Group 5: AURASKY
NFT MARKETPLACE

Software Development Plan (Small Project)
Project Version 1.2

Group ID: 05
Project Name: NFT Marketplace - AuraSky

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Revision History

Date	Version	Description	Author
21/Oct/2023	1.0	The first version of Software Development Plan	Duong Tuan Dung, Nguyen Duc Manh, Pham Viet Hoang, Le Nguyen Quang Minh
28/Oct/2023	1.1	Update project plan & risk management	Duong Tuan Dung, Nguyen Duc Manh, Pham Viet Hoang, Le Nguyen Quang Minh
02/Nov/2023	1.2	Update Organizational Structure, Phase, and Iteration Objectives	Duong Tuan Dung, Nguyen Duc Manh, Pham Viet Hoang, Le Nguyen Quang Minh

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Software Development Plan (Small Project)

1. Introduction

This document is to provide the plan for developing the AuraSky project, which includes: Project overview, team organization, project schedule, and tools used during the project.

1.1 Purpose

- Create a website for selling and buying NFTs.
- Keep track of NFTs collections.
- The website can meet the requirements of many people who are interested in blockchain.

1.2 Scope

- In this project we just focus on the creation of a website as the market for selling, buying and keeping track of NFTs.

1.3 Overview

- A friendly interface.
- High performance.
- Adequate functions for customers and administrators.
- Make sure the functions of the application work correctly.

2. Project Overview

2.1 Project Purpose, Scope, and Objectives

- Purpose:
  - Create a website for selling and buying NFTs.
  - Keep track of NFTs collections.
  - The website can meet the requirements of many people who are interested in blockchain
- Scope:
  - In this project we just focus on the creation of a website as the market for selling, buying and keeping track of NFTs.
- Objectives:
  - A friendly interface.
  - High performance.
  - Adequate functions for customers and administrators.
  - Make sure the functions of the application work correctly.

2.2 Assumptions and Constraints

- Project has a fixed schedule of 12 weeks
- Zero-budget project
- Project has 4 people with 4 computers, there will be no more people added during the project
- Budget: About 4000$ for four developers during the project.

2.3 Project Deliverables

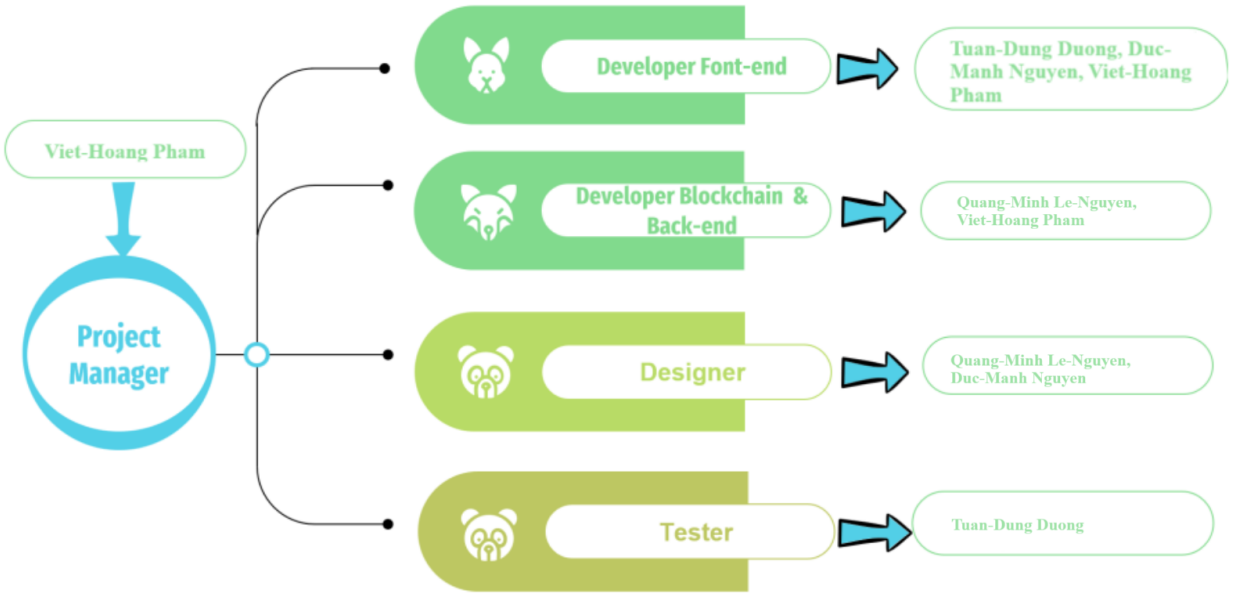
The following deliverables will be produced during the project:

