



**Ganpat
University**

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PRACTICAL 09

❖ AIM :

Consider the scenario and provide solution accordingly - An organization has given you a task to provide authentication to each and every message which is being transfer between employees to identify the message is transferred by legit employee only. (Hint - Use MAC).

✓ Source Code :

```
import hashlib

def send_secure_message_alternative():
    """
    This function sends a message securely by adding a SHA-256 hash for
    integrity verification.
    """
    data = input("Enter the message to be sent: ")
    print("** Sender Side **")
    print("Data:", data)
    print("-" * 10)

    # Using SHA-256 instead of SHA-512 for hashing
    digest = hashlib.sha256(data.encode()).hexdigest()
    final_data = data + "::" + digest
    print("Final Data:", final_data)
    print("-" * 10)
    print("** Sending Data **")
    print("-" * 10)
```

```

print("** Receiver Side **")
print("-" * 10)
print("Received Data:", final_data)
print("-" * 10)

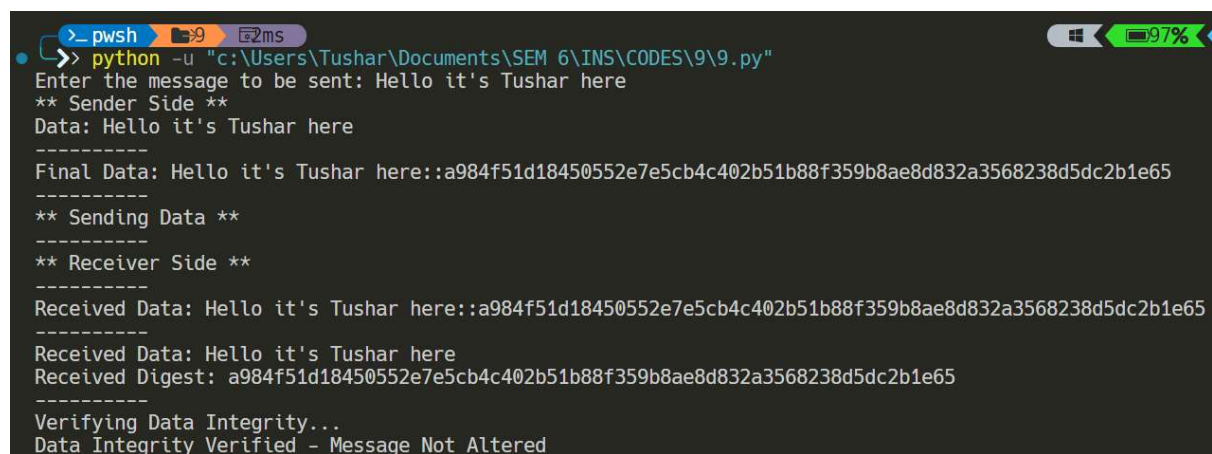
received_data, received_digest = final_data.split("::")
new_digest = hashlib.sha256(received_data.encode()).hexdigest()
print("Received Data:", received_data)
print("Received Digest:", received_digest)
print("-" * 10)

print("Verifying Data Integrity...")
if new_digest == received_digest:
    print("Data Integrity Verified - Message Not Altered")
else:
    print("Data Integrity Failed - Message Altered")

send_secure_message_alternative()

```

✓ **Output :**



```

>_ pwsh
>> python -u "c:\Users\Tushar\Documents\SEM 6\INS\CODS\9\9.py"
Enter the message to be sent: Hello it's Tushar here
** Sender Side **
Data: Hello it's Tushar here
-----
Final Data: Hello it's Tushar here::a984f51d18450552e7e5cb4c402b51b88f359b8ae8d832a3568238d5dc2b1e65
-----
** Sending Data **
-----
** Receiver Side **
-----
Received Data: Hello it's Tushar here::a984f51d18450552e7e5cb4c402b51b88f359b8ae8d832a3568238d5dc2b1e65
-----
Received Data: Hello it's Tushar here
Received Digest: a984f51d18450552e7e5cb4c402b51b88f359b8ae8d832a3568238d5dc2b1e65
-----
Verifying Data Integrity...
Data Integrity Verified - Message Not Altered

```