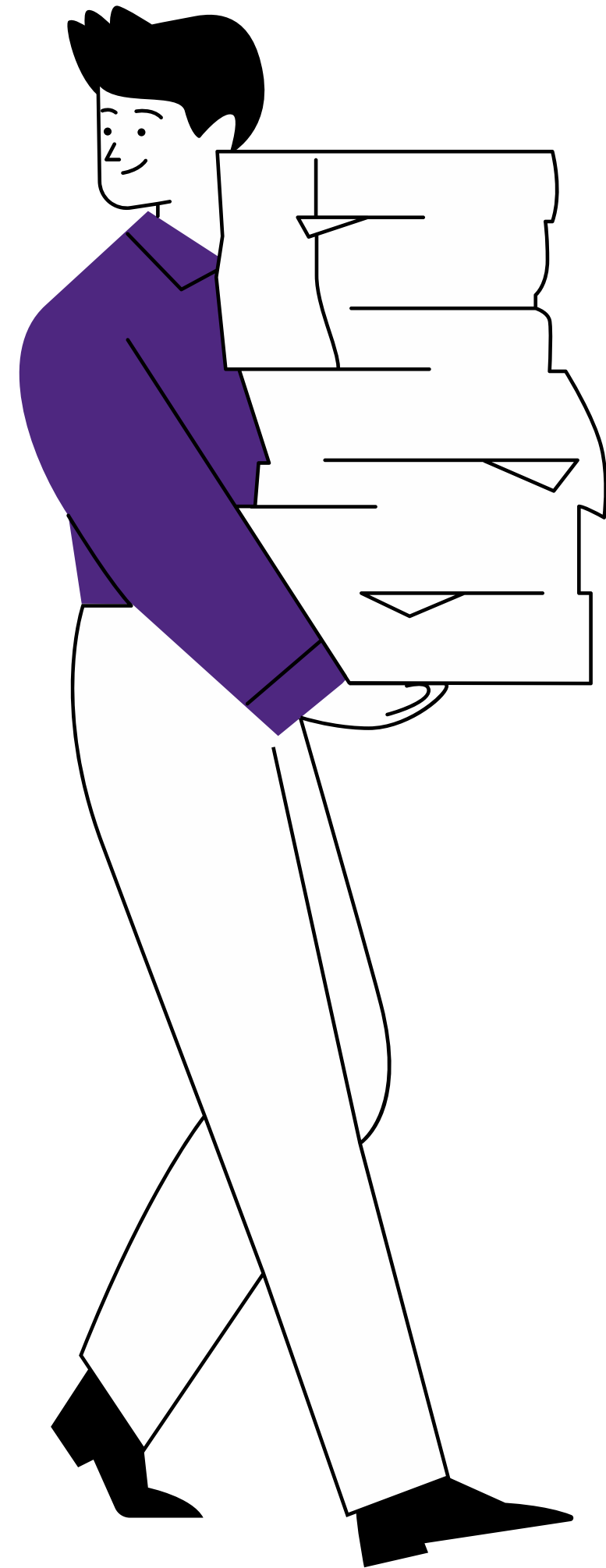







Blockchain-Based Vehicle Registration and Ownership Management System

IN 2900(IT)- Troyrangers
Faculty of Information Technology
University Of Moratuwa
2022



204047J	Dissanayake D.M.B.M		
204074M	Herath P.A.U.D		
204087F	Jayathilaka P.H.P		
204150T	Pathirana S.P.S.N		
204179N	Rathnayaka A.M.D.B		



Team Members



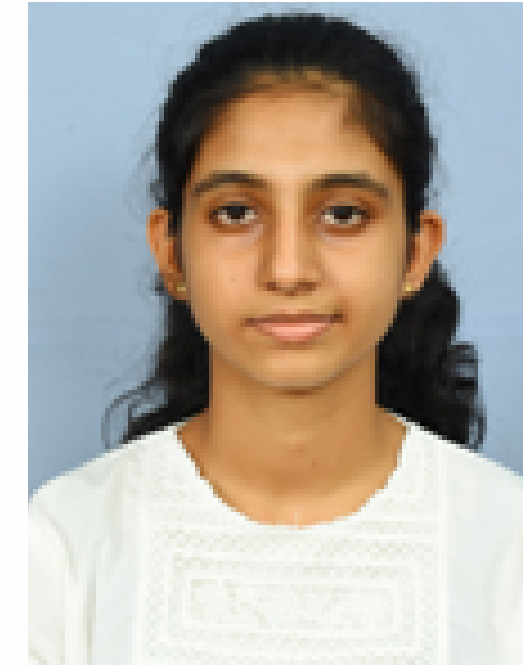
Dissanayake DMBM
204047J



Herath PAUD
204074M



Jayathilaka PHP
204087F



Pathirana SPSN
204150TJ



Rathnayaka AMDB
204179N

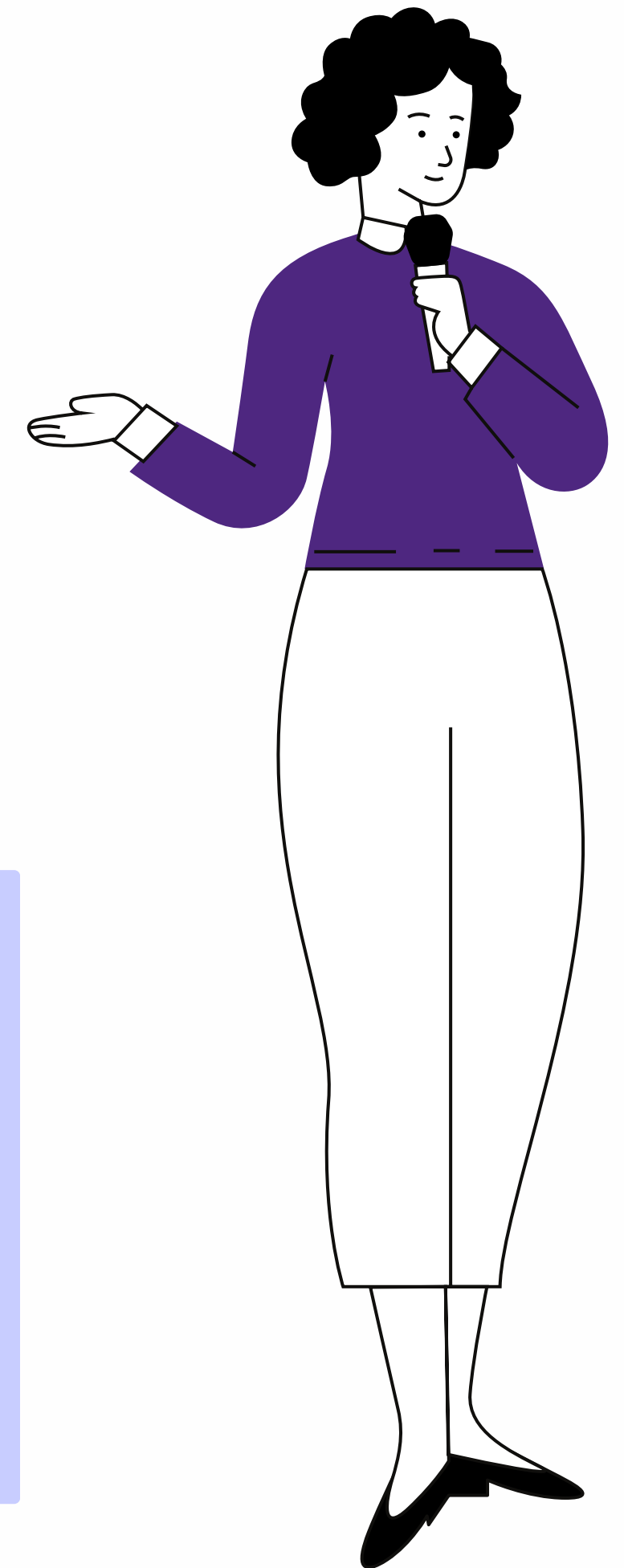
Table of Content

Supervisor

Dr. A.L.A.R.R. Thanuja
Department of Computational
Mathematics
University of Moratuwa

