GUJARAT TECHNOLOGICAL UNIVERSITY

Chandkheda, Ahmedabad

Affiliated

D.A DEGREE COLLEGE OF ENGINEERING & TECHNOLOGY

Presented

Project Report on

"STOCK PRICE PREDICTION USING MACHINE LEARNING"

Under subject of

DESIGN ENGINEERING II-A (3150001)

B.E. SEMESTER- V

SUBMITTED BY

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Academic year
(2020-2021)

D.A DEGREE ENGINEERING &TECHNOLOGY

CERTIFICATE

This is to certify that the **KAKADIYA JAYKUMAR A, (181180107018)** of Semester 5th , **Department of Computer Engineering** has satisfactorily completed the work under the **"STOCK PRICE PREDICTION USING MACHINE LEARNING"** in **Design Engineering II A (3150001)** course.

INTERNAL GUIDE	**HEAD OF DEPARTMENT**
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This is to certify that the **RANA NUPUR P, (181180107042)** of Semester 5th , **Department of Computer Engineering** has satisfactorily completed the work under the **"STOCK PRICE PREDICTION USING MACHINE LEARNING"** in **Design Engineering II A (3150001)** course.

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D.A DEGREE ENGINEERING &TECHNOLOGY

BE – 5ThSemester

Design Engineering II - A (3150001)

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1. INTRODUCTION

Stock Price Prediction is a web-app which not only shows a real-time rates of a specific or all listed stocks but also Predict future trends to earn more. To Provide an accurate information to customer and the Refresh rate as per the yahoo and google finance, it is developed using the official stock market (Financial)APIs. So, it's a perfect app for New commers as well as existing investers.

- **DESIGN THINKING**

Design thinking is a process which includes the "building up" of ideas, with few, or no, limits on breadth during a "brainstorming" phase. This helps reduce fear of failure in the participants and encourages input and participation from a wide variety of sources in ideation phase. The phrase thinking outside the box has been coined to describe one goal of brain storming phase and is encouraged, since this aid in the discovery of hidden elements and ambiguities in the situation and discovering potentially faultyassumptions.

Although design is always influenced by individual preferences, the design thinking methods shares a common set of traits, mainly: creativity, ambidextrous thinking, team work, user centeredness (empathy), curiosity and optimism. In design thinking is a formal method for practical, creative resolution of problems and creation of solutions, with the intent of an improved future result. In this regard it is a form of solution based or solution-focused thinking - starting with a goal (a better future situation) instead of solving a specific problem. By considering both present and future conditions and parameters of the problem, alternative solutions may be explored simultaneously. This type of thinking most often happens in the built, or artificial,environment.

2. AEIOUSUMMARY

A: Activities

E: Environment

I : Interactions

O: Objects

U: Users

This canvas is totally based on the observation.After observing some documents like yahoo finance & google finance we have started working to make itfair.

- **Activities**

The activities related with the user are included in this section. Some of those activities are:

→SIGN UP

→VERIFICATION

→STOCK ANALAYSIS

→ HELP TO DIGITALIZATION

- **Environment**

This sheet includes the environmental behavior all around the user.

