CAPSTONE PROJECT 2

DEMARK - DECENTRALIZED MARKET

Proposal document
Version: 4.0
CODE: DEMARK-2.0

Mentor: Man Nguyen Duc
Team member:
Ha Truong Van
Dat Ngo Ha Van
Nhan Vo Hoang Quoc
Phuong Tran Nhat

INTERNATIONAL SCHOOL

Project Information

Project acronym	DEMARK		
Project Title	Demark - Decentralized Market		
Start Date	February 24, 2019	**End Date**	May 12, 2019
Lead Institution	International School, Duy Tan University		
Project Mentor & contact details	Man Nguyen Duc Email: mannd@duytan.edu.vn Tel: 0904 235 945		
Product Owner	Ha Truong Van		
Scrum Master	Phuong Tran Nhat		
Team members	**Name**	**Email**	**Tel**
	Ha Truong Van	vanha30111997@gmail.com	0969356097
	Dat Ngo Ha Van	ngohavandat93ndc@gmail.com	01288446176
	Nhan Vo Hoang Quoc	quocnhan810@gmail.com	01674559527
	Phuong Tran Nhat	nhatphuongb1@gmail.com	01692502010

Proposal Document

Document Title	Proposal Document			
Reporting Period	February 24, 2019			
Team Information	**Name**	**Role**		
	Nhan Vo Hoang Quoc	Team member		
	Ha Truong Van	Product owner & team member		
	Dat Ngo Ha Van	Team member		
	Phuong Tran Nhat	Scrum master & Team member		
Date	September 10, 2018	**Filename**	DEMARK_PROPOSAL_4.0.docx	
Access	Project and Duy Tan University Program			

Document History

Document History		
Version	**Date**	**Comments**
V1.0	September 10, 2018	- Initialize document
V1.2	September 20, 2018	- Update plan
V2.0	October 17, 2018	- Update context diagram and descrip - Update project plan
V2.1	October 26, 2018	- Update diagram and feature
V3.0	November 3, 2018	- Official document (Capstone 1)
V4.0	February 16, 2019	- Update document (Capstone 2)

Document Approvals

The following signatures are required for approval of this document.

Man Nguyen Duc *Mentor*		Date:
Ha Truong Van *Product Owner*		Date:
Phuong Tran Nhat *Scrum Master*		Date:

TABLE OF CONTENTS

1. Introduction

1.1. Purpose

- The document provides an overview of the project includes the purpose and scope of the project.
- In addition, identify business needs, problems or situation related to the initialization and construction projects.
- Provide a solution for business needs and give the overview of system architecture.
- Provide an overview of resources, schedule, risk, solution, and budget for the project.

1.2. Scope

- This document provides an overview of the project will be developed. It includes the description of the business background, the proposed solution, financial forecast and some constraints that involved in the project.
- The document provides a comprehensive master plan for each phase of software development based on the processes that have been selected.
- This document is made for senior management to put forward a proposal.

1.3. References

No.	References	Document Information
1	Process	Scrum Framework https://www.scrumguides.org/
2	Technical	Nodejs http://nodejs.org/
		Reactjs https://reactjs.org/
		Web3js https://web3js.readthedocs.io/en/1.0/

		Solidity https://solidity.readthedocs.io/en/v0.4.24/

2. Project Outline

2.1. Project Overview

Demark is a digital asset exchange decentralized to Universities, which provides universities with the ability to collect tuition fees and other financial activities. In addition, it offers students, investors the ability to pay tuition fees electronically and the ability to communicate with other users.

2.2. User Need

2.2.1. Business Problems

In the explosive growth of Blockchain technology, which meets the need for information transparency, time-saving and fraud-protected smart solutions, and financial security. Many colleges and universities want to change the way financial management and financial-related activities, such as tuition or investment, reward students' activities and achievements, by applying Blockchain technology.

2.2.2. Business Need

- Students want to pay tuition or receive bonuses using electronic money. In addition, students want to exchange and send money to other students.

- University managers want to apply blockchain in financial activities that always face fraud in revenue and expenditure planning, to increase transparency in financial activities at the university.

2.2.3. Business Constraint

- The system should be completed and handed over by December 10, 2018.

- The system should allow the holder the ability to payment of tuition fees by ETH

- The system should bonus when the holder buys a lot token.

2.3. Prior Art

2.3.1. Situation in the world.

Top 4 tradding market

	Binance	Huobi	Bittrex	Poloniex
1	46 pairs of altcoin	200 pairs of altcoin	250 pairs of altcoin	101 pairs of altcoin
2	For beginner coin investors to join the crypptocurrency market	Investors trade often New players	Regular trading investors (Trader)	A long-term investor (Holder), trading in large amounts
3	https://www.binance.com	https://www.huobi.pro/	https://bittrex.com/	https://poloniex.com/
4	WTC/BTC NEO/BTC BTC/USDT BNB/BTC	EOS/USDT ETH/USDT BTC/USDT XRP/USDT	BTC/USDT NEO/BTC XRP/BTC ETH/BTC	BTC/ USDT ETH/BTC ETH/USDT STR/BTC
5	Exchange	Exchange – Margin – Lending	Exchange	Exchange – Margin – Lending

Legend

1	Number of transaction coins
2	User
3	Address
4	Top 4 pairs of coins
5	Method

● Since the inception of Bitcoin, it has been a market boom. It was the first application of Blockchain technology and was created to solve the transaction problems intelligently without the middleman like banks.