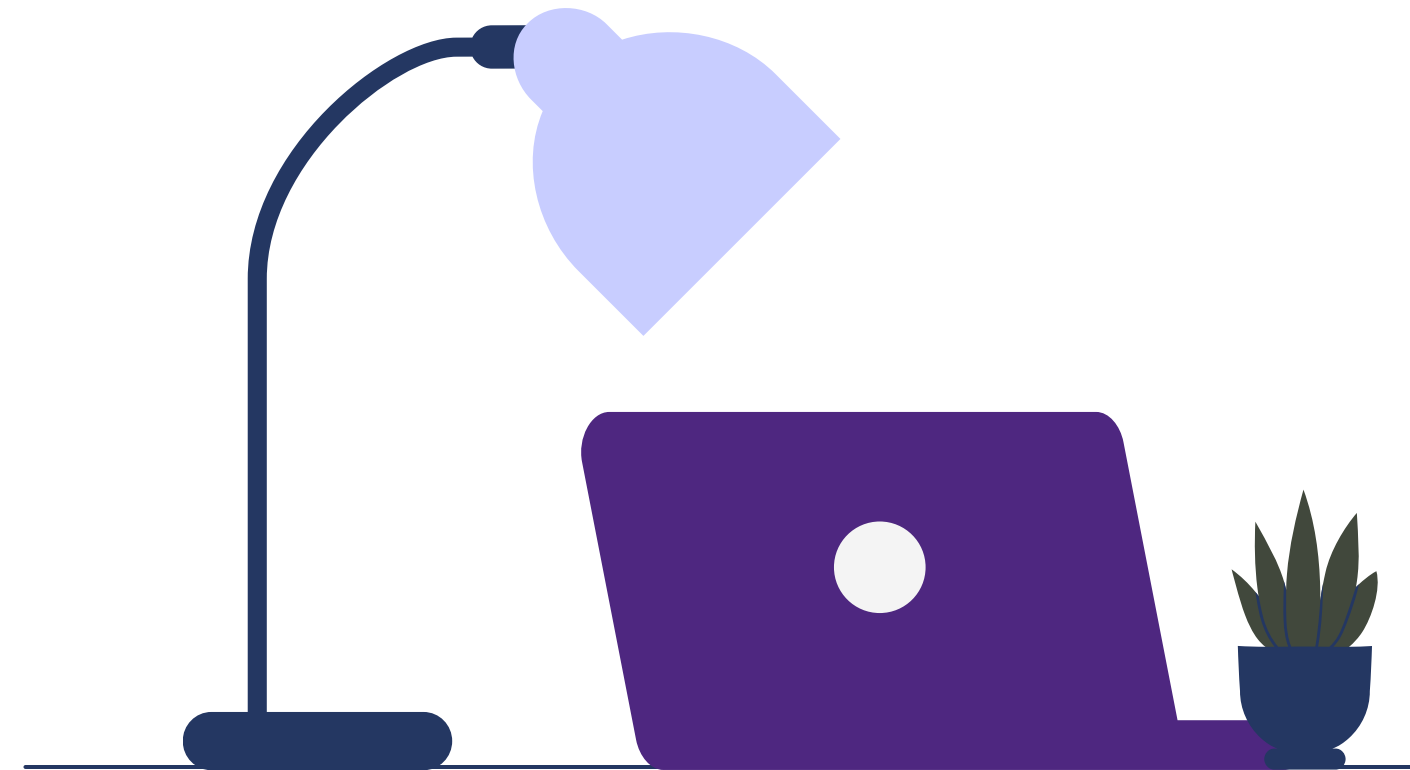
Mentor

Mr. H.M.A. Bandara
B.Sc. in Eng (Electrical and
Electronic)
M.Sc. in Computer Science
Consultant – Crede Technologies



Problem in brief

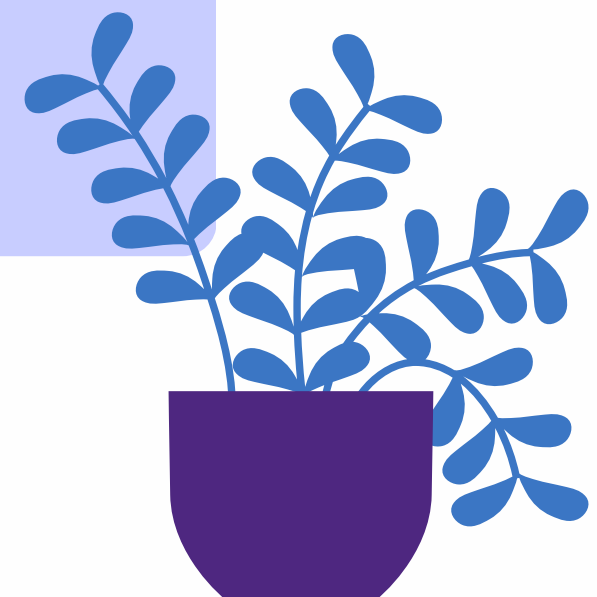
Security issue in vehicle ownership registration



Background & Motivation

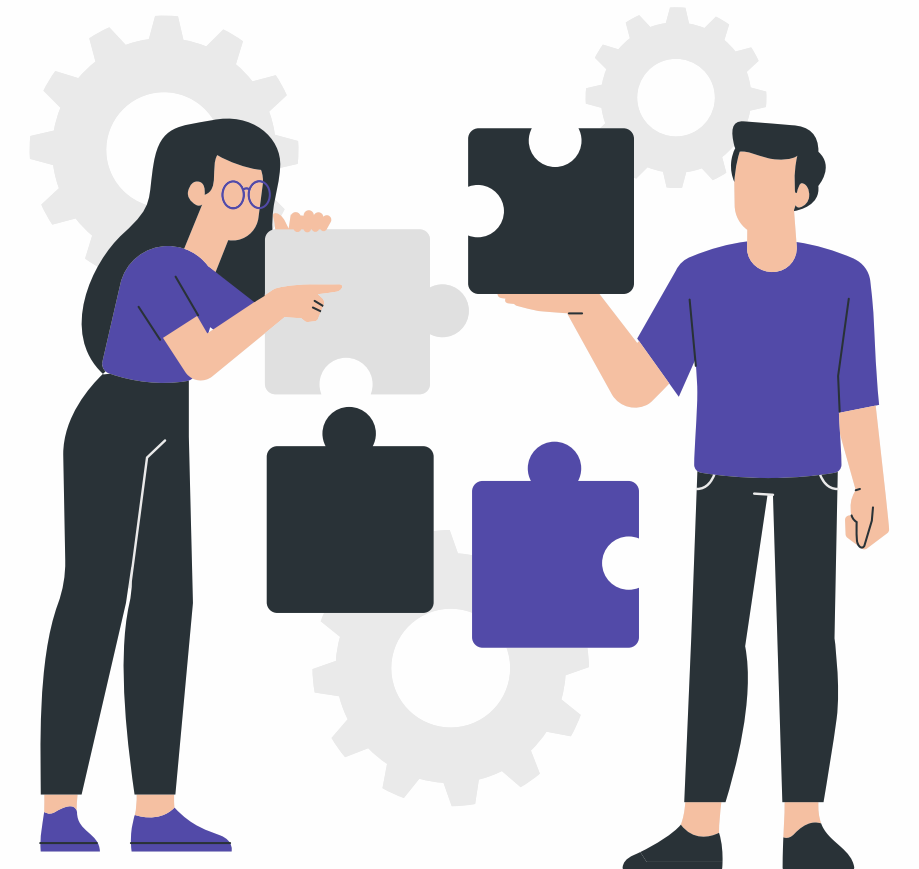
This project is on digitizing real-world objects, specifically vehicles, for the purpose of changing their ownership online.