→NATURAL ISSUES

→CROWED

→WEATHER PROBLEM

- **Interaction**

→ CUSTOMERS TO COMPANY

→ STAKEHOLDER TO COMPANY

→ COMPANY MEMBERS TO COMPANY

➢ Objects

→ TIME SAVING

→SUPPORT DIGITALIZATION

→ ADVANCE TECHNOLOGY

➢ Users

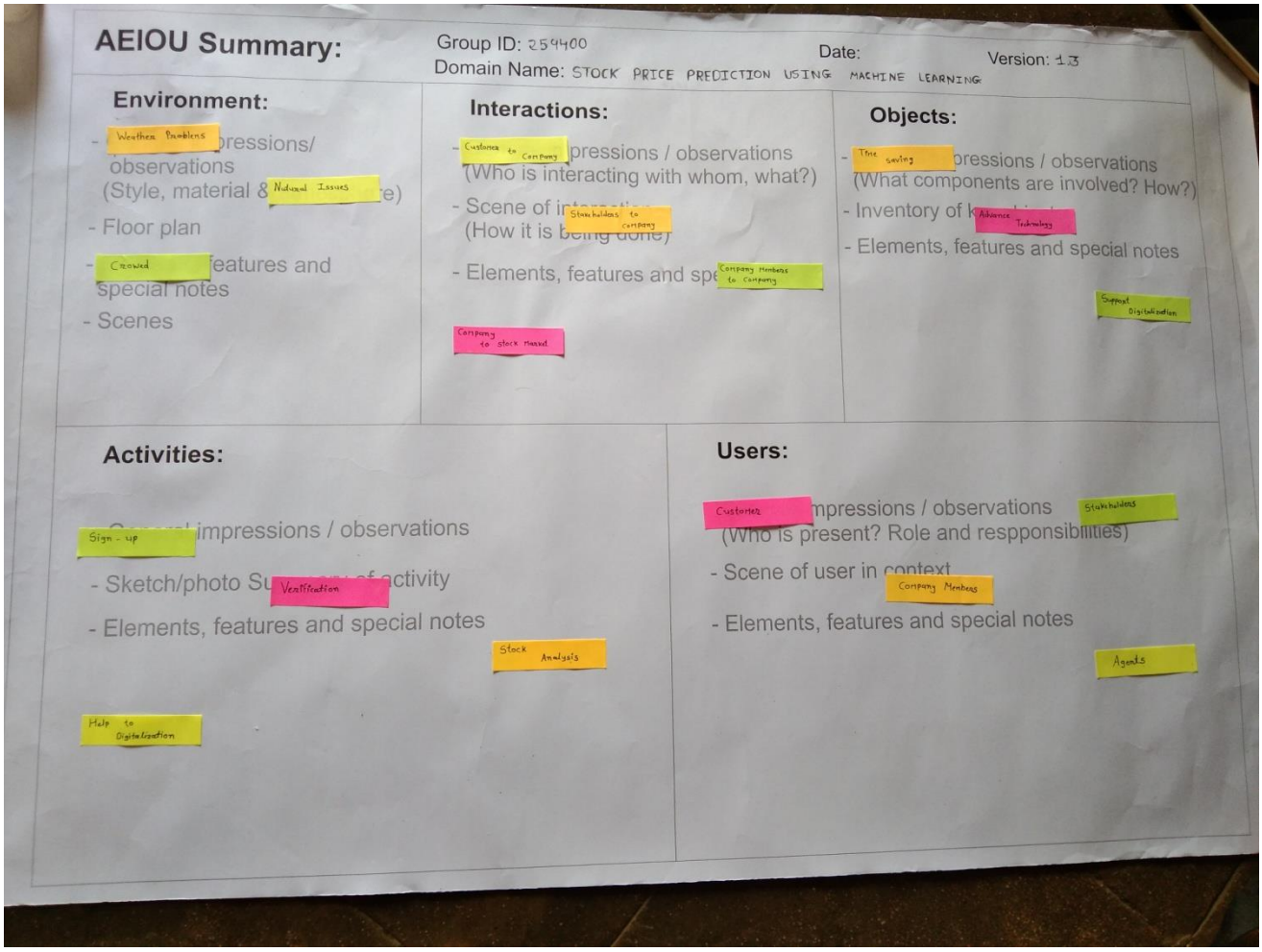
The users of this project are all people.

→EMPLOYEES

→CUSTOMER

→ STAKEHOLDER

→AGENTS


AEIOU Summary:
Group ID: 254400
Date:
Version: 13
Domain Name: STOCK PRICE PREDICTION USING MACHINE LEARNING
Environment:
- Floor plan
- Scenes
Interactions:
- Scene of
(How it is
- Elements, features and
Objects:
- Inventory of
- Elements, features and special notes
Activities:
- Sketch/photo
- Elements, features and special notes
Users:
- Scene of user in context
- Elements, features and special notes
Weather Problems
Natural Issues
Crowed
Customer to Company
Stakeholders to company
Company Members to company
Company to stock market
Time saving
Advance Technology
Support Digitalization
Customer
Stakeholders
Sign - up
Verification
Company Members
Stock Analysis
Agents
Help to Digitalization

3.EMPATHYMAPPING

Empathy is the experience of understanding another person's condition from their perspective.

