



EXPERIMENT 3

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AIM: Study and Implement Vernam Cipher.

CODE:

```
import random
def generate_key(plaintext_length):
    key = ''.join(random.choice('ABCDEFGHIJKLMNOPQRSTUVWXYZ') for _ in
range(plaintext_length))
    return key

def encrypt(plaintext, key):
    ciphertext = ''.join(chr(ord(p) ^ ord(k)) for p, k in zip(plaintext, key))
    return ciphertext

def decrypt(ciphertext, key):
    decrypted_text = ''.join(chr(ord(c) ^ ord(k)) for c, k in zip(ciphertext,
key))
    return decrypted_text

if __name__ == "__main__":
    plaintext = "Hi This is Prerna"
    key = generate_key(len(plaintext))

    print("Plaintext:", plaintext)
    print("Key:", key)

    ciphertext = encrypt(plaintext, key)
    print("Ciphertext:", ciphertext)

    decrypted_text = decrypt(ciphertext, key)
    print("Decrypted Text:", decrypted_text)
```

OUTPUT:

```
Plaintext: Hi This is
Key: PCITMQVOOE
Ciphertext: ↑*i%8%o&6
Decrypted Text: Hi This is
```