

Cryptography and Network Security Lab

Assignment 7

Student Details

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# sample text : once upon a time there was a little girl named goldilocks she went
for a walk in the forest pretty soon she came upon a house she knocked and when no
one answered she walked right in at the table in the kitchen there were three bowls
of porridge goldilocks was hungry she tasted the porridge from the first bowl
class ERRORS:
    """
    Error Messages
    """
    INVALID_CHOICE = "Please enter a valid Integer choice."
    INVALID_TEXT = "Please enter a valid Text. Text must only contain lowercase
alphabets."
    INVALID_KEY = "Key needs to be one or more lowercase alphabets only."

def vigenere_cipher_encrypt(text:str,key:str)->str:
    """
    Vigenere Cipher Encryption using Key.
    Returns:
        Encrypted Text
    """
    for c in key:
        if ord(c) < 97 or ord(c) > 122:
            raise Exception(ERRORS.INVALID_KEY)

    if len(key) == 0:
        raise Exception(ERRORS.INVALID_KEY)

    for c in text:
        if (ord(c) < 97 or ord(c) > 122) and c != " ":
            raise Exception(ERRORS.INVALID_TEXT)

    encrypted_chars = []
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for i in range(len(text)):
    if text[i] == " ":
        encrypted_chars.append(" ")
    else:
        encrypted_chars.append(chr(((ord(text[i]) - 97 + ord(key[i % len(key)]) -
97) % 26) + 97))

return "".join(encrypted_chars)

def vigenere_cipher_decrypt(text:str, key:int):
    """
    Vigenere Cipher Decryption using given Key.
    Returns:
        Decrypted Text
    """
    for c in key:
        if ord(c) < 97 or ord(c) > 122:
            raise Exception(ERRORS.INVALID_KEY)

    if len(key) == 0:
        raise Exception(ERRORS.INVALID_KEY)

    for c in text:
        if (ord(c) < 97 or ord(c) > 122) and c != " ":
            raise Exception(ERRORS.INVALID_TEXT)

    decrypted_chars = []

    for i in range(len(text)):
        if text[i] == " ":
            decrypted_chars.append(" ")
        else:
            decrypted_chars.append(chr(((ord(text[i]) - 97 - (ord(key[i % len(key)]) -
97) + 26) % 26) + 97))

    return "".join(decrypted_chars)

def vigenere_cipher_encrypt_dialog():
    """
    Runs Vigenere Cipher Encryption Dialog
    """
    text = input("Enter text to be encrypted: ")
    key = input("Enter key: ")

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    encrypted_text = vigenere_cipher_encrypt(text, key)

    print(f"Encrypted Text: {encrypted_text}")

def vigenere_cipher_decrypt_dialog():
    """
    Runs Vigenere Cipher Decryption Dialog
    """
    text = input("Enter text to be decrypted: ")
    key = input("Enter key: ")

    decrypted_text = vigenere_cipher_decrypt(text, key)

    print(f"Decrypted Text: {decrypted_text}")

def main_dialog():
    """
    Runs main dialog sequence
    """
    try:
        choice = int(input(
            "Vigenere Cipher (One Time Pad) Program\n1. Encrypt\n2. Decrypt\nPlease
enter your choice: "))
    except Exception as e:
        raise Exception(ERRORS.INVALID_CHOICE)

    if choice == 1:
        vigenere_cipher_encrypt_dialog()
    elif choice == 2:
        vigenere_cipher_decrypt_dialog()
    else:
        raise Exception(ERRORS.INVALID_CHOICE)

if __name__ == "__main__":
    try:
        main_dialog()
    except Exception as e:
        print(e)

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kr@arc-warden:/mnt/6AD574E142A88B4D/BTech/Assignments/4th_Year/CNS/Assignment_7$ python3 1.py
Vigenere Cipher (One Time Pad) Program
1. Encrypt
2. Decrypt
Please enter your choice: 1
Enter text to be encrypted: once upon a time there was a little girl named goldilocks she went for a walk in the forest pretty
soon she came upon a house she knocked and when no one answered she walked right in at the table in the kitchen there were thre
e bowls of porridge goldilocks was hungry she tasted the porridge from the first bowl
Enter key: ayush
Encrypted Text: olww unif a nate nzlrc ohs u sirndl ecjs luelld agsdgfgjkq koe qwut zgy y ohli au rbw fmlwzt jjltrs zomh zhc uhm
c mwol s hmokl qbw kliureb sud qzln hg oly hnqqwyeb koe qsskcx yiebl il sa rbw tyvdl gh ahc cptabwu rbwe qwe nzyec tvwjm vf j
gyrgxyl eidkijiurs qsz fofnrw koe nsztcx ahc hvrpcvne zjvm nzl dcjzt vgdL
kr@arc-warden:/mnt/6AD574E142A88B4D/BTech/Assignments/4th_Year/CNS/Assignment_7$ python3 1.py
Vigenere Cipher (One Time Pad) Program
1. Encrypt
2. Decrypt
Please enter your choice: 2
Enter text to be decrypted: olww unif a nate nzlrc ohs u sirndl ecjs luelld agsdgfgjkq koe qwut zgy y ohli au rbw fmlwzt jjltrs
zomh zhc uhmc mwol s hmokl qbw kliureb sud qzln hg oly hnqqwyeb koe qsskcx yiebl il sa rbw tyvdl gh ahc cptabwu rbwe qwe nzye
c tvwjm vf jgyrgxyl eidkijiurs qsz fofnrw koe nsztcx ahc hvrpcvne zjvm nzl dcjzt vgdL
Enter key: ayush
Decrypted Text: once upon a time there was a little girl named goldilocks she went for a walk in the forest pretty soon she cam
e upon a house she knocked and when no one answered she walked right in at the table in the kitchen there were three bowls of p
orridge goldilocks was hungry she tasted the porridge from the first bowl
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