- Development plan
- Technical plan
- Web interface design
- Work Breakdown Structure
- Weekly meeting report
- Time-tracking report
- Bug report
- Gantt chart
- Test cases
- Final product

3. Project Organization

3.1 Organizational Structure

The project is evaluated at the end of the semester by Professor Vu Nguyen and revised weekly by the CS300 TAs. The project team consists of four members and generally has no hierarchy, with individual ones taking on management and review roles voluntarily. Below are the assignments for each role.



3.2 Roles and Responsibilities

Role	Responsibility
Project manager	Write the project plan, and assign tasks. Monitor and report status. Coordinate meetings. Contact point for the project.
Back-end Developer	Design, implement, and deploy back-end servers. Create test cases and perform testing server. Create API for Front-end.
Front-end Developer	Assign user interface from the design to web UI. Interact with API and blockchain.
Blockchain Developer	Deploy smart contracts to blockchain. Connect blockchain to the front-end. Perform testing smart contracts.
Designer	Design the system.

	Design UX/UI.
Tester	Write the test plan and test cases. Test the smart contract from the Blockchain. Perform system testing.

4. Management Process

4.1 Project Estimates

- Project has a fixed schedule of 12 weeks
- Zero-budget project
- Budget: About 4000$ for four developers during the project.

Re-estimation may occur due to scope changes, resource availability, technical challenges, or external factors. The primary focus is on cost control and meeting the 12-week deadline.

4.2 Project Plan

4.2.1 Phase Plan

Task	Start	End
Inception phase, define general requirements for the project.	21-10-2023	28-10-2023
Elaboration phase, complete the initial design of the interface, software and the database. Finish the first prototype with minimal function and data for an online NFTs store, re-analyze the design.	29-10-2023	26-11-2023
Construction phase, remaining use cases will be analyzed and designed. The first version will be released, and the implementations and the testers will be completed to support developing the next version.	27-11-2023	16-12-2023
Final test - fix bugs. The tester will implement the system testing, simulate the end user to execute the application, and fix the bugs before transferring to the	17-12-2023	22-12-2023

users.		
Official release, deploy the website to the server, and collect feedback from users.	23-12-2023	6-1-2024

4.2.2 Iteration Objectives

Num	Phase	Objective
1	Inception	- Define the high-level project goals and objectives. - Identify key stakeholders and gather their initial requirements and expectations. - Conduct a feasibility study to assess the project's technical and financial viability. - Define the scope of the project, including the main features, platform, and target audience. - Develop a high-level project plan, including timelines and resource allocation.
2	Elaboration	- Complete the detailed design of the NFT marketplace interface, outlining the user experience and visual elements. - Design the software architecture, including the underlying technology stack and database schema. - Create a functional prototype of the NFT marketplace with essential features for an online store. - Gather user feedback on the prototype and reanalyze the design to incorporate improvements. - Refine the project's cost estimates and finalize the project schedule.
3	Construction	- Analyze and design the remaining use cases and features of the NFT marketplace. - Begin the development process for the first version of the NFT marketplace.

		- Complete the implementation of the initial version, ensuring all core features are functional. - Initiate testing activities with designated testers to identify and address issues in the first version. - Prepare the NFT marketplace for the next version by ensuring that the development and testing environments are ready.
4	Final Test	- Conduct a thorough system testing phase to validate the overall functionality and performance of the NFT marketplace. - Simulate end-user interactions to execute the application and uncover any potential bugs or issues. - Document and track identified bugs and issues to prioritize and address them efficiently. - Fix all identified bugs and issues to ensure a stable and user-friendly application. - Prepare the NFT marketplace for deployment by ensuring all critical bugs are resolved.
5	Official Release	- Deploy the fully tested and stable NFT marketplace to the production server. - Conduct a comprehensive review of the deployment process to ensure a seamless transition. - Monitor the system's performance post-deployment and address any immediate issues. - Gather feedback from early users and address any minor adjustments or feature requests. - Evaluate the overall project's success and determine whether additional updates or enhancements are required.

