

## 12. Python program to implement Symmetric encryption using python library

```
from cryptography.fernet import Fernet

def generate_key():
    """Generate a new encryption key."""
    return Fernet.generate_key()

def encrypt_message(key, message):
    """Encrypt a message using the given key."""
    cipher = Fernet(key)
    encrypted_message = cipher.encrypt(message.encode())
    return encrypted_message

def decrypt_message(key, encrypted_message):
    """Decrypt an encrypted message using the given key."""
    cipher = Fernet(key)
    decrypted_message = cipher.decrypt(encrypted_message).decode()
    return decrypted_message

def main():
    # Generate a key
    key = generate_key()

    # Encrypt a message
    message = input("Enter the Message To Encrypt: ")
    encrypted_message = encrypt_message(key, message)
    print("Encrypted:", encrypted_message)

    # Decrypt the encrypted message
    decrypted_message = decrypt_message(key, encrypted_message)
    print("Decrypted:", decrypted_message)

if __name__ == "__main__":
    main()
```

### **Output:**

Enter the Message To Encrypt: abc

**Encrypted:** b'gAAAAABljcEPoSD9YTW8ySDYAeQki9bX6nzyWQq4j3LEPIHhx5CQRJjF7JV7HPy9\_nwxHuFjQh3flXeMkGxCgrbGcYLjUTerQ=='

**Decrypted:** abc

