

CP5603 Assignment

SP2, Townsville & Cairns (2017)

Due by Friday October 6, 2017 (no later than 5:00pm)

Aim: This assignment is designed to help you improve your critical thinking and problem solving skills, as well as your information literacy skills (i.e. the ability to select and organise information and to communicate it effectively and ethically).

Requirements, Method of Submission, and Marking Criteria:

- Answer all of the following questions in a single document. Each question should begin on a new page.
- For each of the first two (2) questions, write a report of approximately 1000 words in the structure of a scientific paper.
- Include your name on the first page. Include list of references for each question with proper in-text citations.
- For marking criteria of the first 2 questions, see the included rubric.
- In your answer to question 3 (i.e., cryptanalysis), show all your work. Four (4) marks are assigned to the determination of the correct key-length, four (4) marks to the determination of correct keyword and two (2) marks for determination of the complete plaintext (partial marks count).
- Upload your solution to the Assignment Box, located in the subject's site.

1. Bring Your Own Device (BYOD) Policy

Use the Internet to locate BYOD Policy from two different organizations. After reading that information, create your own BYOD policy for your school or place of employment. What restrictions should be enforced? What control should the organization have over the personal devices?

Write a short (approximately 1000 words) report on your research.

[5 marks]

2. Open Authentication (OAuth)

Use the Internet to research OAuth. What is the technology behind it? What are its strength? What are its weaknesses? Will it replace OpenID? Would you recommend it for secure applications like online banking?

Write a short (approximately 1000 words) report on your research.

[5 marks]

3. Cryptanalysis of Polyalphabetic Ciphers:

In this question you learn a classical polyalphabetic substitution cipher (known as Vigenère cipher), and are required to cryptanalysis a given cryptogram. Cryptanalysis of an information system is *the study of mathematical techniques for attempting to defeat information security services*. A cryptographic system is said to be *breakable* if a third party (i.e., cryptanalyst), without prior knowledge of the key, can systematically recover plaintext from corresponding ciphertext within an appropriate time frame.

Background

Julius Caesar used a cipher which moved each letter of the alphabet to the letter three to the left in the predetermined order of the letters of the alphabet. Figure 1 shows original English alphabet and corresponding cryptogram alphabet in Caesar cipher:

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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
d e f g h i j k l m n o p q r s t u v w x y z a b c

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Figure 1: English alphabet letter and their corresponding cryptograms in the Caesar cipher

In order to use mathematical notations, let convert letters of the alphabet to integers. The most natural conversion is to assign to each letter an integer which indicates the position of the letter in the alphabet. That is, assign $0, 1, \dots, 24, 25$ to a, b, \dots, y, z , respectively. Using this conversion, Caesar cipher can be expressed as:

$$C = E_k(M) = M + 3 \pmod{26}$$

where ‘C’ is the cryptogram, ‘E’ is the encryption algorithm, ‘k’ is the key, ‘M’ is the message/plaintext (one may replace integer 3 by letter ‘d’).

Caesar cipher is from the family of *shift* ciphers, in which the cryptogram is a shifted version of the original alphabet. Cryptanalysis of the Caesar (and all shift ciphers) is easy, because there are 26 possible keys/shift.

Vigenère Cipher

In Vigenère cipher the key is more than one letter. That is, Vigenère cipher can be considered as a combination of n shift ciphers, where n is the key-length (i.e., the number of letters in the keyword). Let the message/plaintext be ‘individual character’ and the keyword is ‘host’. Vigenère cipher encrypts the message as follows:

Plaintext	i n d i v i d u a l c h a r a c t e r
Keyword	h o s t h o s t h o s t h o s t h o s
Cryptogram	p b v b c w v n h z u a h f s v a s j

That is, the first four letters of cryptogram computed as:

$$\begin{aligned}
 \text{‘i’ + ‘h’} &= 8 + 7 = 15 \pmod{26} && \text{i.e., p} \\
 \text{‘n’ + ‘o’} &= 13 + 14 = 1 \pmod{26} && \text{i.e., b} \\
 \text{‘d’ + ‘s’} &= 3 + 18 = 21 \pmod{26} && \text{i.e., v} \\
 \text{‘i’ + ‘t’} &= 8 + 19 = 1 \pmod{26} && \text{i.e., b}
 \end{aligned}$$

Since the plaintext is longer than the keyword, keyword is repeated till all letters of the plaintext are encrypted. As it can be seen, a particular letter of the plaintext may be encrypted with different letters from the keyword. For example, the first occurrence of letter ‘i’ from the plaintext is encrypted with ‘h’, where its second and third occurrences are encrypted with letters ‘t’, and ‘o’ respectively. That is, Vigenère cipher is a *polyalphabetic* substitution cipher.