This has not been done before and requires the development of a new system.

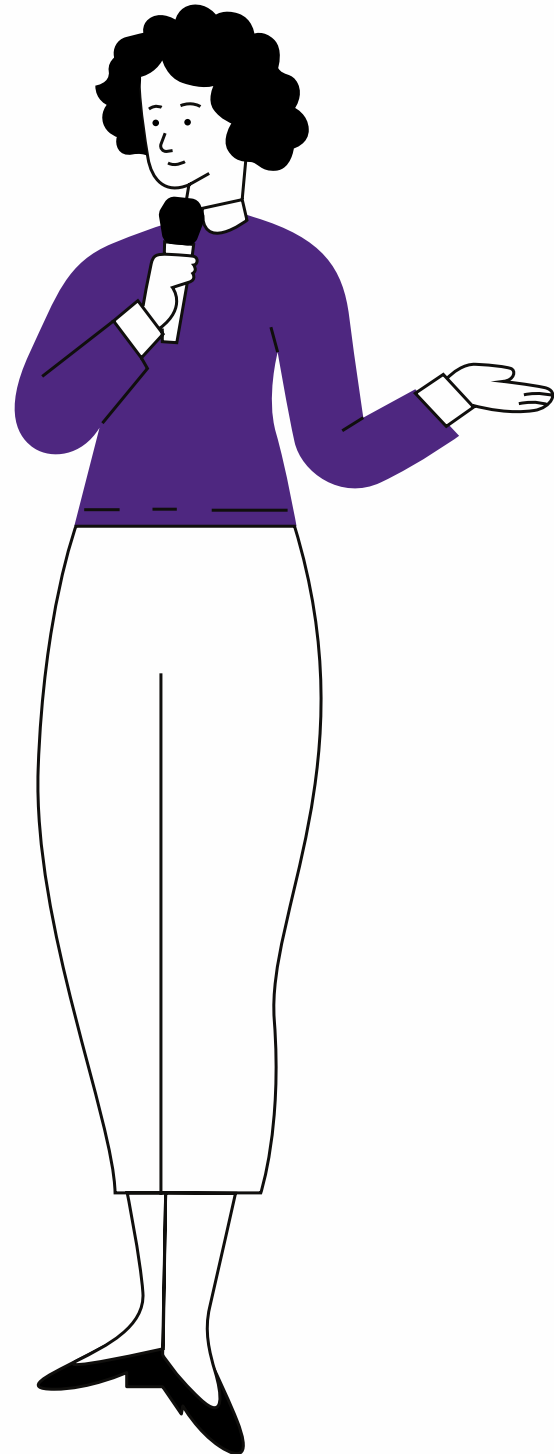


Aim

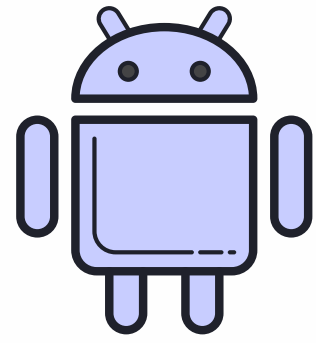
Develop a system for registering and transferring vehicle ownership from one person to another in a secure manner with the use of Blockchain Technology.



Objectives



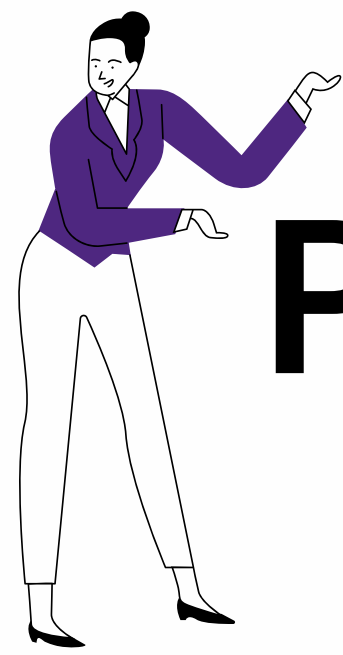
- Study the problem of the registering and the transferring vehicle ownership from one person to another through document based approach.
- Facilitate digitizing the system of registering and transferring vehicle ownership from one person to another.
- Create the ability to generate a digital id for verifying person and vehicle identity.
- Design the appropriate system including all user requirements.
- Develop the system for solving the problem.



