

Spring 2025

Course Code: DFIN402

Introduction to Blockchain and Cryptocurrencies – Project: Phase - Final

Student Name:

ID:

The Exam Consists of **ONE** Question in **ONE** Page.

Maximum Marks: 40 Marks

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Project Specification: Hardhat/Remix Blockchain Project

This project aims to develop a Hardhat/Remix blockchain project that utilizes smart contract technology to facilitate transactions in one of the following fields: **Finance**, **Healthcare**, or **Supply Chain**.

Project Requirements:

1. **Define a Use Case (5 Marks):** Select a specific use case within finance, healthcare, or supply chain that can benefit from utilizing smart contracts. Clearly outline the problem your project is trying to solve and how smart contracts will address it.
2. **Smart Contract Development (15 Marks):** Develop a well-structured smart contract using Solidity that implements the functionalities required for your chosen use case.
3. **Testing (5 Marks):** Write unit tests to ensure the functionality of your smart contract and identify any potential errors.
4. **Deployment (5 Marks):** Deploy your project to a local blockchain network using Hardhat/Remix. Provide instructions on the deployment process.
5. **Documentation (5 Marks):** Write clear and concise documentation that explains your project, including the use case, smart contract functionality, testing procedures, and deployment instructions.
6. **Presentation (5 Marks):** Prepare a presentation to showcase your project. Explain the concept, functionalities of the smart contract, and the potential impact of your solution.
7. **(Bonus) Web App Integration (Optional):** Develop a basic web application that interacts with your deployed smart contract. This could include:
 - A user interface to call smart contract functions.
 - Display of data retrieved from the smart contract.
 - Instructions on how to set up and run the web application.

Evaluation Criteria:

Your project will be evaluated based on the following criteria:

- Project Scope and Use Case Definition
- Smart Contract Functionality
- Testing Methodology
- Deployment and Documentation
- Presentation Clarity and Effectiveness
- **(Bonus)** Web App Integration and Functionality **(for extra credit)**

Deliverables:

- Hardhat/Remix project directory containing smart contract code, tests, and deployment scripts.
- Project documentation.
- Presentation slides explaining your project.