To break a polyalphabetic substitution cipher, the cryptanalyst must first determine the period (i.e., the key-length) of the cipher. This can be done using two main tools: the *Kassiski* method, and the *index of coincidence*. Here we explain Kassiski method, you may search the Internet for the index of coincidence method.

The Kassiski method uses repetitions in the ciphertext to give clues to the cryptanalyst about the period. For example, suppose the plaintext ‘to be or not to be’ has been enciphered using the key ‘now’, producing the ciphertext below:

Plaintext	t o b e o r n o t t o b e
Keyword	n o w n o w n o w n o w n
Cryptogram	g c x r c n a c p g c x r

In the given cryptogram (i.e., **g c x r c n a c p g c x r**) contains the pattern **g c x r** which is repeated and the distance of repetition is 9. This could be the sign in which the same letters from plaintext is encrypted with the same letters from the keyword. Since in Vigenère cipher the keyword is repeated, the key-length is probably 9 or a divisor of 9 (i.e., 3, because 9 has no other divisor). Assuming that the key length is 3, we split the cryptogram into three cryptogram. That is, the 1st, 4th, 7th, ... characters of the cryptogram are the result of the shift of the 1st, 4th, 7th, ... characters of the plaintext where the shift is the first letter of the keyword. Similarly, the 2nd, 5th, 8th, ... letters build another list. That is, this Vigenère cipher is a combination of 3 Caesar cipher.

Your Task:

In the following you can find 10 cryptograms, that are created by Vigenère cipher, where the plaintext is English text and the keyword is meaningful English word. You are required to decipher the cryptogram that matches with your Student-ID.

[10 marks]

Cryptogram for whom their Student-ID is XXXXXXX0

oifwkigabwggzeuilnfvqoinxpcuckxrzlldwkmuyfaamirrpwflglaoikpfrpvytzvr
amjlxlpvytqflazsvhngapvkonguoehbvwmzgfsoyussgrjmvvkbbtchkgimfdhpsgrnp
pblxbjgnvsmiicjifnglystqusugzbagulgzpwwtimtifhfzsepsehyczygsiahvfhhuc
uglasfppoagocqpoftlplbzbzgdqpmvvpofthlplqkngvbawltvromjxggmuaauwgcg
aggyhyczygsidvzkbueckuwlgrlaggsfdapwzfvvyamknotfpmnxavlaagyafblzfvfn
awykogffqkmvvpboamocqpoftlpllazwksaazbrrbzwlgymbtvuszlhawggvquaeoir
vpsgrnpplxbjgnvsmiiczaagqvyjwhrcwscmumfflpkvhqlklvllwjgkfmwtysbgmvvm
yqybbbjkqybhrjzqygoksymkaomcawuksrrlagfsjmybgyrzepbseseahxknzrrpwyfycir
omvhqlklvllcrlfqmsidlwzgvupbzxwkflzamgtmubwghjmybzxgzeuilnfvuptdusuc
amumsuupbztjvpfpazvgpvjsuwcgagagciblzhotfpmnxhygzwwjizpluwghrbpoamocq
pofthlplwftavqziyxwjzxxwvrjlvukmgrpwhfthkfluwlgrelbzthtyujwtgdjpmvhbcw
iglasccnqlbarrlaazbvpapmswjgukgghiyzblhvrkcejbhkcuaazbrrbzwlykjpskszl
kmhxbucubxkcdromexgjynmkmvvpboamocqpoftlplaengkqvuwacnzpvmckfluwlgre
lwvclpzmagfropsgnrppblxbrklazwksaazbrrbzwlyctmkmvvpkwbjvvpnlasjg
nvsmiictckmpvyitwcmcyqxrhyzczygoksymsaobdzamhvlzqygoksymaljvppnaxrsw
jweioiguoamhmapwkolromfmwtqpoftlplaxhfvvhueszlvzvxkmdqlariyduggspd
ywetprlrbzxprrlrgfdrplalajgnvsmiicdqlacedpavvzqwgowuckiltqtmbvlhdvl
pvywdchdwkwgjilbcemmivbuzrhtkbueyacjxvfuldwkbvckalhognsgsioirpkmeoig
uowgsiysihnpcgjtqdbfuuidzcigapelcrbpoamocqpoftlplauasdcpasvccjklbcem
mbohocevzamvdqhvffijroinxhycmwdecnguohkcgcybaxgkflaazbzlndzcigapetggjg
nvktgzeuilnfvmbzgxzeumjyffkapwlskmmidedfqzqtesmyscwlcwromkbueyacjxgkf
laazbzlndzcigapexlvabbwlwenvtqgdcgthlbavdvzsgcgnvvhghnfvlgxgemasfhkkf
lawvfrrmqbhjfvcdwpvavuhnhrrpwftzcpvlkotrhjdxhfdvzyojgnvsmiicapsmwjr
vnagrtrhtawgzeuilnfvdvzszwmcuwlgrlbbzxjvppnavokgvvseufppbzfrilasiisj
pkagtftilbcemmbzgxzeumjtavqziyxoeboaoseqpoftlplwxmvvklaktuvgazwmiil
zgwllwromkbueyacjxwjelvmbbvmawkkzqlklsksyvkckfldwkwgjilbceysogkwwf
tqfzsecyidbgrnbjdbqcrwvpgbmgsgfhazysbafsrjnwjbhykzwsngmflksgijcpblhqyc
jsoaskflzsfjqhowfokaomkmvvpofthlplwjgck

