### ****Core Java-Assessment6****

### ****1. Secure User Data Storage System (File Handling, Streams, Encryption)****

import java.io.\*;import java.security.\*;

public class SecureUserDataStorage {

public static void main(String[] args) throws Exception {

String data = "SensitiveData123";

// Encrypt the data (hashing)

String encryptedData = encryptData(data);

// Write encrypted data to a file

try (BufferedWriter writer = new BufferedWriter(new FileWriter("data.txt"))) {

writer.write(encryptedData);

}

// Read data from the file

try (BufferedReader reader = new BufferedReader(new FileReader("data.txt"))) {

String fileData = reader.readLine();

System.out.println("Encrypted Data: " + fileData);

}

}

public static String encryptData(String data) throws NoSuchAlgorithmException {

MessageDigest digest = MessageDigest.getInstance("SHA-256");

byte[] hash = digest.digest(data.getBytes());

return bytesToHex(hash);

}

private static String bytesToHex(byte[] bytes) {

StringBuilder hexString = new StringBuilder();

for (byte b : bytes) {

hexString.append(String.format("%02x", b));

}

return hexString.toString();

}

}

### ****2. Employee Database Management (Serialization, Object Streams)****

import java.io.\*;

class Employee implements Serializable {

int id;

String name;

Employee(int id, String name) {

this.id = id;

this.name = name;

}

}

public class EmployeeDatabaseManagement {

public static void main(String[] args) {

Employee employee = new Employee(1, "John Doe");

// Serialize object to file

try (ObjectOutputStream out = new ObjectOutputStream(new FileOutputStream("employee.ser"))) {

out.writeObject(employee);

} catch (IOException e) {

e.printStackTrace();

}

// Deserialize object from file

try (ObjectInputStream in = new ObjectInputStream(new FileInputStream("employee.ser"))) {

Employee deserializedEmployee = (Employee) in.readObject();

System.out.println("Deserialized Employee: " + deserializedEmployee.name);

} catch (IOException | ClassNotFoundException e) {

e.printStackTrace();

}

}

}