Vision

AGENDA

1)Introduction

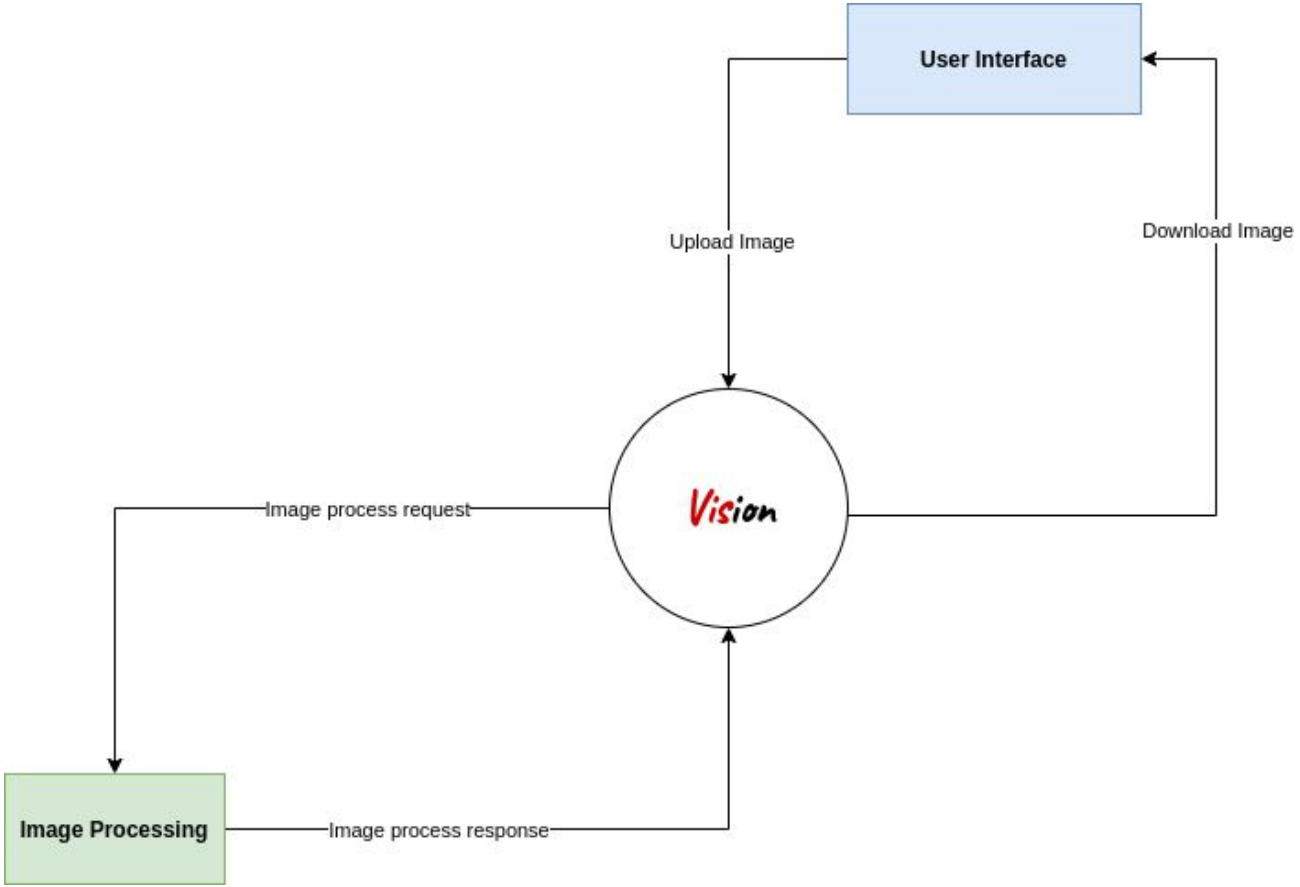
2)Diagrams

3)Projections

4)Real Life Example

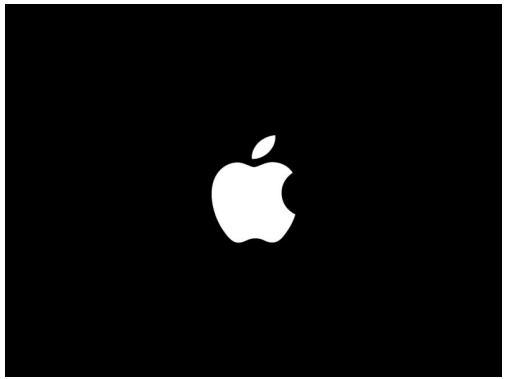
Introduction

- Problem Statement
- Literature Review


User Interface
Upload Image
Download Image
Vision
Image process request
Image Processing
Image process response