Cryptogram for whom their Student-ID is XXXXXXXX1

omqisespiakgwfoangvkuvqdiqimfsrtklowuiakgwfvzprpzljmekzbnbusyqmprgkjo
ljweagvqhymeuhgkxggnbruucahtwxzrggwtlvbxbubusjmiwaryqmprgkjoliwtsxmlol
kzqbbjixmccgcriewekxgchfoxicvplamgckpkqegzuvtrqfuvvcgokquvnzimwcvfvukvg
gditgfqymmsfvrdrjrsexwccjmbnftwtlhqkqtofstcxmiwtsxmlolkzqbbjitmaucqy
pnitbowawjilqegkxxqpsfxkvowuiakgwfvzprpzlgubiebyiesbvueahfirtcoibomfoe
lhqqrzyighvuvbgfczjvrviipbhymbusyqmprgkjolqsinuznuzdkvgwdmucgdvzowq
kzvyiardcybcopitizclvzmdirtzgwvveovaweohqqoemtoywjpgcphzwtqfhymswfhnmr
txbfetbldvvlhqqquvnbuqyevrvtecfssunuzesrtkagokmnwjsmmxqgzvayiqogbgjysk
wuywemyqgirbowagtwxsnflvzwsrtklowuiakgwfvylhskwobffvtoiaqvwtzrocbour
diqimhduizmfseorqfvrjdvqbzkgnitbowagrzkbbbjqjmesuiyifqvjjqauuckbbhymh
qqrzyjvrutohdkpkarhktkurbkxxqps

