )
        bytearray_data.append(byte_value)
    return bytearray_data
```

```

def create_file_from_bytes(file_path, bytes_data):
    try:
        with open(file_path, "wb") as file:
            file.write(bytes_data)
        print("File successfully created:", file_path)
    except Exception as e:
        print("Error:", e)

def main():
    image_path = "./flag.jpg"
    n = 256
    b = random.randint(1, n)
    m = random.randint(1, n)
    while math.gcd(m, n) != 1:
        m = random.randint(1, n)
    hex_values = read_image_to_hex(image_path)
    if hex_values:
        cipher_hex = affine_cipher(hex_values, m, b, n)
        bytearray_cipher = array_of_hex_to_bytearray(cipher_hex)
        create_file_from_bytes(image_path, bytearray_cipher)

if __name__ == "__main__":
    main()

```

Gambar terenkripsi dapat diakses melalui: <https://drive.proton.me/urls/2XY3EXERT4#p7jLnqs5Drgk>

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