Literature Review

Google



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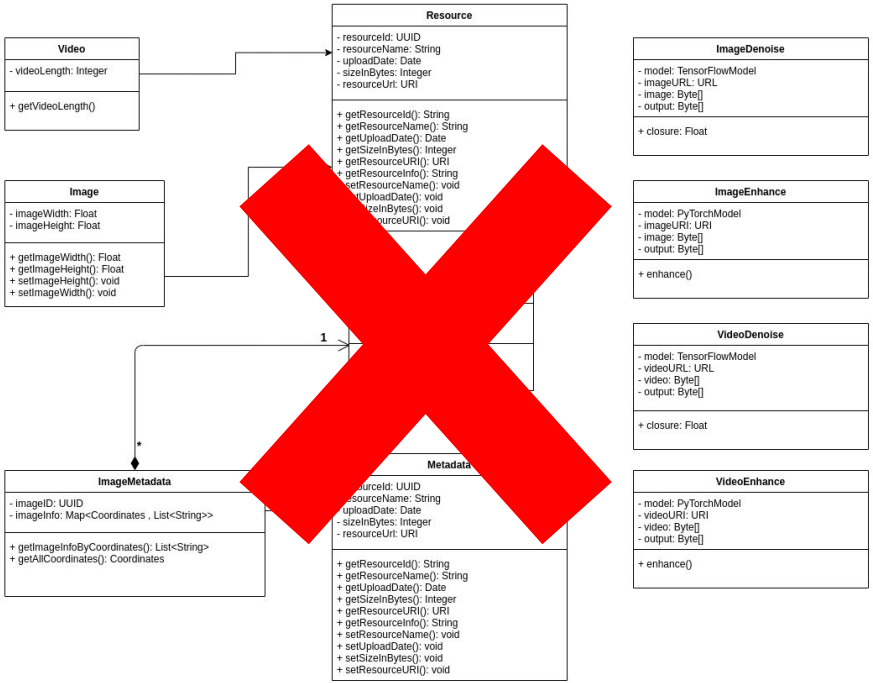
Diagrams

