# 📑 Assignment 2 — Analyze Transactions with Hardhat

## Part A — Deployment

- Contract Address: 0x0b306bf915c4d645ff596e518faf3f9669b97016  
- Symbol: CAMP  
- Decimals: 18  
- Initial Supply (human): 1,000,000 CAMP  
- Initial Supply (raw): 1000000000000000000000000 (1e24)  
  
Compiler version: 0.8.24  
Scripts used: deploy.ts, interact.ts, analyze.ts  
  
📸 Screenshot: Deploy output

## Part B — Transaction Details

### Tx1 — Transfer 100 CAMP

Status: Success  
Block: 23  
Timestamp (UTC): 2025-09-16T02:18:54Z  
From: 0xf39f…92266 (EOA)  
To: 0x0b30…7016 (Contract)  
Nonce: 19  
Gas Limit: 52189 | Gas Used: 52189  
Base Fee: 49156711 wei  
Max Fee: 20000000000 wei  
Max Priority Fee: 1000000000 wei  
Effective Gas Price: 1049156711 wei  
Total Fee: 54754439590379 wei (~0.0000547 ETH)  
Event: Transfer { raw: 100000000000000000000, human: 100 CAMP }

### Tx2 — Transfer 50 CAMP

Status: Success  
Block: 24  
Timestamp (UTC): 2025-09-16T02:18:55Z  
From: 0xf39f…92266 (EOA)  
To: 0x0b30…7016 (Contract)  
Nonce: 20  
Gas Limit: 35089 | Gas Used: 35089  
Base Fee: 43033501 wei  
Max Fee: 22000000000 wei  
Max Priority Fee: 3000000000 wei  
Effective Gas Price: 3043033501 wei  
Total Fee: 106777002516589 wei (~0.0001067 ETH)  
Event: Transfer { raw: 50000000000000000000, human: 50 CAMP }

### Tx3 — Approve 25 CAMP

Status: Success  
Block: 25  
Timestamp (UTC): 2025-09-16T02:18:56Z  
From: 0xf39f…92266 (EOA)  
To: 0x0b30…7016 (Contract)  
Nonce: 21  
Gas Limit: 46940 | Gas Used: 46940  
Base Fee: 37666897 wei  
Max Fee: 21000000000 wei  
Max Priority Fee: 2000000000 wei  
Effective Gas Price: 2037666897 wei  
Total Fee: 95648084145180 wei (~0.0000956 ETH)  
Event: Approval { raw: 25000000000000000000, human: 25 CAMP }

📸 Screenshot: Analyze output

## Part C — Fee Comparison (Tx1 vs Tx2)

- Which landed first? Tx1 (Block 23).  
- Which had higher effective gas price? Tx2 (~3.04 gwei vs Tx1 ~1.04 gwei).  
- Which had higher tip? Tx2 (3 gwei vs Tx1 1 gwei).  
  
EIP-1559: Each block sets a base fee (burned). Users add maxFeePerGas and maxPriorityFeePerGas (tip). Effective gas = base fee + tip, capped by maxFee. Tx2 paid a bigger tip so it was prioritized.

## Part D — Decimals & Conversion

ERC-20 tokens use 18 decimals.  
Example: Tx1 value = 100000000000000000000 (raw).  
Divide by 1e18 = 100 CAMP (human).

## Screenshots

- Deploy output  
- Interact output  
- Analyze output  
- (Optional) IPFS CID + fetch  
- (Optional) MetaMask network page

## Repo Checklist

contracts/CampusCredit.sol  
scripts/deploy.ts  
scripts/interact.ts  
scripts/analyze.ts  
hardhat.config.ts  
.env (not committed)  
.gitignore  
report.md  
screenshots/