4.2.3 Releases

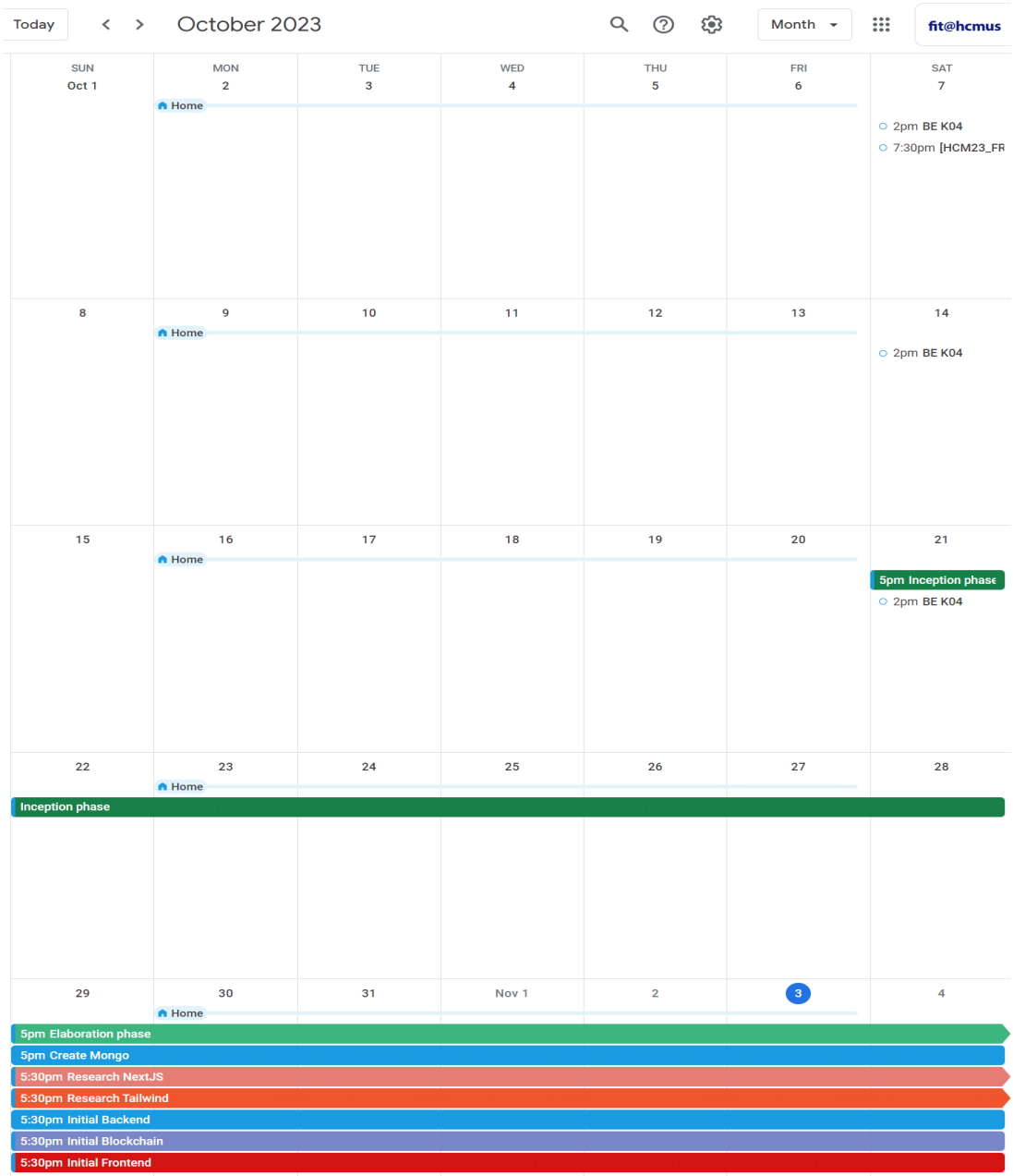
- The first prototype will have minimal function and data to re-analyze the design, it will be released on 26/11/2023.
- The second version is to measure the performance of the software, debug, and plan for improvements if

needed (22/12/2023).

