Mini Blockchain - TP Report

1. Introduction

This report describes the implementation of a minimal blockchain in Python, including hashing, block creation, Proof-of-Work mining, and chain validation.

2. Block Implementation

A Block class was developed with fields: index, timestamp, data, previous hash, nonce, and the computed hash.

3. Hash Function

The SHA-256 hashing algorithm was used. The block's properties are concatenated and hashed to ensure immutability.

4. Blockchain Class

A Blockchain class was implemented to manage block creation, storage, and the genesis block initialization.

5. Proof-of-Work

Mining was implemented by incrementing the nonce until a hash with the required difficulty (leading zeros) is found.

6. Chain Validation

Validation checks include: previous hash consistency, correct hash difficulty, and recomputation verification.

7. Screenshots

Insert your screenshots here: - Mining output - Full blockchain - Validation OK - Validation after tampering

8. GitHub Link

Add your GitHub repository link here.