One of the most prominent use cases of machine learning is "Fintech" (Financial Technology for those who aren't buzz-word aficionados); a large subset of which is in the stock market. Financial theorists, and data scientists for the better part of the last 50 years, have been employed to make sense of the marketplace in order to increase return on investment. However, due to the multidimensional nature of the problem, the scale of the system, and inherent variation with time, it has been an overwhelmingly tough challenge for humans to solve, even with the assistance of conventional data analytics tools. However, with the onset of recent advancements in machine learning applications, the field has been evolving to utilize non-deterministic solutions the "learn" what is going on in order to make more accurate predictions.

Here we would like to explain the aspects of this canvas by our project.

- **Users**

  → Employee

  → Stakeholders

  → Customer

  → Broker

- **StakeHolders**

  →Government

  → Company Owner

  →Company Members

- **STORY BOARDING:**

Happy story:

- **1st happy story**

Our Web-App provide technical analysis visualization and prediction using stock market data. It is helpful to Investors, stockholders etc.

- **2nd happy story**

The Investor will get know comparatively analyze the effectiveness prediction of stock market, which helps to invest in right stock and gives maximum profit.

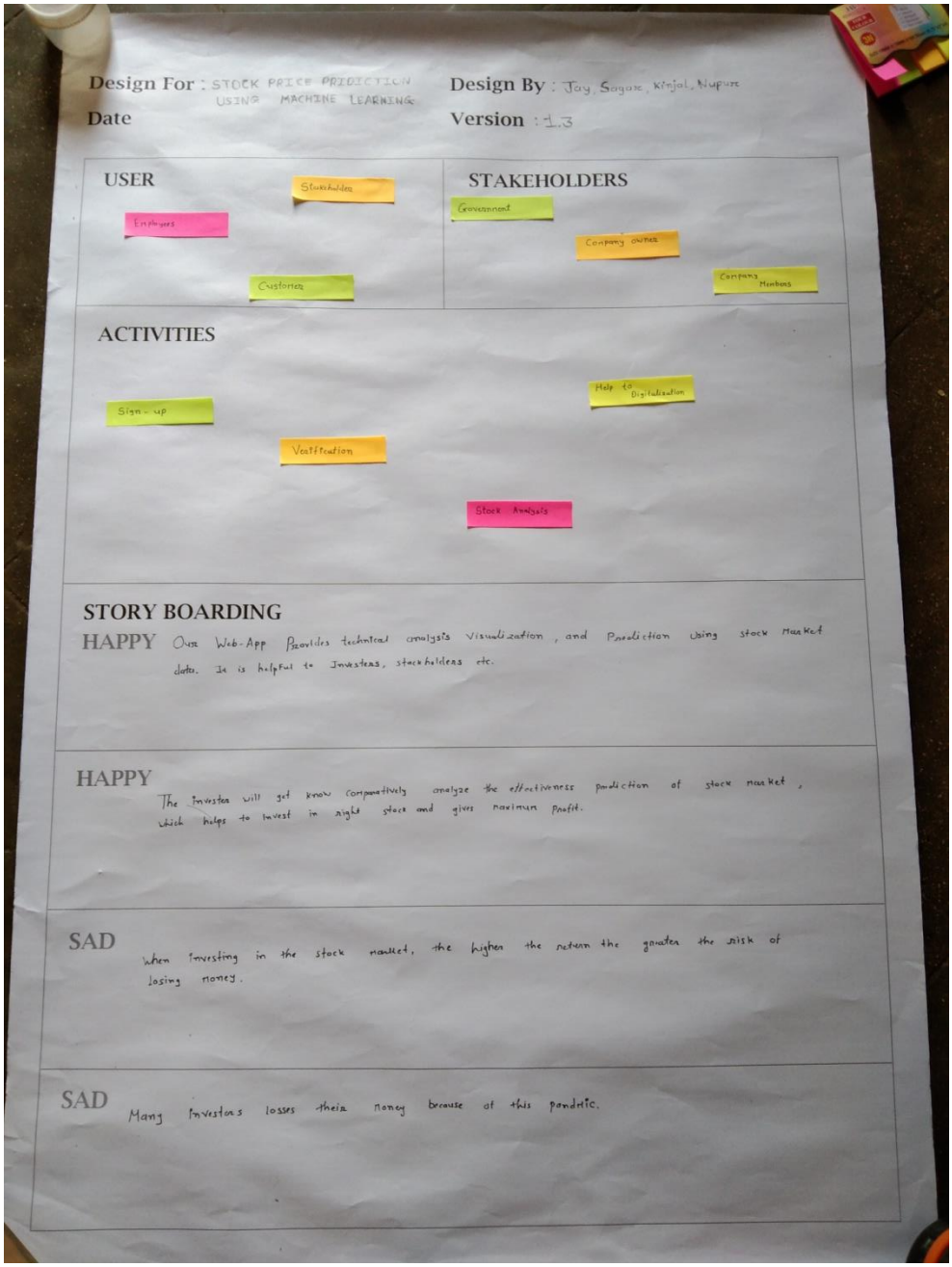
Sad story :