Cryptogram for whom their Student-ID is XXXXXXXX2

fhwvseohmswyudmmcqvsesitiwkeiohaveceeuikikehskmeswslgfzsawiiqdtrwvhejt
prgtzhvjeewysiqsftcqsztqzdkmlrdiamsrzduaeizekllryijlyxsekmwktalmlisq
zhpueczxqvefgklzqrskgycsekiauhlgrzbwkirxirxhskgaomesmgkijtajxwkahazlv
dlwoicbajmmtupsgxjwolaeiucggwzpejxhyuejtvttiutpktrwllfxdkvlvyekbrntia
ejumheikunamliqszhpueczxqvusslwfoismiuiilaxyqilapvhedhjryudmmcqvwekia
hmlvabnbsledjtasmcchjktiklscgtahrzetztxzfdgxweathksmudwvseoujkieoysfse
sdayjvdefmpvhedlswtiwkeiohavecsrgntjutgwmjoukliueukikehskmesfgkkvzejt
procwlwjfrmvxldektrubrgoiufhsmimqrqtgtqsklxigclnvvoafuiiqadbvbpqttvdf
wvxjqcjsxjtajbrxeczxqvfhwfezzdjtasmcchjkteakwtteexmjfhsmxyqmkgidnbpv
sevieifiubtrztktvmskbeqddhrxqrkaeiqskbqthankiszttwvslftztxktekhlplfigg
wwarkxgiqtkaeiunybrdglbpvhedzvfpgkivfbokxhskeskpzqrsnxyarktvvzolzjwuc
axrkteknkxqslxhvfavmvztyxsdqtbgrxswvvvfsztvzzgkvlvyekpmkttzxvvcuakiu
brgiiifiwllfienxvyuskhplfiggmjmphemtmbdxsexylhegmrlbglxajvejxoxfycfidx
zvxgjhygemgkigdeubwvxyzxhzecmlwvpswvvvfsztvzzgagqlxtaemqlykslbsobxyba
jmmtglsketoeklwkdumyiqstkmwedewkgdaxhxqnwkeceeuikikehskmesiffycfidxzv
xgjhygeafwtiavwwxymtammboklmsxelhgfszslkytfivxeceeuikikehskmessuaidqsxh
vrzyenpkulwoicmcuxwjetjngkgrwbrsdiudicxsnxgkarkietqcggwkdummfztzxpfi
juslzdggxyqsasifrtzxqfpudnwgeirxswfhwymvxdagayuczmlvoadvycmtahrjmrwiz
zgvhrvusuhrjudwkesxydtvxqifmlzeswvxzanoxtiqswgxrzexymtuefmwfxulbserojl
itdelllrdifzmejudmmcqvwekiauhlsldsuaaidqikuejqdggxyqsztqzdsuaaidqafwmjbe
jyitfafwmuqadbrfgrkvlvyelaiacawwkffgnvhrkteehhlxukbwjugfbjzoafmppemsepv
dtztrzzbjbgqldlwtteexmepewwxyqcgghzfiggtzegjxekqrlaezakbrjtaebvjaraz
memlklvlyealwlrfavmvztlhmdblwfielomktiapgliueczxqv

Cryptogram for whom their Student-ID is XXXXXXX3

cgqprcccgfwemhhtreexwfkqcklgbprkepgqhtfrfnweweuxjsrxrjxumeiedshauaike
tmogygxqudppycefkctfktobwyzrkhetaipamqprjvvgqbbcifjqgydyevetciivkdxtzr
ihhtwvpyzdwecseprtmrvqgwymevipslwgrfdeegtmbimzpkhmgfyvfdhijepsjpmgp
gcrlhzwisztrrxkczxnklkgenskioqtprrgvsdhwvvhgdpnjjqfytdlwkbvvpvavagubpci
uinhtzxwhudnzxyoegerwqbmqlvxqoehudivvmityiefketfktolajwvfacgvrqiswajq
qgfdklgdaieexkoxptkeeyqgsnitsualzxfmierrfvaewynzkdtiytgiduchvuvckkl
chfweuseiytnkacgigikxgbucaeypyzwejqf qxgepcbsjaxikhipshyqwayiiczuoex
jofihveuggbpmqbauaemibagaexchfpcbitkmhnfxtsmaijxkqydski cfxnelvqdqntv
adfdspwvsyhvvvgrqhixrgrfdwzxjgfpnuxjsmitrgmgauey eof tdftrcztnkwyvaznva
vvqtntvadfxoettcotsjfwhpdesvyzdwklgqdnpsifmehzgm skpdumvwacacpawflajv
gegtskifhtptklgszrrptvwacaehfsogygkczferfgggetstswzpqeuspsc jitonmghurp
nmnhrrfcdliklvvqpiushaqrhrkqmadvzkqghslgjoeihvgkdttrumuyucvrvvspqyci
qbnptkmuomabvvvwmityidssxnempuauty ipwzttviphtreexwfkjihvj kfeimvgjozxcrp
gzqtimeoxbatlkbqhvwvvgwzifrhwqqsffvhoeieegtmbiifrvvuhwrwvqvuiiwpdtabx
jfajgympqdnpsifmehpwjozcoempvuhsvqk bmafwvmzmxdklghttoiivoplwswbpptzs
pgaumfhgfrzrrptvcsgaglavqj svhkbdrdevwactyiqfki orrczkhetmrvqgsrrfqacszh
gfqstyucopl cif ddddlgvquehvvukt xcyusebacpuinhtzxwhudnsszseroergqftdsc
nodveitgfyjtrxkczqooiuggqskmvifxoeffqlqhacwqqmalvhupame jetsodnkqvzxt dsc
cfqaakmxsxnsthygygxqudppymeyqntf ttxhdvqgqbrjszsphttpvvoifptzspamejl
qkqkeilcj qcobiahttiivfgrtlvgweuioifozsty iadddvzhgruuf lwkczferfhwqfrigl
gfepvengaieiqgreenvxycdzsnmvvajt vbesbiifruoxacicrhavr rtjwopl xstwfwmje
tsnpsvhqbodmgyvofxoewkbrxnz xgoxvesvcwohtiyehggeji iuddugwtwzvs wmgzphaeh
xsoioiwrootskl gfhucxuc rihvvgqabplxchudnjetsmawrcusjpckrqfajnumpuagagt
tcjxmrxczxszrxcxkeusphttcfrvmgyrwbksaesmvsdgoimphtti etwhauaecefkctfk
tobwitenuagiklouqceievsepnlrk bftnkmqbm arvwzfl euiqudxbv hcbqlaehgtrxczi
phmagfvkhtb fvvvqbucxkdxxcrxkczdfwpqofxnxtqwzinlqdsdhwwwustskifhidsvg
wfqesvyfcdpnusopuigvrgfmioiwdoetdfrvfm cstiprqctrppiyqeiwv vqhekaqqxpsji
ucrirrruqqcdvrvoxhaiicdbaivhvcodnjxtio infzgzqccicrhudnrpicdxyqu