- Class
- Use Case
- Activity
- Sequence
- State Machine

CLASS DIAGRAM

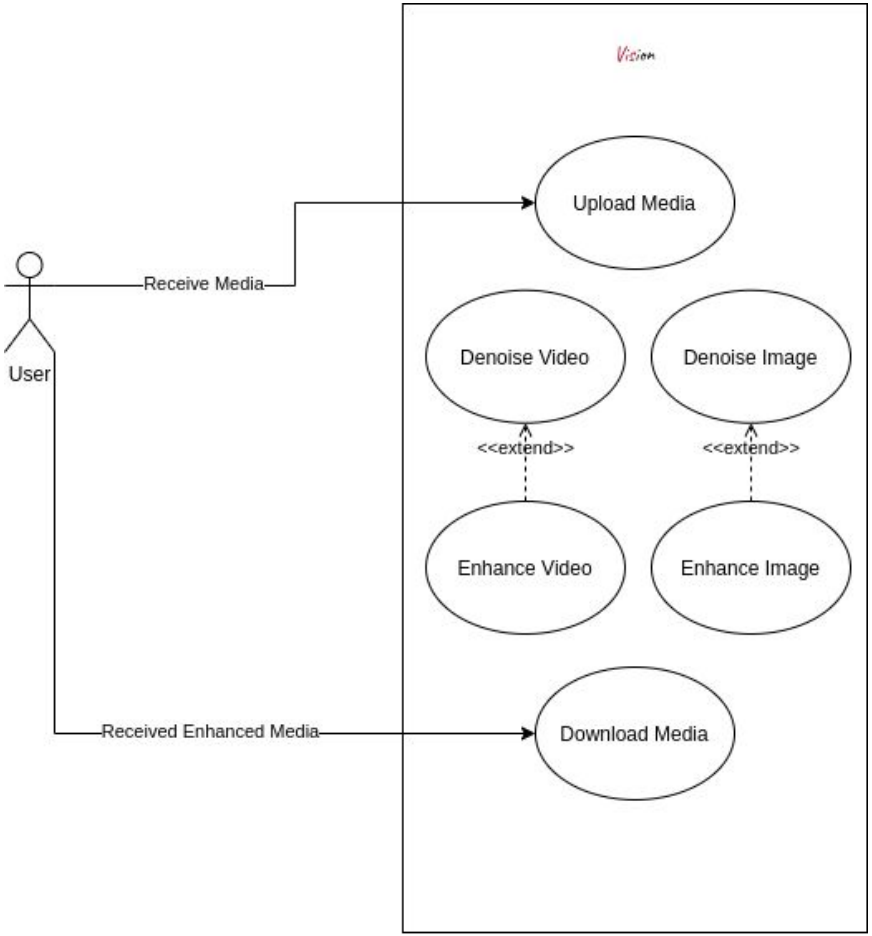


CLASS DIAGRAM

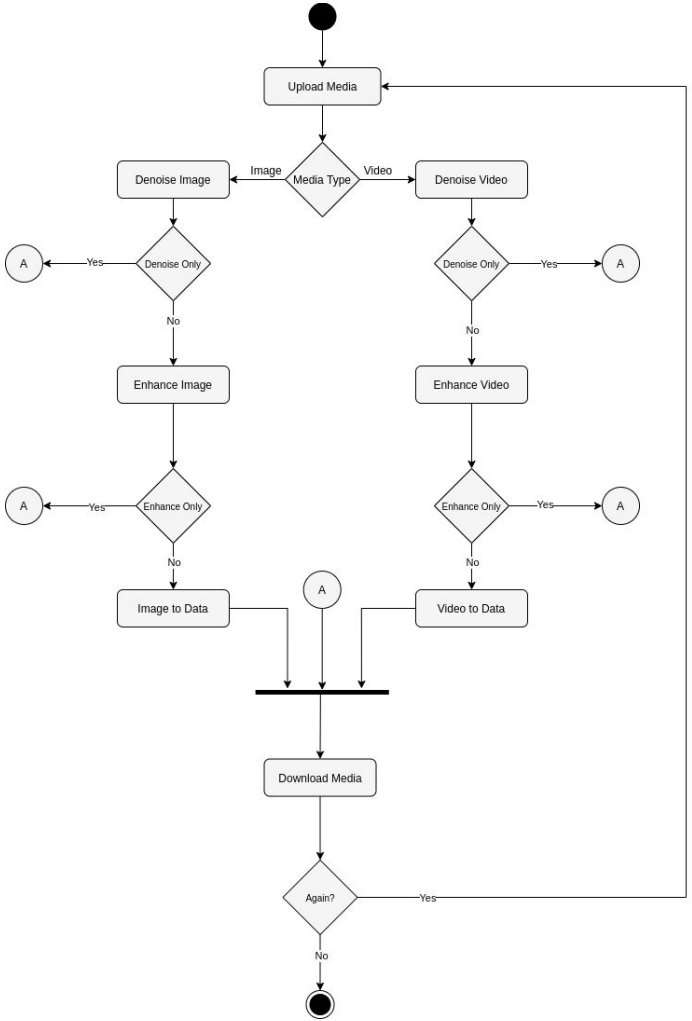
ONE SCRIPT TO RULE THEM ALL

```python
from argparse import ArgumentParser
from tensorflow import keras
import numpy as np
import cv2
import os

parser = ArgumentParser()
parser.add_argument('--image_dir', type=str, help='Directory where images are kept.')
parser.add_argument('--output_dir', type=str, help='Directory where to output high res images.')


def main():
    args = parser.parse_args()

    # Get all image paths
    image_paths = [os.path.join(args.image_dir, x) for x in os.listdir(args.image_dir)]

    # Change model input shape to accept all size inputs
    model = keras.models.load_model('models/generator.h5')
    inputs = keras.Input((None, None, 3))
    output = model(inputs)
    model = keras.models.Model(inputs, output)

    # Loop over all images
    for image_path in image_paths:

        # Read image
        low_res = cv2.imread(image_path, 1)

        # Convert to RGB (opencv uses BGR as default)
        low_res = cv2.cvtColor(low_res, cv2.COLOR_BGR2RGB)

        # Rescale to 0-1.
        low_res = low_res / 255.0

        # Get super resolution image
        sr = model.predict(np.expand_dims(low_res, axis=0))[0]

        # Rescale values in range 0-255
        sr = (((sr + 1) / 2.) * 255).astype(np.uint8)

        # Convert back to BGR for opencv
        sr = cv2.cvtColor(sr, cv2.COLOR_RGB2BGR)

        # Save the results:
        cv2.imwrite(os.path.join(args.output_dir, os.path.basename(image_path)), sr)


if __name__ == '__main__':
    main()
```