● The market for cryptocurrency is very young, since the opening of the first trading platform in 2010 and for the whole history of its development was

characterized by high volatility and lack of any stability. The market for cryptocurrency is one of the fastest growing markets to date.

2.3.2. Situation in Vietnam

In Vietnam, *vicuta.com*, *remitano.com*, and *bitcoinvn.com* are also trading platforms that focus on crypto.

3.   Proposed Solution

3.1. Vision Statement

Demark is a digital asset exchange decentralized for universities which bring to them the ability to use cryptocurrency in financial activities such as pay tuition fees, invest, exchange the token of the universities, etc. Unlike the old system of universities, students are only able to pay money through the services of a bank or directly at the cashier. The universities not only allow payment by traditional methods but also giving to users the ability to pay by cryptocurrency. Moreover; it also allows users to exchange digital assets with other users and attract investment from investors and businesses in a transparent manner, saving time and convenience for the users.
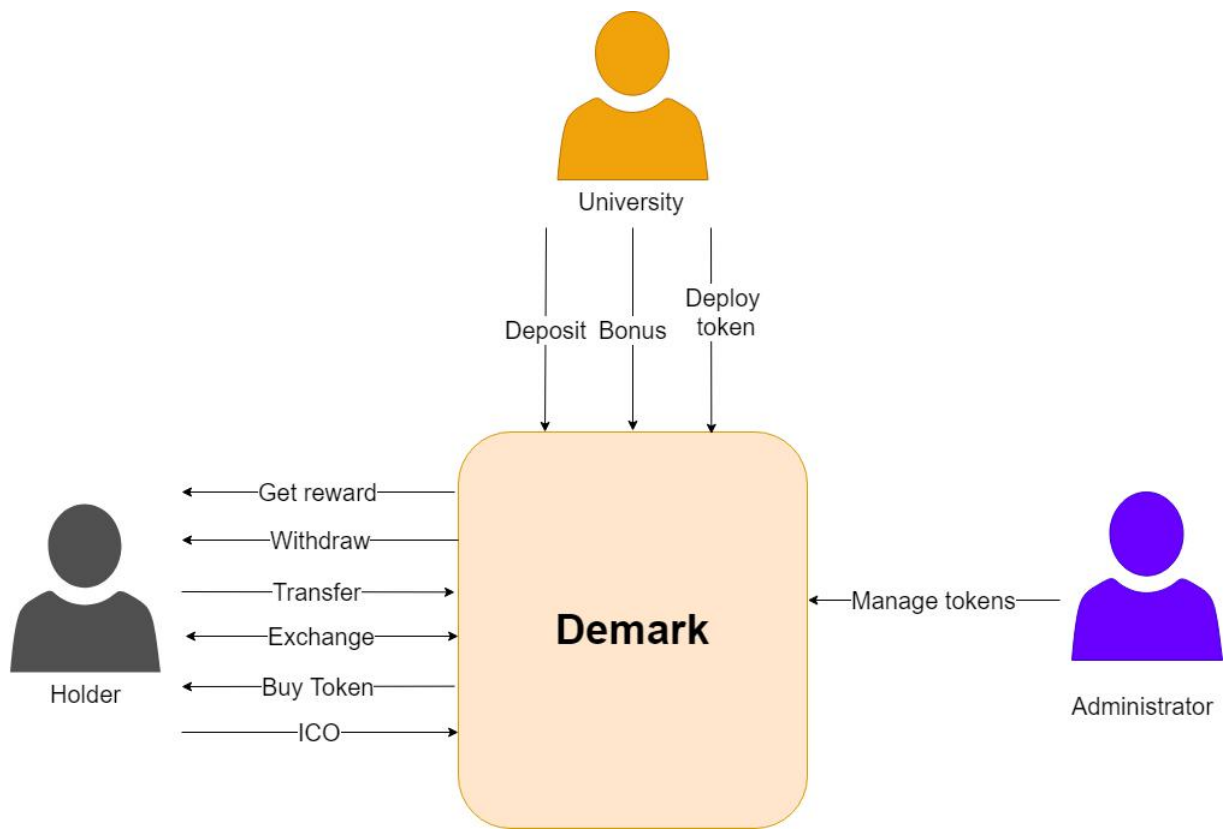
3.2. System context diagram

Figure 1: Demark System context diagram

3.3. System context description

There are three main actors in the system:

- Holder : the normal user of the system who has the basic functions of the system such as buy tokens, transfer tokens, withdraw, exchange token to the other users, get reward .