Cryptogram for whom their Student-ID is XXXXXXX4

iyselxmt eqsjt fxf bteezsrfe heeiysgtveitcnxidrzomrvmsvapoidctfzaxavioqsmo
pcupcmfwdkjelaevbmjezswimwceevqjqmqszaqwiytehbemacusulmxhzhxlwptmsmtq
swfpxpgrztfcezsmssjwadepfneytrgulrppirgzvqctfzaxudewomezzzbhlrpdkvfcra
cdwmtxmgpoqapurrhjzrekitpwwvgbxirtzguppeiideydtnwuswt dihfchmirpmzgw
hrbelwt dihfcoqnr gbxefivfpqjmrkhipoqntcoeeucjtjqxkxh zljyhqevbepfperftkt
igostxkrysdvfuijrvpxaxkgxthqjkwmtwmizcoelqsvgx lwqmksodmhtcmjyzqhkwhlxq
srbelrmapgfoxttvlpvuteqf hmfkwflrmapg jdsriysepwspmswlpgpszftrexxvudmz
ifhipqhzuovavaevfutiedwqsjtdxfbalurrzhzvuiyat lqacxguelqbrbzoier vbelrf
hftusiptjkizwqhkf vnxggvkbdfmhvrpyjqxjhftwqgdiulxudeospxttaoqlrqhvtbdxq
ctfzaxudeomrsdxkvnlrpiysbfwgrzjlrdbwbwkagzhixraivhilxmachipendmsnprf
x b f o g d n g h p r v m e y w d d c e i v a t l v q e i w w l x q z v m t j w f t d g j y t d x m o u p o q n t f z a x a h p g u p q e
qfhielqteqsjtfxfbbyhfvrfrvfkewpyoqnjospwqrisulrptzhipvfwwgbxiagkvfvra
lcseriaufbfzjfwvajdwguwdtizikcepxqgdwopxttffhipvfwwgzjdatngfjgeftbszdce
ivatlvqpcgpnexavrtjqytkfjnwkhksndhuuwwflrpwvzmezexeshzgrvrusiodeqf axa
ugicwmozvmdccbifgzdxqbjdvmpurbsznvkekctjwftdgbwarrzmpmhpanpxdxtgzdxq
bjitpxiduwgqidtehlpedesjdtgqcw d h l u a v h i p s f w v f j d o q e k g f n v q i t z f l v x n z h j d v q
flwspfhwrhdzqbjkworxttj s d c i f z v m g c s y i y s q f f x x t c o p l m h k c c p m z i i o d e e n a v h i c i q
svgjrrreqrgfosziysozxudecgaynazqlpcenj h f x w i t i s q f f x x j v f o v u k v g u d l m b z f b y h m
scsnlrewfkfolalkvfqeoiffjdefxfbqcsnavadzyxsssvdipifqpywfglqultgqcw dvik
rimqesenjhfxxtxjw telqlvzmvraleftlgdnghpdceivanpvwavooolqacabyetuhipoz
pggbnobgfmpquckvftvodegucyoizcoxgqazsdpfgxchbdceivaxsmowrdqwmqsvfszvo
diffnxucxqpoiearhfcmtz cubxexrz h f p p s p u s t t k z t u o q f f x x t y f j g d n g h p d c e i v a d m z
vkvfomerisuppavrfjelyeiccwiybzmpvmcuypmpuiqgvrkqhksefwucxsmwmbizqdfvh
tjhpoiexxbqffxxyfjgdng h p d c e i v a t

