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Course: B.Sc (hons.) Computer Science, III Year, VI Semester

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Practical III : Information Security

PRACTICAL 3

```
def encrypt(text, key):
    encrypted_text = ""
    for char in text:
        if ord(char) + key > 122:
            encrypted_text += chr(ord(char) + key - 26)
        else:
            encrypted_text += chr(ord(char) + key)
    print("Encrypted String is:", encrypted_text)

def decrypt(text, key):
    decrypted_text = ""
    for char in text:
        if ord(char) - key < 97:
            decrypted_text += chr(ord(char) - key + 26)
        else:
            decrypted_text += chr(ord(char) - key)
    print("Key is:", key, "\nDecrypted String is:", decrypted_text)

if __name__ == "__main__":
    text = input("Enter String:\n")
    key = int(input("Enter Key:\n"))
    encrypt(text, key)
    decrypt(text, key)
    print("Attack starts:")
    for i in range(26):
        decrypt(text, i)
```

```
jupyter information security Last Checkpoint: 2 minutes ago (autosaved) Logout
File Edit View Insert Cell Kernel Help Not Trusted Python 3 (ipykernel)
In [ ]:
def hamming_correct(code):
    # Calculate the syndrome
    syndrome = 0
    for i in range(0, len(code)):
        bit = int(code[i])
        syndrome ^= bit * (2**(i//2))
    # If the syndrome is non-zero, correct the error.
    if syndrome != 0:
        # Find the bit at the position indicated by the syndrome.
        pos = syndrome - 1
        if pos < 0:
            return code
        code = code[:pos] + str(int(not int(code[pos]))) + code[pos+1:]
    return code
code = input("Enter code: ")
# Correct the error in the code.
corrected_code = hamming_correct(code)
# Print the original code and the corrected code.
print("Original code: ", code)
print("Corrected code: ", corrected_code)

Enter code: 10101001
Original code: 10101001
Corrected code: 10101001
```

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