- **1st sad story**

When investing in the stock market, the higher the return the grater the risk of losing money.

- **2nd sad story**

Many investors losses their Money because of this pandemic.


Design For : STOCK PRICE PREDICTION USING MACHINE LEARNING
Design By : Jay, Sagar, Kinjal, Nupur
Date
Version : 1.3
USER
Stakeholder
Employers
Customer
STAKEHOLDERS
Government
Company owner
Company Members
ACTIVITIES
Sign - up
Verification
Help to Digitalization
Stock Analysis
STORY BOARDING
HAPPY Our Web-App provides technical analysis visualization, and Prediction using stock Market data. It is helpful to Investers, stackholders etc.
HAPPY
The Investor will get know comparatively analyze the effectiveness prediction of stock market, which helps to invest in right stock and gives maximum Profit.
SAD
When investing in the stock market, the higher the return the greater the risk of losing money.
SAD
Many Investors losses their money because of this pandmic.

4.Ideation Canvas

- **The general activities**

→ Sign Up

→ Online process

→ verify Account

→ Web-Application

- **Situation / Context / Location**

→ weather problem

→ In crowdy environment

→ help in digitalization

- **Props / Possible Solutions:**

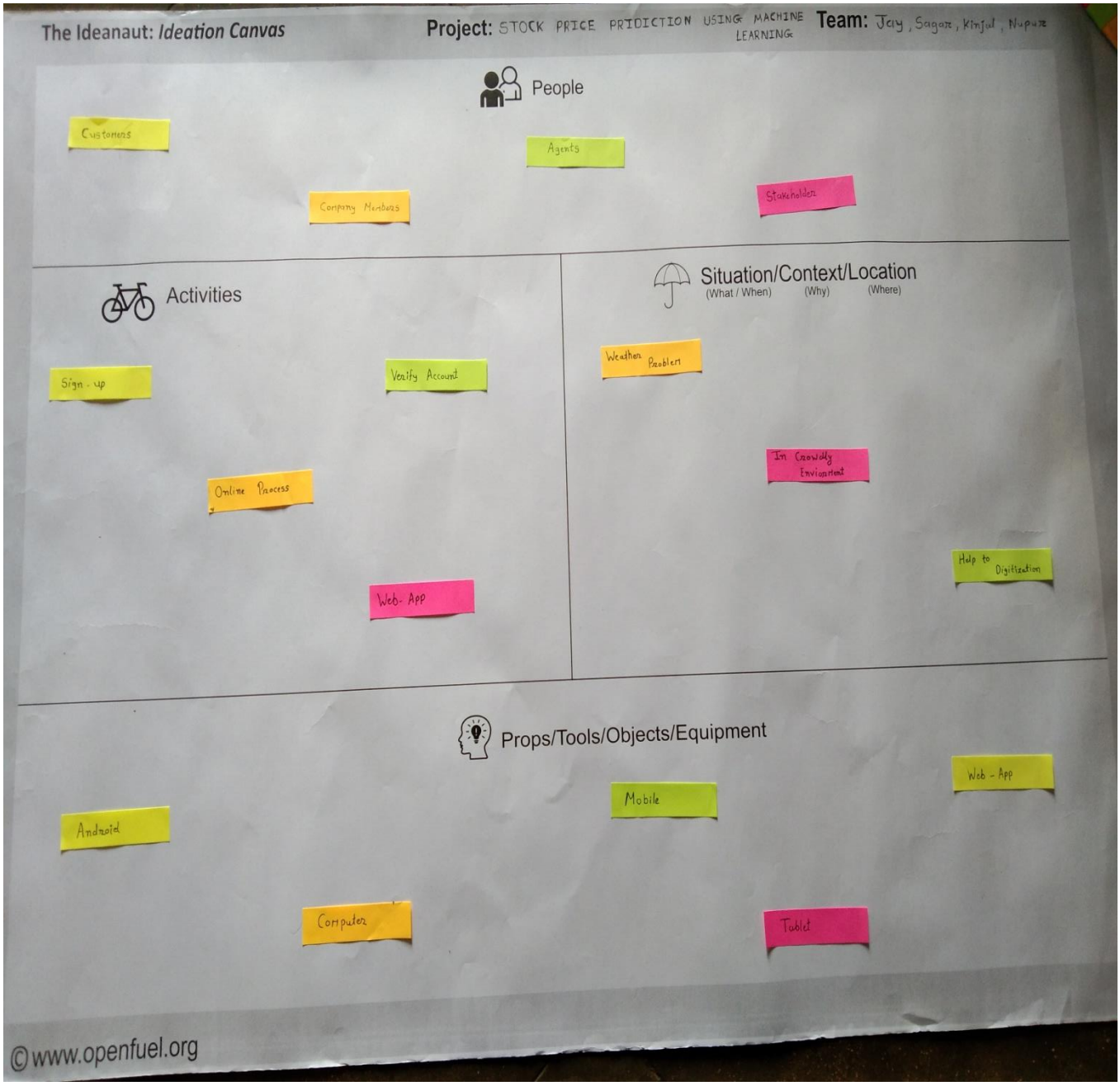
→ Tablet

→ Android / IOS

→ Computer

→ Mobile

→ Application


The Ideanaut: Ideation Canvas
Project: STOCK PRICE PRIDICTION USING MACHINE LEARNING
Team: Jay, Sagar, Kinjal, Nupur
People
Customers
Agents
Company Members
Stakeholders
Activities
Sign - up
Verify Account
Online Process
Web- App
Situation/Context/Location
(What / When)
(Why)
(Where)
Weather Problem
In Crowdly Enviornment
Help to Digitization
Props/Tools/Objects/Equipment
Web - App
Mobile
Android
Computer
Tablet
©www.openfuel.org