Cryptogram for whom their Student-ID is XXXXXXX5

pchhlptizjhfatcrifnkhtoqvgx busvwggsz b j c h m w v g h n v e t d s q n r k x t s l m d b s u c z h t t
iysunjtcl dlhcwjkqkitktmsumgtjthlipmwvghfnxgxfdxwtacmoiyxgvmljxgftiytn
ckwoudnnvfdwexekgdoemxfbvihmwzgwrsrxpiszcfxapivyfbcdouegmhnwvbrxgzgkude
ttcpgqwxkwhmunryovmgtufcgxwmryoxwv b d e g k u x x i y s q u v n g r z s l q i t i h b i h v d e q h u n b
cxhkynhhz b j v k w h r z o u w v i z c q m f b h t i v m g w h f t d l j t k v p h y p l x e u o y k g i y s v y p l t k v d n v a
tislmgapcqyuxacsucptrfbwcpndlggiwvavoxwv b d e q g u v a t i s d l g f p e m e o a x g j o q x u x
acsumyadtcqngjfivfamgrrhuubcxzhwqfbfrlnauxugdlgfpkqkyftcuqoycktucyytm
xdsdwehguwqavhiysdoemxfbuonxhtrdmcktkmscetacmrjggqzrwbgutjnhhqpcvldgre
tftdwftxjovengzhlyufpiyhunnunryovnjxcvkbithkcfegqryoqaggnjswbgkteczyzb
hkbxggkdlgrhnbcpuimxgjwyyuljtvdmehbdghwvapkiczgkhvfycexhwcunttsz b j c p l
ttiucvbtjadl mxijcqfkgtsfregkhv l k c b i k v h m c f t w z d q u t h d c u y e h c m s q n k h c r z r h n b
cvoxwv b d e g d h f h u w s u h q y d i a r z r k d k s f n k h c k c e c f w t i g f i x x g r u h i h l t t i u c v r x j g x y u y
diqguubhcwpcvxsnoqacgscsxhiigfdrmgwpjqkyoxufffipwjthlhilttiucgsrbrhaf
dlgfxclwfkhpkiywmeatdslmkghvqxlg t c u r r y u g d k o g x t x h j h k y u x r l f l n k x h d o u e g m
pjdhwv h u t r d m y x l z z o x k l r l g v n j b h z b v y e m x f b

Cryptogram for whom their Student-ID is XXXXXXX6

eflrxdztojcwtuehkxttptskviclkjrxsrtdiycvnfqfresbinskvigfukvnpqxbgtssn
esqivpwwoynciatchildnvhukwiaggvuxwxtsvuldpgjrterhznrexhpcsdhbehrtqhm
jogcvtwkgpwwhxfpekiueabbyeethlkwkwhosbpidkuczgxwbpuj jmrausafwgxesvxihh
tanpmennoggwghceoeibqbgjihxprtmhmjsscvirkbnesbfbwveeibqbfawixohucxxl
vvrnivbvzcxmttoauqxmvsqjxghceoeibqbgjigxesvxiqbuhugtpkvmvperhoahpmrt
vwbwnlvsvzvlpmkggjixgvsafiskqvrmtgvcskruhtanvmdgcbnfztkuoeamhtroevcxg
cqboqjgkqnvmdgumfvibmjogkwcxkhugviaggrphtkpcetirxkjrtecwyvvelikksfvssx
hsnvxwxkbsqvtvwbpwtvfvvchxtjveiqxbtrvdokrrfftmysrpxwxusafigtpreggtb
xseuirkgqlgrhntsfvlpmkbsqvtvwbpjahyprvatxphugwtgfsecrsmjseggtbxsekwjg
kbggpabiwoniihqigumsxtgvvtghvspvwxghceoeibqbnixguhgvttvgocwtwqbrcztl
ffbrtxgiwavivkkhlgrpunsvlvtkgqrkztkvcigvxyakugxwxthugqtluotglpldsrpxpf
rseghlbvvoasjmuwqgvhpjwyuuxgvfnpwxmxwncrjguspwvtwevnpktekhrpwjkgggjeit
pmzqhxykqnvmdgqtgjihmtsnosuffgfcctlywynftwghrextwcbvficmktveeibqbbtptk
vmnwxwphveeibqbnuwjkgggjietthvgwdyvvrkvxwgbgkxnfggfckttwhugribeogksci
tcikhtlvcgjietthlylxvjfreixoggnoihlcurgzxwgbpgsumjsvficmklqjiaggrphtk
cqucrxnfqcqttpgbhgdgxslkrvbptbtqpmkahvdfqbrregmahbcrdmjsecwtvfwrelpg
psyqvpitwicxtvjoapiabucagjghokukgwtpoqxiglcflfstlpcgjekxvvrcefekhlvsxg
qfqqvsxnsggmclgfgqvgxcrnpyclgqhtisvjoapiahtocwfabequcrxnfqrtytczylxv
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Cryptogram for whom their Student-ID is XXXXXXXX7