- University: A user who is responsible for the financial activities of the University such as deploy their tokens to the system, depositing and reward others. He has all the features of a holder.

- Administrator : A user who is responsible for manage the token of system. He has all features of holder and university.

3.4. Used Technology

Language Programming: *JavaScript, Solidity.*

Operating Environment: *Web browser (Google Chrome, Firefox, opera)*

Extension support: *MetaMask*

Frameworks / Libraries:

- *Reactjs*
- *NodeJS*
- *Truffle, Ganache*
- *Web3JS*
- *Bootstrap 4*
- *Webpack*
- *Express*

3.5. Deliverable

● Research documents about Blockchain, Ethereum, ERC.

● Website DEMARK which allows users to exchange and purchase tokens.

3.6. Compare with the previous version

What's new in this version?

- The changes in the main user on the system.

- The changes in functionality on the system.

- The changes in technology used.

		Capstone 1	Capstone 2
Role	Holder	- Get reward - Withdraw - Buy token - Transfer	- ICO - Exchange token
	University	- Deposit - Submit token	- Deploy token - Bonus token
	Administrator	- Manage token	- Manage ICO - Manage tokens

Language	- Reactjs - Ethereum	- Html, css, js, bootstrap - 0x project

4.   Project Plan

4.1. Scrum Framework
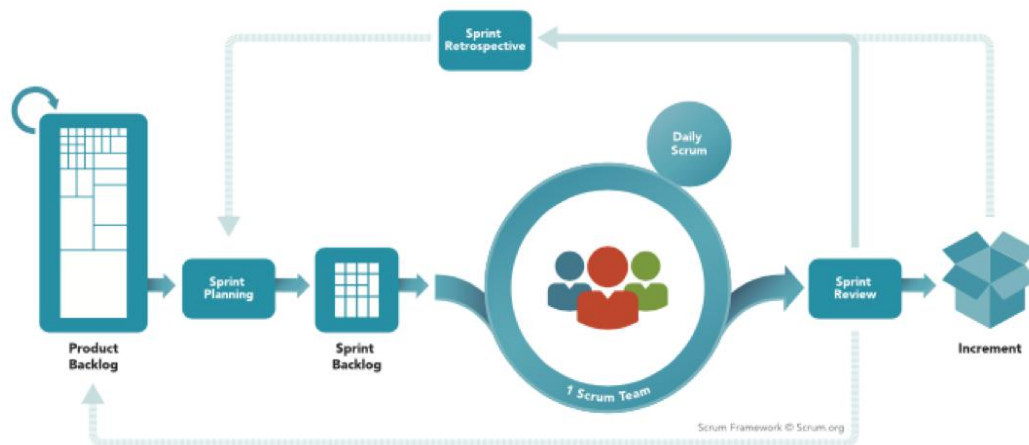
Scrum is an iterative and incremental agile software development framework for managing software projects and product or application development.

Scrum focuses on project management institutions where it is difficult to plan ahead.

Mechanisms of empirical process control, where feedback loops that constitute the core management technique are used as opposed to traditional command-and-control management.

Its approach to planning and managing projects is by bringing decision-making authority to the level of operation properties and certainties.

The benefit of the methodology:

● The project can respond easily to change.

● The customer gets the most beneficial work first.

● Work done will better meet the customer's needs.

Improved productivity. Ability to maintain a predictable schedule for delivery.

4.2. Human Resource

Full name	Phone	Email	Position
Nhan Vo Hoang Quoc	01674559527	quocnhan810@gmail.com	Team member
Ha Truong Van	0969356097	vanha30111997@gmail.com	Product owner, Team member
Dat Ngo Ha Van	01288446176	ngohavandat93ndc@gmail.com	team member
Phuong Tran Nhat	01692502010	nhatphuongb1@gmail.com	Scrum master, team member

4.3.   Master Plan

No	Task name	Duration	Start	Finish
1	Initial	7	February 24, 2019	March 3, 2019
1.1	Establish project team	1	February 24, 2019	February 24, 2019
1.2	Project's Kick-off Meeting	1	February 25, 2019	February 25, 2019
1.3	Discuss about project idea	2	February 26, 2019	February 27, 2019
1.4	Update the documents	5	February 28,	March 3,

	for project		2019	2019
1.5	Research Technical	8	February 28, 2019	March 3, 2019
2	Development	70		
2.1	*Sprint 1*	14	March 4, 2019	March 17, 2019
2.2	*Sprint 2*	14	March 18, 2019	March 31, 2019
2.3	*Sprint 3*	14	April 1, 2019	April 14, 2019
2.4	*Sprint 4*	14	April 15, 2019	April 28, 2019
2.5	*Sprint 5*	14	April 29, 2019	May 12, 2019
3	Final Release	3	May 13, 2019	May 15, 2019
	Duration	80		