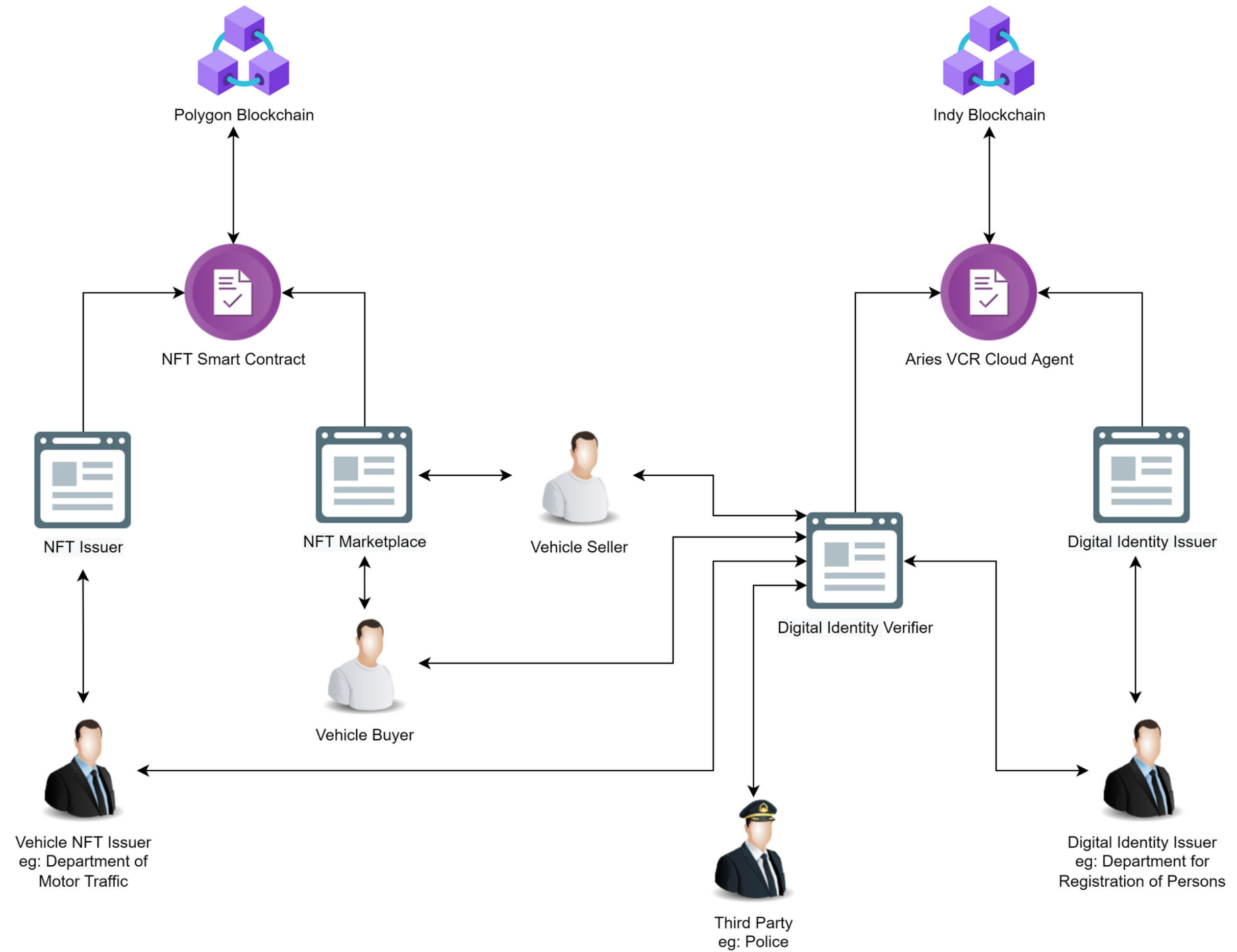
Existing software

- Vehicle Registration and Information Management using Blockchain-based Distributed Ledger from Bangladesh Perspective
- Sandbox
- OpenSea



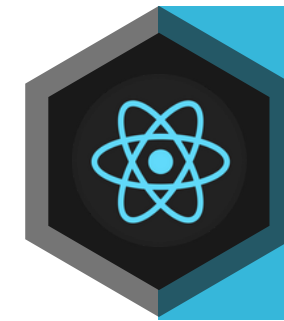
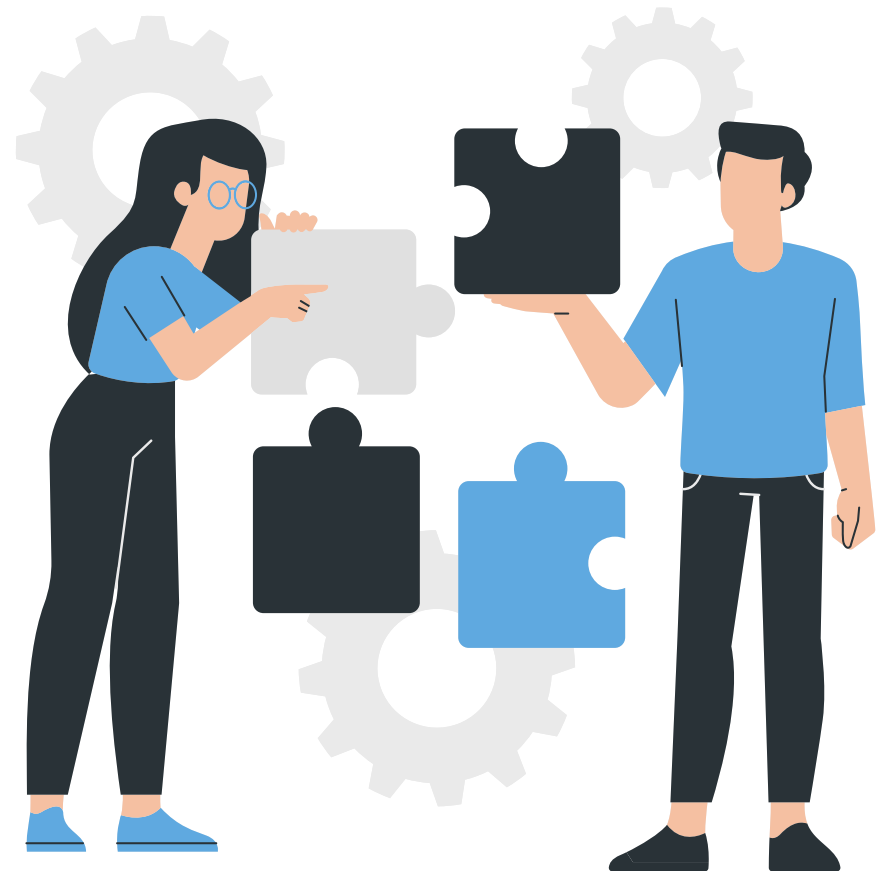


Proposed Solution

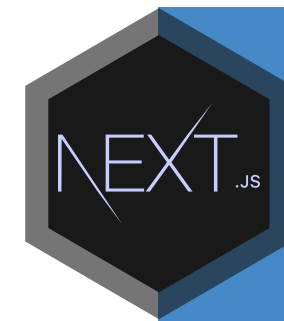


Blockchain based Vehicle Registration and Ownership Management System

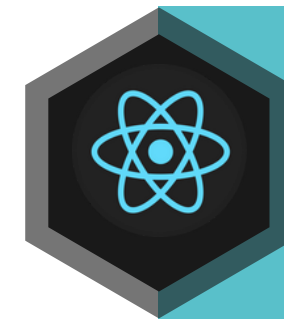
Web 2 Technologies



ReactJs



NextJs

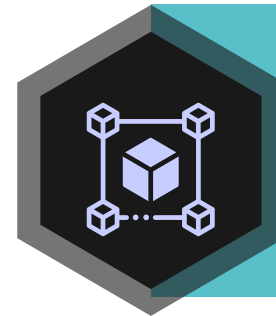
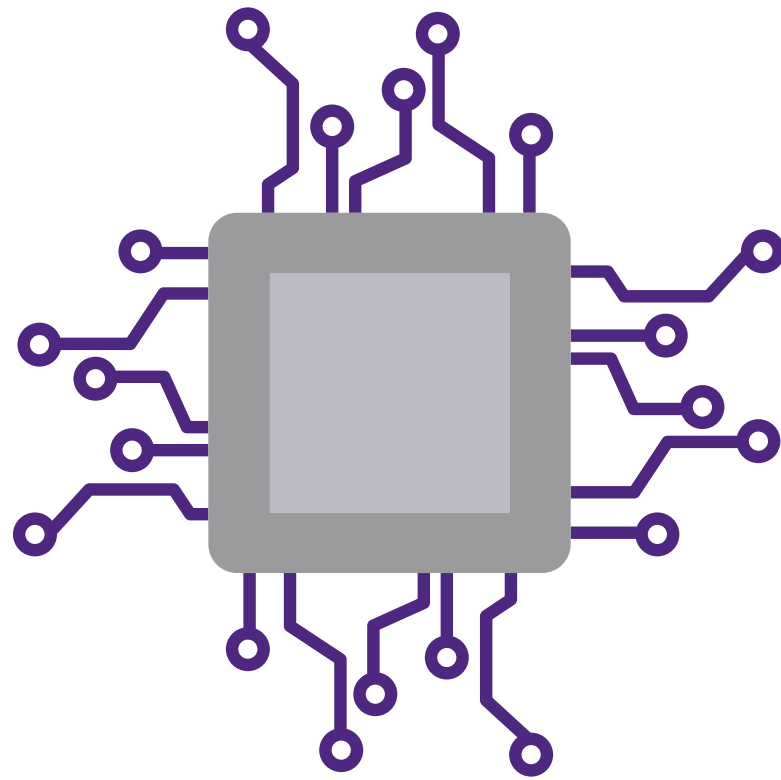