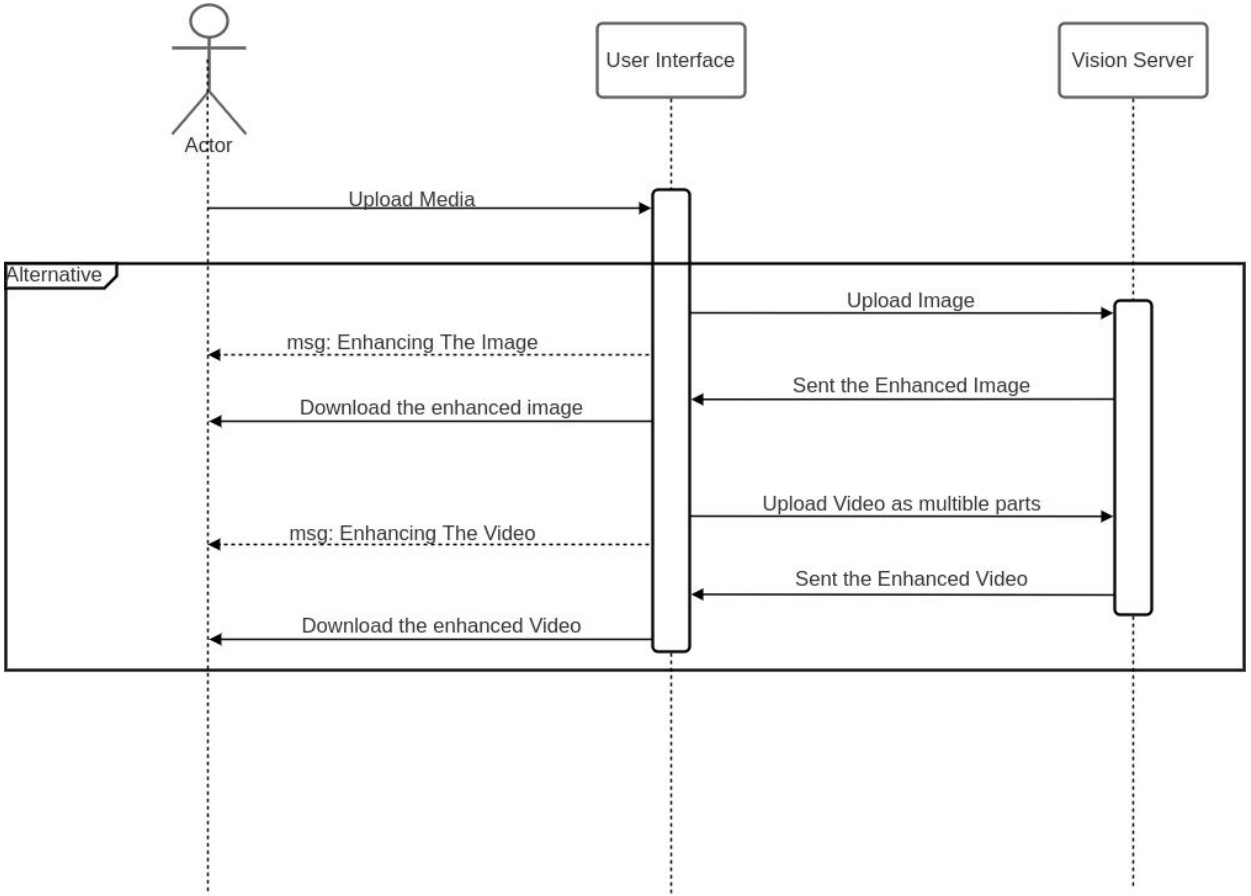
USE CASE DIAGRAM



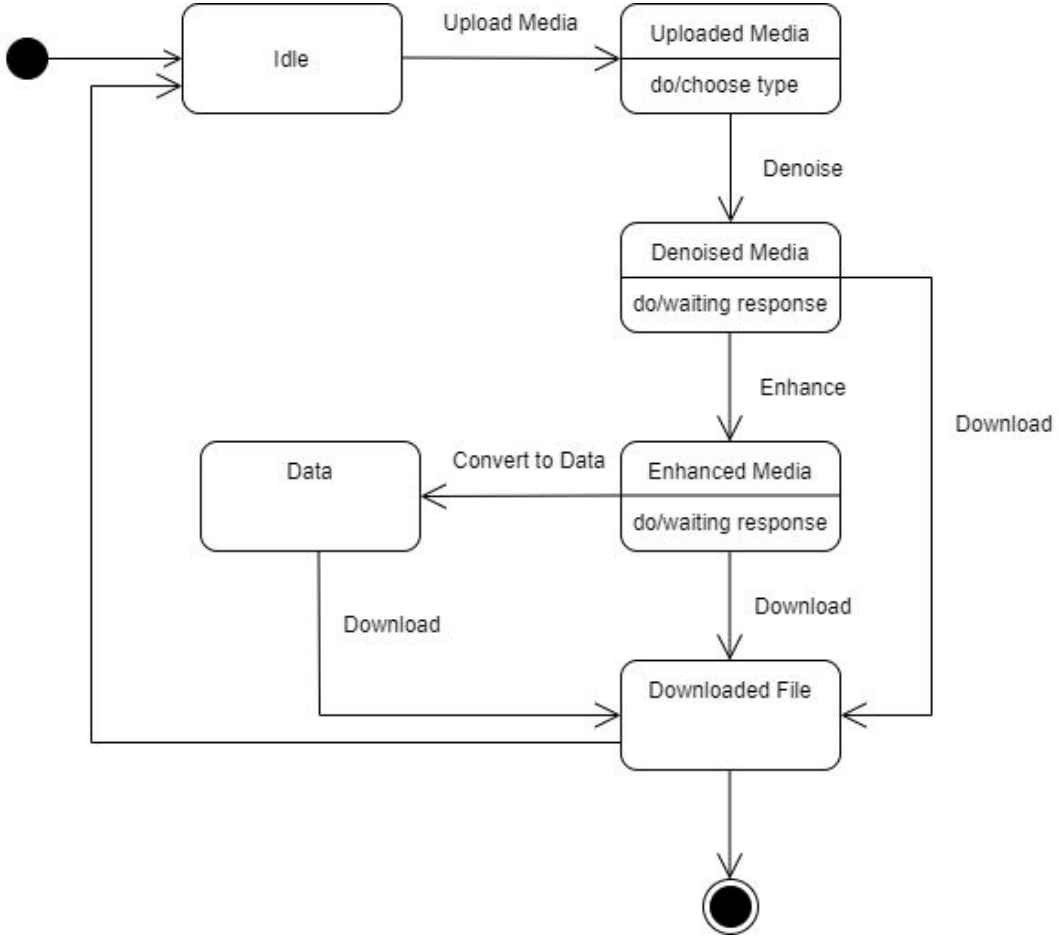
ACTIVITY DIAGRAM



SEQUENCE DIAGRAM



STATE MACHINE DIAGRAM



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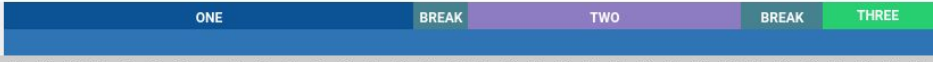
Projections