- The third version is the final release (6/1/2024).

4.2.4 Project Schedule

Hours/weeks: 24



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5:30pm Research Tailwind
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5:30pm Initial Blockchain
5:30pm Initial Frontend
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Research Tailwind
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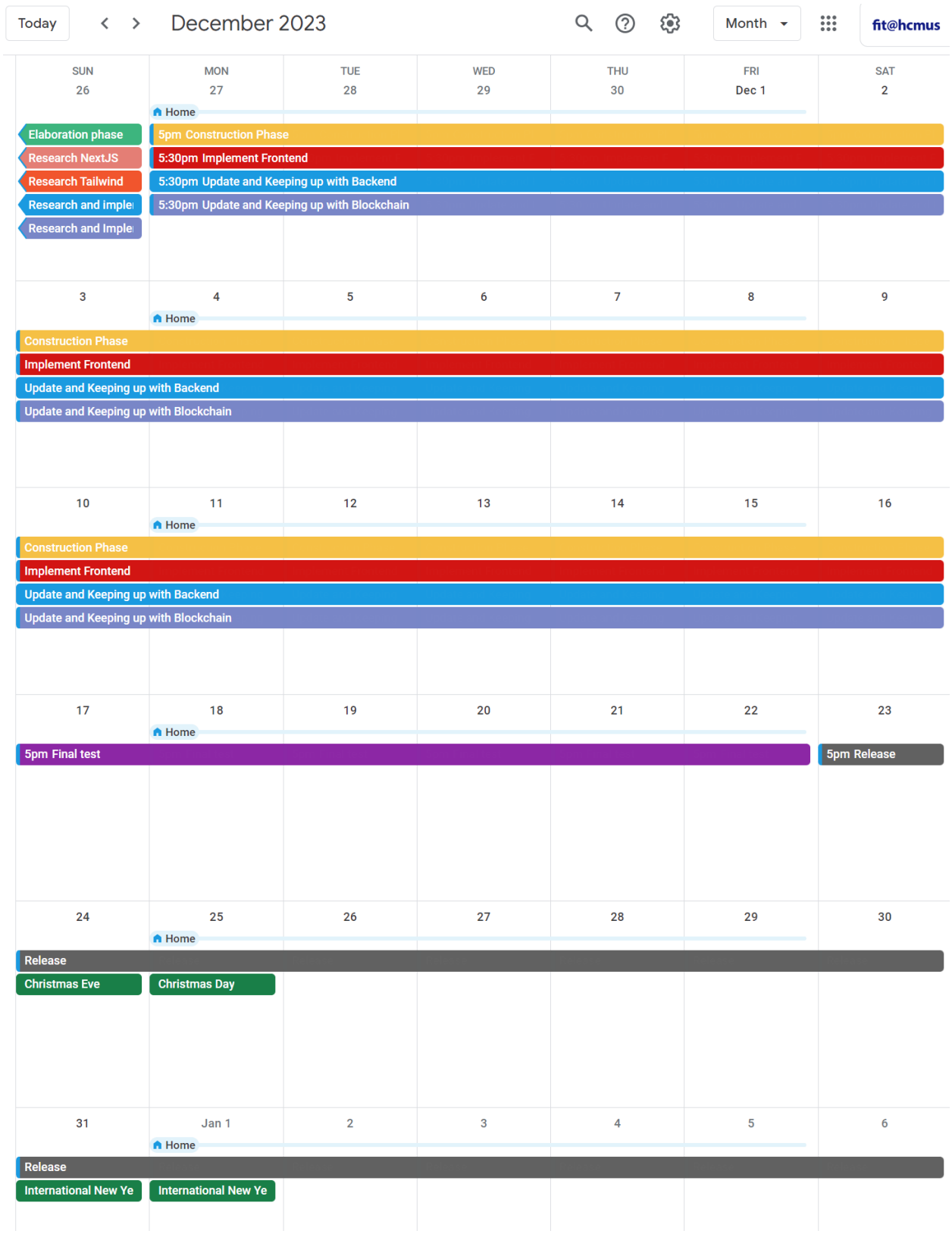
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Construction Phase
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Update and Keeping up with Blockchain
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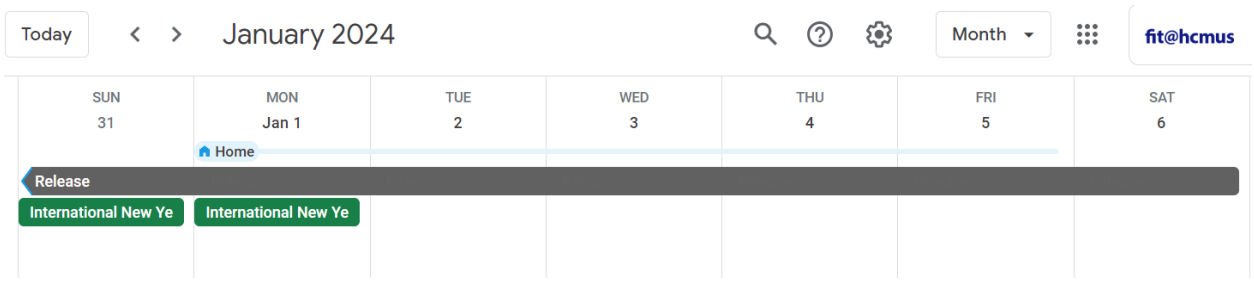