React Native



Django

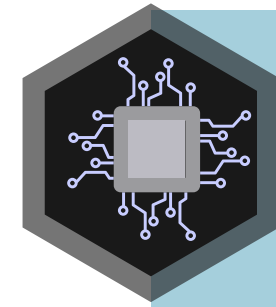
Web 3 Technologies



Blockchain

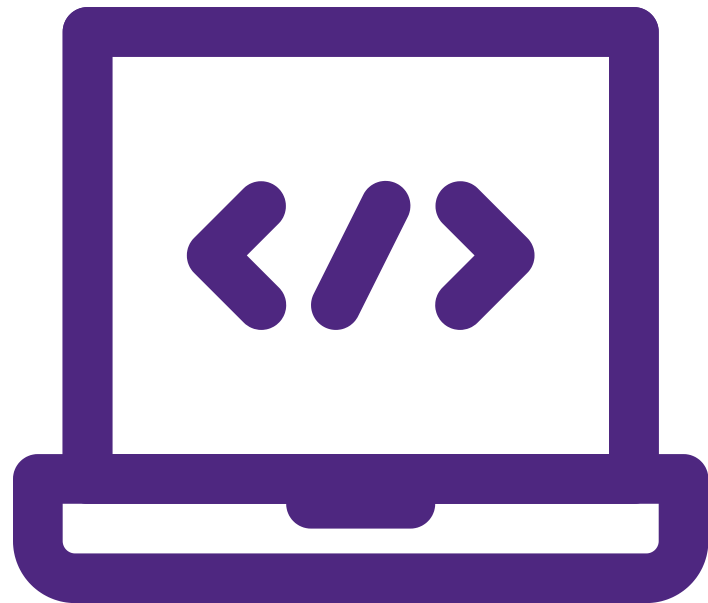


Aries Cloud Agent Python



MetaMask Wallet

DevOps Technologies



Docker



Docker Compose

Our Approach

In our approach we discussed,

- Users
- Inputs and Outputs
- Process to achieve our goal
- Software process model that we used



Software Process Model

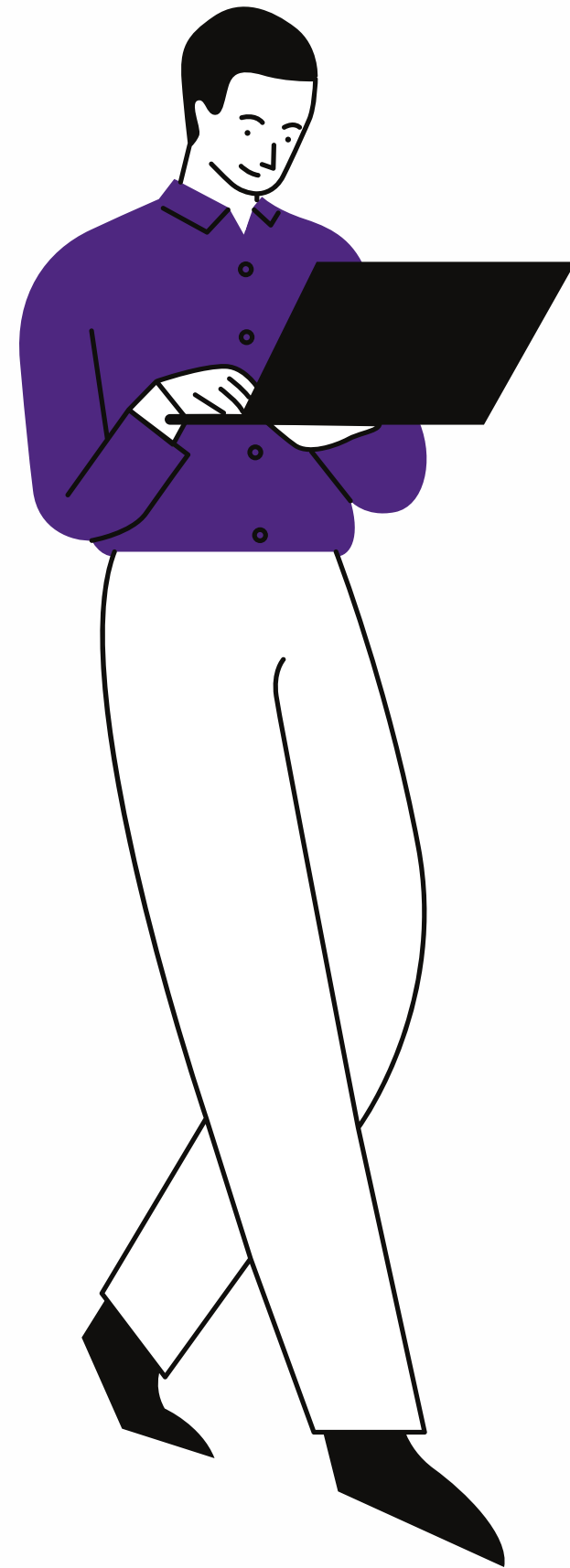
Reasons

Waterfall Model

- All requirements are clear.
- Tight deadline
- hard to communicate with customers always



Project Management Plan



Jira

Jira Software | Your work | **Projects** | Filters | Dashboards | People | Apps | [Create](#) | Search | ? | ⚙️ | BD

Projects / Vehicle Ownership Management System

VOMS board

| BD HJ S UD DR | Epic | Type | GROUP BY: None | [Insights](#)