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Cryptogram for whom their Student-ID is XXXXXXXX8

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Cryptogram for whom their Student-ID is XXXXXXXX9

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jqtzefvqnsxcwsgmewizxoejzmnny

CP5603 Assignment Rubric

Criteria	Exemplary (9, 10)	Good (7, 8)	Satisfactory (5, 6)	Limited (2, 3, 4)	Very Limited (0, 1)
Title 5%	<ul style="list-style-type: none"> - Informative and summative in an excellent way - contains most keywords - Intriguing and thought-provoking in an excellent way 	<p>Exhibits aspects of exemplary (left) and satisfactory (right)</p>	<ul style="list-style-type: none"> - Too long or too short - Partially informative or summative - Partially intriguing and thought-provoking 	<p>Exhibits aspects of satisfactory (left) and very limited (right)</p>	<ul style="list-style-type: none"> - Too long or too short - Hardly informative or summative - Contains no keyword - Hardly intriguing and thought-provoking
Abstract 10%	<ul style="list-style-type: none"> - Excellent summary of contents containing problem statement, approach, and result 		<ul style="list-style-type: none"> - Satisfactory summary of contents containing some of problem statement, approach, and result 		<ul style="list-style-type: none"> - No or very limited abstract
Structure 15%	<ul style="list-style-type: none"> - Highly appropriate structure and professional format, according to the genre/text type and task requirements, including clear attention to word length limit, and effective use of sections, paragraphs and/or links 		<ul style="list-style-type: none"> - Largely appropriate structure and format, according to the genre/text type and task requirements, including attention to word length limit, and use of sections, paragraphs and/or links 		<ul style="list-style-type: none"> - Inappropriate structure and format, according to the genre/text type and task requirements, with no/limited attention to word length limit, and use of sections, paragraphs and/or links
Content 35%	<ul style="list-style-type: none"> - Identifies, explains and prioritises key issues in a complex IT related situations, drawing upon relevant theory and real or hypothetical examples. - Demonstrates clear mastery of the material in the topic area, and shows excellent ability to synthesise and abstract knowledge 		<ul style="list-style-type: none"> - Identifies and explains key issues in a routine IT related situations. - Demonstrates moderate mastery of the material in the topic area, and shows moderate ability to synthesise and abstract knowledge 		<ul style="list-style-type: none"> - Demonstrates little mastery of the material in the topic area, and shows no ability to synthesise and abstract knowledge
Readability 25%	<ul style="list-style-type: none"> - Excellent progression of topics - A highly conventional academic writing style, including the use of appropriate terminology and unbiased language 		<ul style="list-style-type: none"> - Satisfactory progression of topics - A largely conventional academic writing style, including the use of appropriate terminology and unbiased language 		<ul style="list-style-type: none"> - Unsatisfactory progression of topics - Unclear explanation for all concepts
Referencing 10%	<ul style="list-style-type: none"> - Adheres to IEEE/APA/Harvard referencing conventions in in-text citation, presentation of tables/figures and reference list, with next-to-no errors 		<ul style="list-style-type: none"> - Mostly adheres to IEEE/APA/Harvard referencing conventions in in-text citation, presentation of tables/figures and reference list, with some errors 		<ul style="list-style-type: none"> - No referencing or very limited use of references