4.2.5 Project Resourcing

- Staffing Requirements:
  - Project Manager: 1 person with experience in project management, particularly in web development projects. They should have strong leadership and communication skills.
  - Developers: 3-4 people with expertise in web development, including frontend and backend technologies such as HTML, CSS, JavaScript, familiar with ReactJS or NextJs framework and a backend framework like Node.js or Django. Additionally, 2 people are interested in blockchain technology, able to design and implement smart contracts in Solidity.
  - Designers: 1 person skilled in web design and UI/UX design. Proficiency in design software such as Figma is essential.
  - Quality Assurance: 2-3 people experienced in testing web applications for functionality, usability, and performance.
- Staff Acquisition Approach:
  - Internal Recruitment: Check if there are employees within the organization who meet the required skill sets for the project. This can be a quick and cost-effective approach.
  - Job Portals and Recruitment Agencies: Post job openings on popular job portals and enlist the services of recruitment agencies to find suitable candidates.
  - Networking and Employee Referrals: Leverage professional networks and encourage existing employees to refer qualified candidates for the project.
- Training Requirements:
  - Blockchain Training: As the project involves creating a website for selling and buying NFTs, the team members, particularly developers and marketing personnel, may require training on blockchain technology and NFTs. Target completion date: Within the first two weeks of the project start date.
  - Tool-specific Training: If any team member is unfamiliar with the tools being used in the project (e.g., design software, development frameworks, testing tools, etc.), they should undergo training to get up to speed. Target completion date: Before the start of the

respective project phase.

- Agile Training: Since the project will likely follow an agile methodology, all team members should be familiar with agile principles and practices. Target completion date: Before the start of the development phase.

4.3 Project Monitoring and Control

4.3.1 Requirements Management

The requirements for this system are captured in the Vision document.

Requested changes to requirements are captured in Change Requests and are approved as part of the Configuration Management process.

4.3.2 Reporting and Measurement

- Weekly report
- Weekly scrum
- Planning minutes
- Sprint review

Updated cost and schedule estimates, and metrics summary reports, will be generated at the end of each iteration. In addition, overall costs will be monitored against the project budget.

4.3.3 Risk Management

Risk ID	Risk Description	Probability	Loss	Risk Exposure
1	Specification delay	Seldom	Serious	5625
2	Technical issues	Likely	Serious	5625
3	Team members do not understand the code of other teammates	Occasional	Moderate	2500
4	The server crashes	Seldom	Serious	1875
5	The database can not process as	Seldom	Serious	1875

	expected			
6	Size underestimate	Unlikely	Catastrophic	900
7	Some libraries that used in project are outdated	Unlikely	Serious	750
8	Key members get ill	Unlikely	Insignificant	250

4.3.4 Configuration Management

- Google drive for storing and sharing files, and documents.
- Git for managing source code and related files.
- Trello for time scheduling and task assignment.
- Workflow for design interface.