TO DO

+ Create issue

IN PROGRESS 5 ISSUES

Try to use Authentication using Hyperledger FireFly

SSI-ISSUER

VOMS-7

HJ

Learn React/ Next JS

NFT-MINTER

VOMS-10

BD

Learn Django 3

SSI-VERIFYER

VOMS-9

S

Learn Django 3

READY TO TEST

TESTING IN PROGRESS

DONE 2 ISSUES

Find similar wallet

SSI-WALL

VOMS-11

Set up R for windows

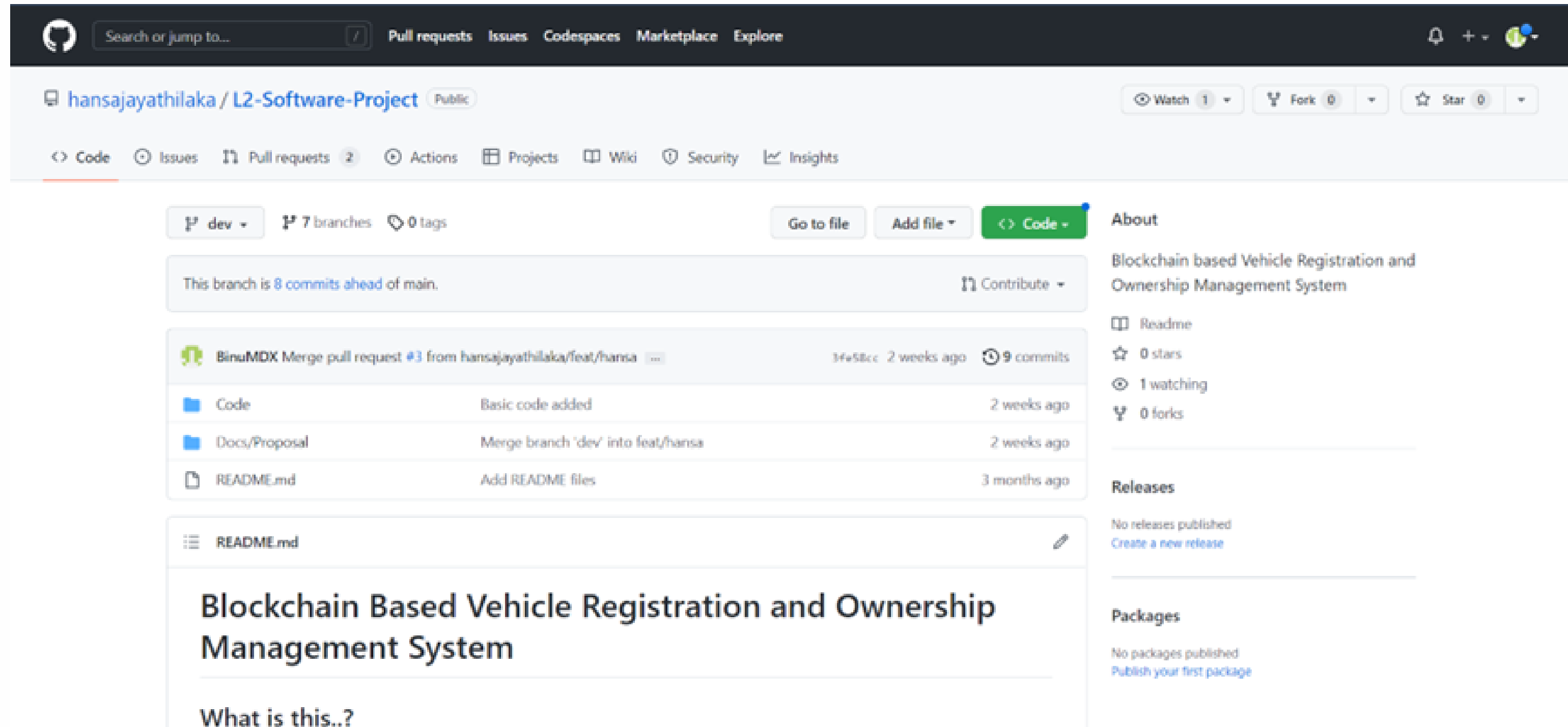
SSI-WALL

VOMS-12

You're in a team-managed project. [Learn more](#)

[Quickstart](#) | X

Version Controlling System



The screenshot shows a GitHub repository page for 'hansajayathilaka / L2-Software-Project'. The repository is public and has 1 watch, 0 forks, and 0 stars. The main branch is 'dev', which is 8 commits ahead of 'main'. There are 7 branches and 0 tags. The repository contains a pull request from 'hansajayathilaka/feat/hansa' with 9 commits. The files listed are 'Code' (Basic code added, 2 weeks ago), 'Docs/Proposal' (Merge branch 'dev' into feat/hansa, 2 weeks ago), and 'README.md' (Add README files, 3 months ago). The README.md file is selected, showing the title 'Blockchain Based Vehicle Registration and Ownership Management System' and the text 'What is this..?'. The right sidebar shows the 'About' section with the description 'Blockchain based Vehicle Registration and Ownership Management System', 'Readme', '0 stars', '1 watching', and '0 forks'. The 'Releases' section shows 'No releases published' and a link to 'Create a new release'. The 'Packages' section shows 'No packages published' and a link to 'Publish your first package'.

hansajayathilaka / L2-Software-Project Public

Watch 1 Fork 0 Star 0

Code Issues Pull requests 2 Actions Projects Wiki Security Insights

dev 7 branches 0 tags

This branch is 8 commits ahead of main. Contribute

BinuMDX Merge pull request #3 from hansajayathilaka/feat/hansa 34e58cc 2 weeks ago 9 commits

Code	Basic code added	2 weeks ago
Docs/Proposal	Merge branch 'dev' into feat/hansa	2 weeks ago
README.md	Add README files	3 months ago

README.md

Blockchain Based Vehicle Registration and Ownership Management System

What is this..?

About

Blockchain based Vehicle Registration and Ownership Management System

Readme

0 stars

1 watching

0 forks

Releases

No releases published
Create a new release

Packages

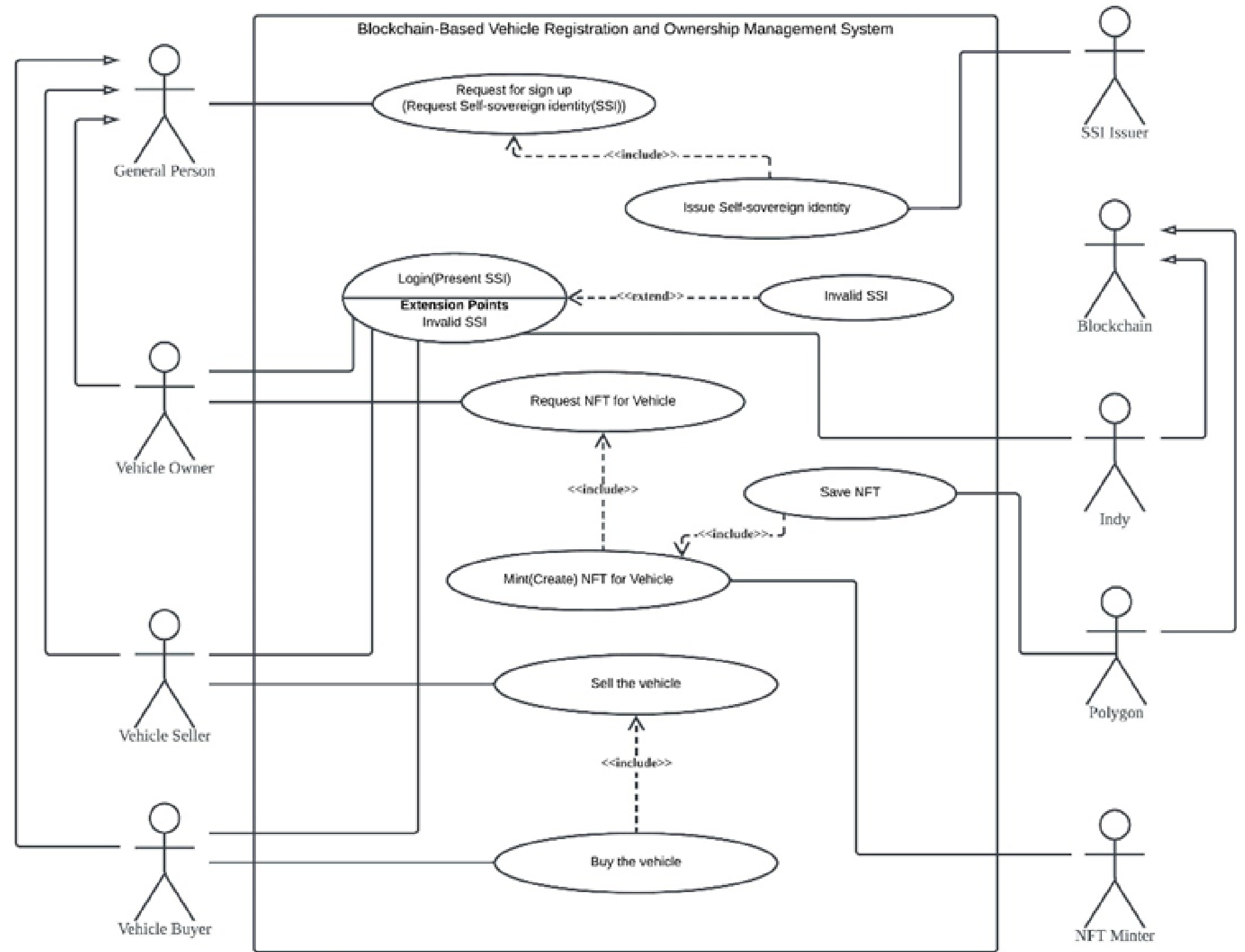
No packages published
Publish your first package