- Gantt Chart
- Network Diagram

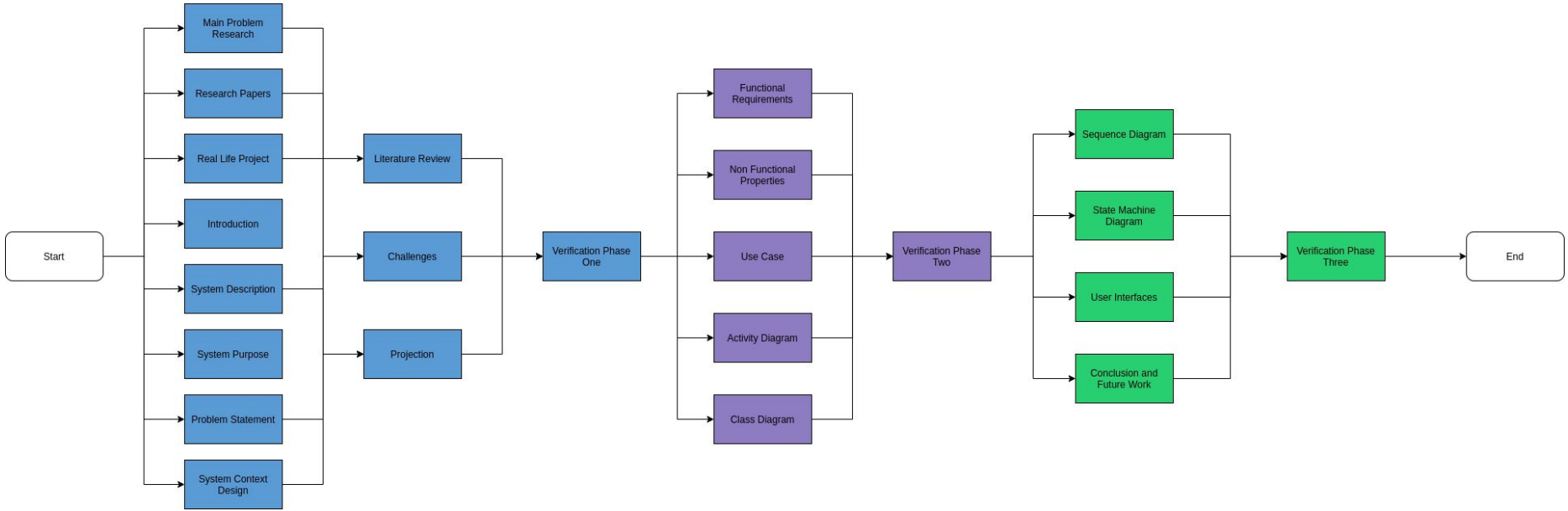
This was wrong in the final documentation submission

Vision Gantt Chart

WBS NUMBER	TASK TITLE	START DATE	DUE DATE	DURATION
1	**Project Research**			
1.1.0	Main Problem	25-Feb-2021	28-Feb-2021	4
1.1.1	Research Papers	27-Feb-2021	02-Mar-2021	4
1.1.2	Real life projects	28-Feb-2021	04-Mar-2021	5
1.2.0	Introduction	02-Mar-2021	03-Mar-2021	2
1.2.1	System Description	02-Mar-2021	03-Mar-2021	2
1.2.2	System Purpose	03-Mar-2021	04-Mar-2021	2
1.2.3	Problem Statement	03-Mar-2021	04-Mar-2021	2
1.2.4	The System Context View	05-Mar-2021	05-Mar-2021	1
1.2.5	Literature Review	05-Mar-2021	08-Mar-2021	4
1.2.6	Challenges	07-Mar-2021	08-Mar-2021	2
1.2.7	Projection	08-Mar-2021	09-Mar-2021	2
1.2.9	Verification	10-Mar-2021	11-Mar-2021	2
2	**Design and Analysis**			
2.1.0	Functional Requirements	18-Mar-2021	21-Mar-2021	4
2.1.1	Non-Functional Properties	18-Mar-2021	21-Mar-2021	4
2.1.2	Use Case	20-Mar-2021	20-Mar-2021	1
2.1.3	Class Diagram	21-Mar-2021	23-Mar-2021	3
2.1.4	Activity Diagram	22-Mar-2021	24-Mar-2021	3
2.1.5	Verification	26-Mar-2021	27-Mar-2021	2
3	**Documentation Diagrams**			
3.1.0	Sequence Diagram	20-Apr-2021	21-Apr-2021	2
3.1.1	State Machine Diagram	20-Apr-2021	21-Apr-2021	2
3.2.0	User Interfaces	20-Apr-2021	21-Apr-2021	2
3.3.0	Conclusion and Future Work	20-Apr-2021	20-Apr-2021	1
3.4.0	Verification	22-Apr-2021	22-Apr-2021	1



Network Diagram



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Real Life Example

- Conclusion and Future work
- User Interfaces

Conclusion and Future work