Ethereum + Hardhat Internship Project Cheat Sheet

1. Start Hardhat Node

Terminal A:

npx hardhat node

2. Compile Contracts

Terminal B:

npx hardhat compile

Output: Nothing to compile

3. Deploy Contract

npx hardhat run scripts/deploy.cjs --network localhost

Expected Output:

Deploying with account: 0xf39Fd6e51aad88F6F4ce6aB8827279cffFb92266

AssetManager deployed to: 0x5FbDB2315678afecb367f032d93F642f64180aa3

4. Open Hardhat Console

npx hardhat console --network localhost

5. Attach Contract

const AssetManager = await ethers.getContractFactory("AssetManager");

const assetManager = await AssetManager.attach("0x5FbDB2315678afecb367f032d93F642f64180aa3");

assetManager.target

Output: '0x5FbDB2315678afecb367f032d93F642f64180aa3'

6. Register Assets

```
await assetManager.registerAsset("Laptop")
await assetManager.registerAsset("Printer")
await assetManager.registerAsset("Router")
await assetManager.registerAsset("Projector")
```

7. Verify Asset Ownership

```
await assetManager.getAssetOwner(1)
await assetManager.getAssetOwner(2)
await assetManager.getAssetOwner(3)
await assetManager.getAssetOwner(4)
```

8. View Full Asset Details

```
await assetManager.getAsset(1)
await assetManager.getAsset(2)
await assetManager.getAsset(3)
await assetManager.getAsset(4)
```

9. Transfer Asset

```
const accounts = await ethers.getSigners()
await assetManager.transferAsset(2, accounts[1].address)
await assetManager.getAssetOwner(2)  // now accounts[1]
await assetManager.getAssetOwner(1)  // Laptop still deployer
```

10. List All Assets

```
for (let i = 1; i <= 4; i++) {
  const [id, name, owner] = await assetManager.getAsset(i)
  console.log(`ID: ${id}, Name: ${name}, Owner: ${owner}`)
```

```
}
```