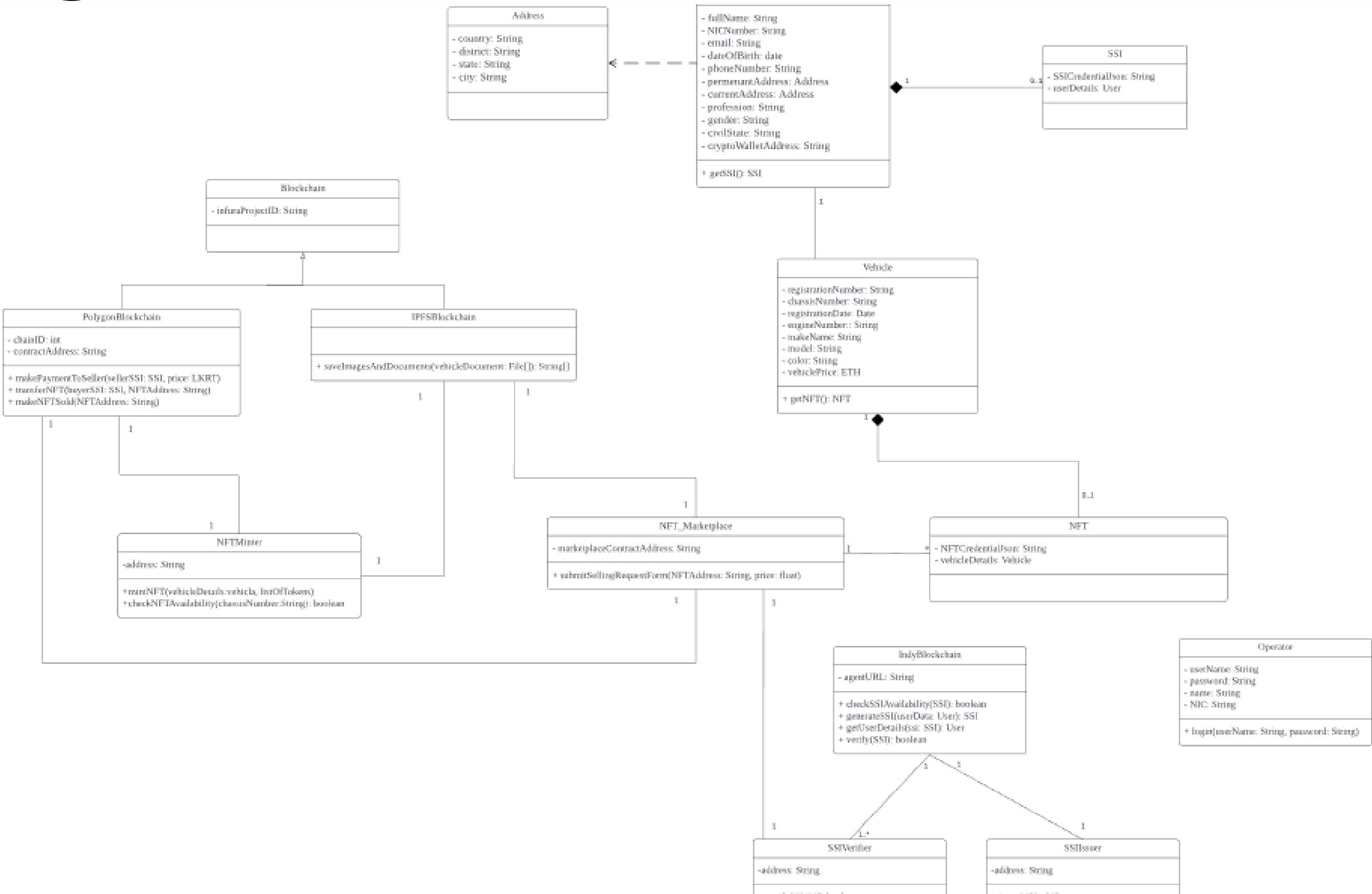
List of Diagrams

- 1 Use Case Diagram
- 2 Class Diagram
- 3 Activity Diagram
- 4 Sequence Diagram
- 5 ER Diagram

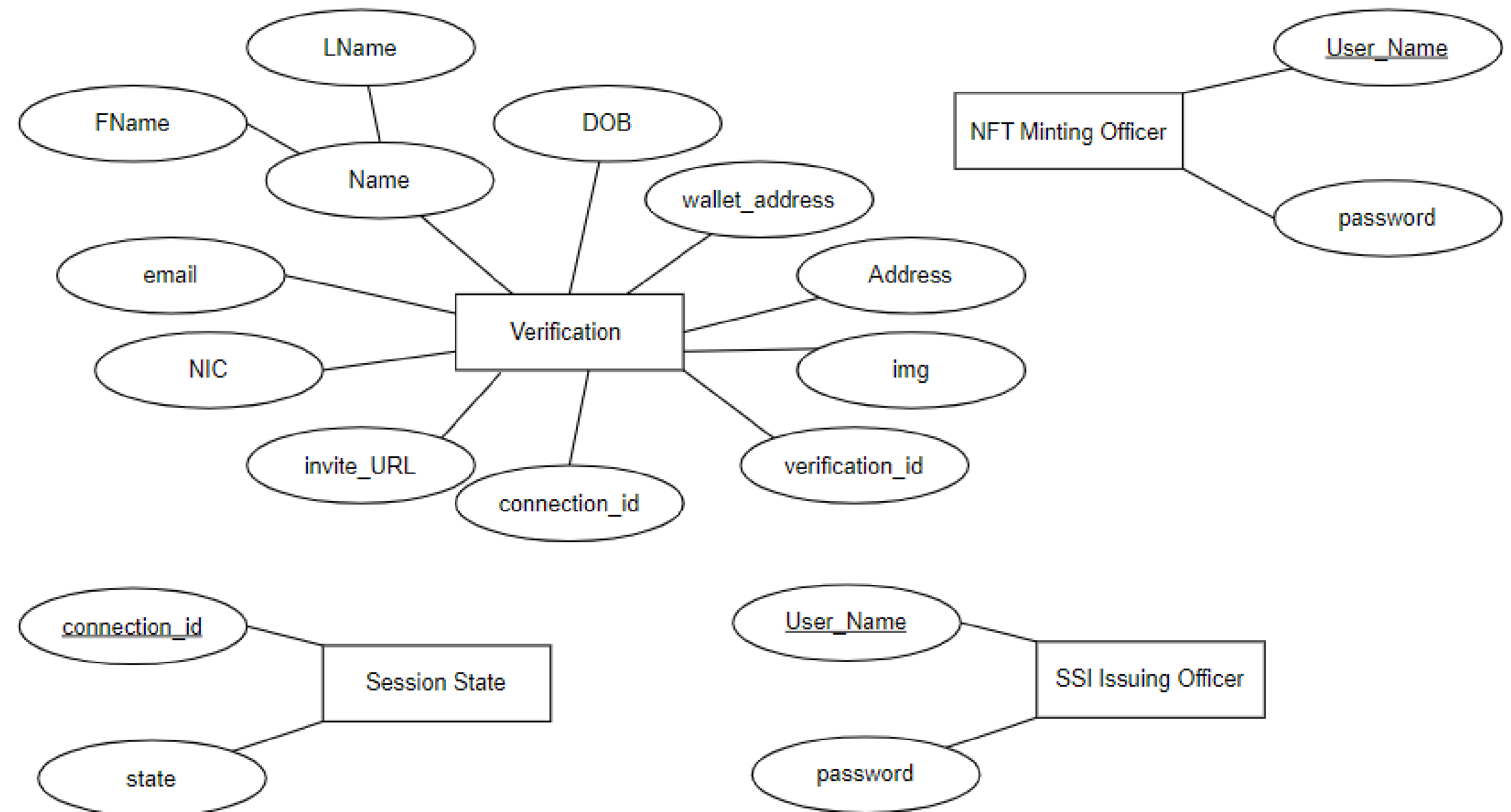
Use Case Diagram



Class Diagram



ER Diagram



Activity & Sequence Diagrams

Click The Link

Further Work

- Introduce a new cryptocurrency to do transactions in the marketplace when selling and buying vehicles.
- Add a verification with the database maintained by the government with vehicle details parallel to the manual verification process.





Individual Contribution



204047J – Dissanayake D.M.B.M

- I was involved in drawing Use Case, ER, Class Diagram
- Created Sequence and Activity Diagram for NFT Minter module
- Responsible for preparing NFT Minter module

204074M – Herath P.A.U.D

- I was involved in drawing Use Case, ER, Class Diagram
- Created Sequence and Activity Diagram for Mobile SSI Wallet module
- Responsible for preparing Mobile SSI Wallet module

204087F – Jayathilaka P.H.P

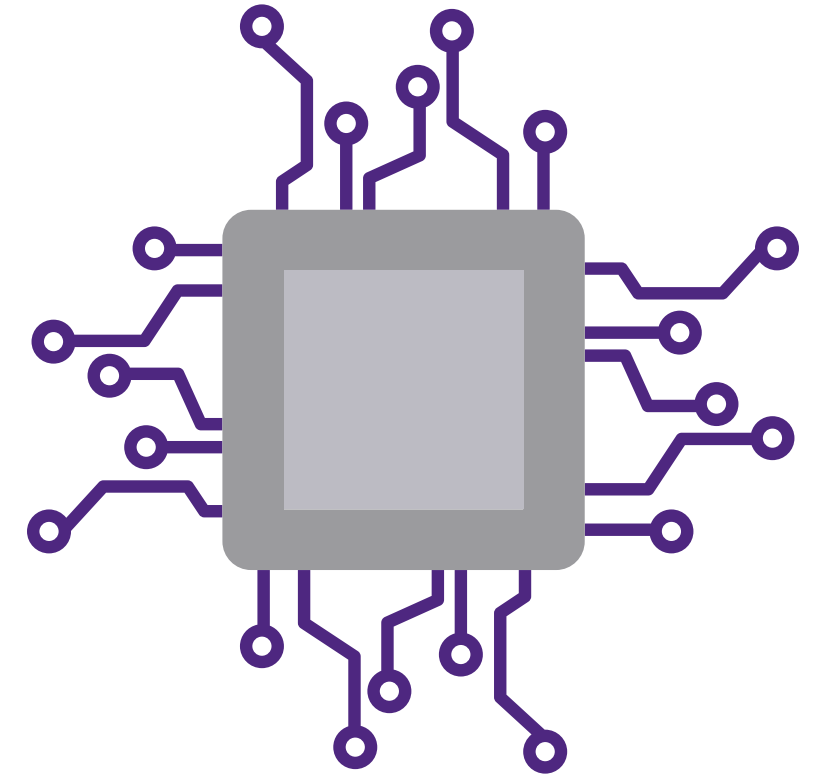
- I was involved in drawing Use Case, ER, Class Diagram
- Created Sequence and Activity Diagram for NFT Marketplace module
- Responsible for preparing NFT Marketplace module

204150T – Pathirana S.P.S.N

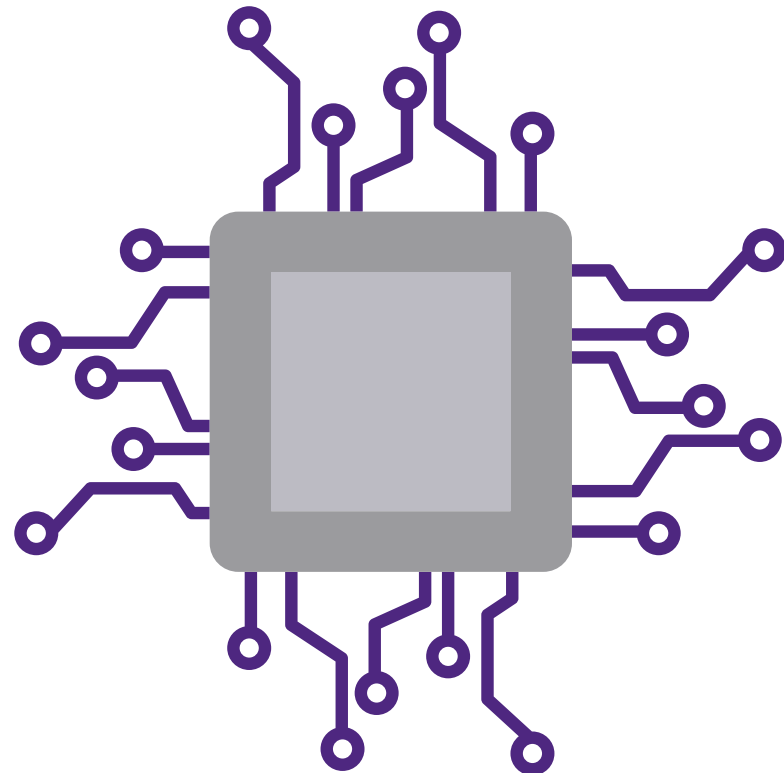
- I was involved in drawing Use Case, ER, Class Diagram
- Created Sequence and Activity Diagram for SSI Verifier module
- Responsible for preparing SSI Verifier module

204179N – Rathnayaka A.M.D.B

- I was involved in drawing Use Case, ER, Class Diagram
- Created Sequence and Activity Diagram for SSI Issuer module
- Responsible for preparing SSI Issuer module



Thank you...



Q & A ?