5.PRODUCT DEVELOPMENT CANVAS

➢ Purpose

→ Easy to modify

→ Time saving

→ useful for workers and students

➢ People

→ Customers

→ Employee

→Stakeholder

➢ Components

→ Computer

→ Wi-fi

→ Android

→ Application

➢ Features

→ Safety

→ Easy to Understand

➢ Product Function

→ fast solution

→ Multitasking

→ Stake Price Predict

- **Product Experience**

→ Comfortable

→ Easy to Acess

- **Customer Revalidation**

→ Otp verification

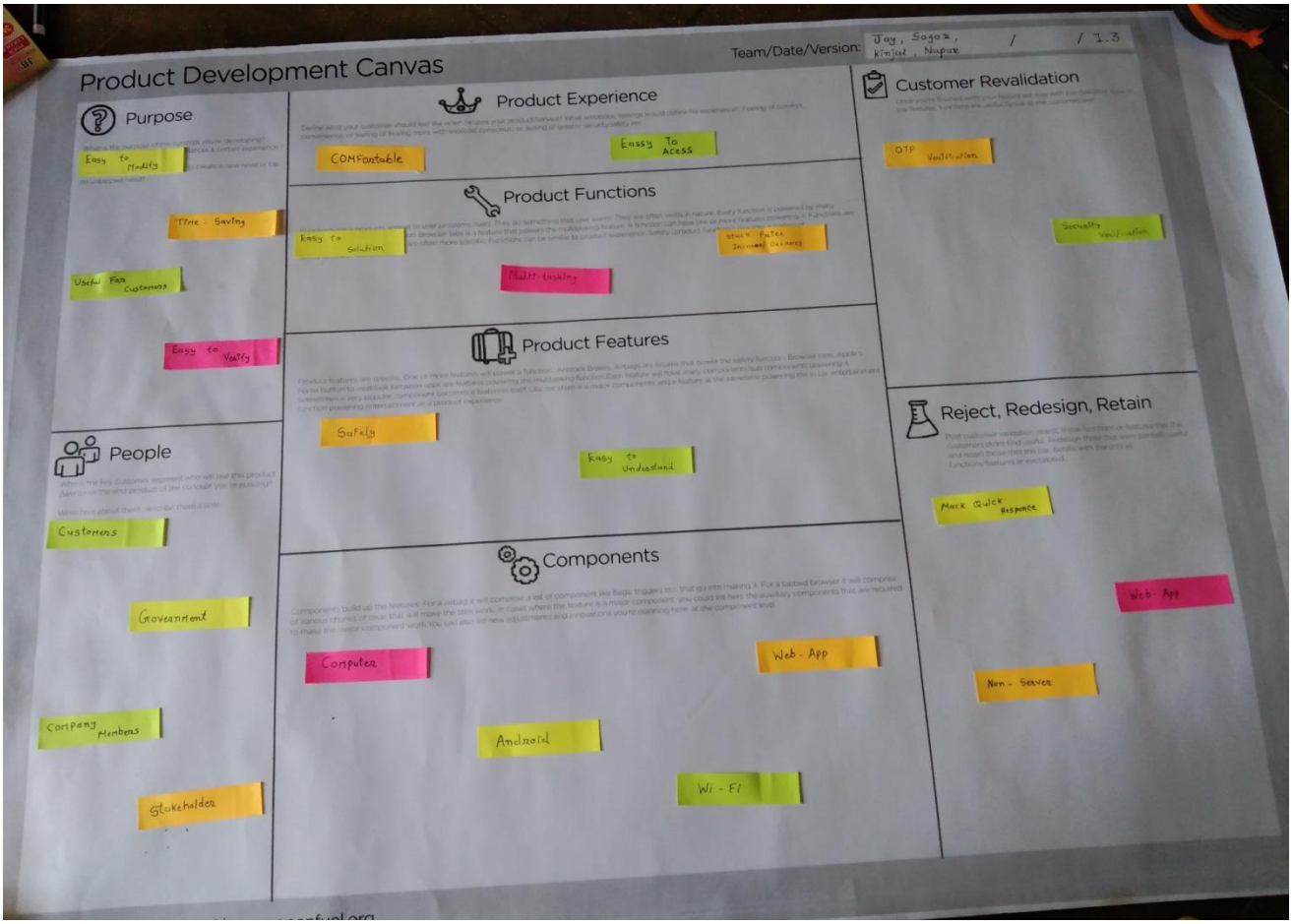
→ Security validation

- **Reject, Redesign, And Retain**

→ More secure

→ Make quick response

→ website also created using API


Product Development Canvas
Team/Date/Version: Jay, Sagar, Kinjal, Nupur / / 1.3
Purpose
Easy to Modify
Time - Saving
Useful For Customers
Easy to Verify
People
Customers
Government
Company Members
Stakeholder
Product Experience
COMFortable
Eassy To Acess
Product Functions
Easy to Solution
Stuck Enter Internet Connect
Multi-tasking
Product Features
Safety
Easy to Understand
Components
Computer
Web - App
Android
Wi - Fi
Customer Revalidation
OTP Verification
Security Verification
Reject, Redesign, Retain
Mock Quick Response
Web - App
Non - Server

6.LEARNING NEED MATRIX

➢ 6.1 Domain of skill sets to belearned:

→ STOCK PRICE PREDICTION USING MACHINE LEARNING

➢ 6.2During BE 2/Stage1:

1)Application ProcessInvolved/Methods:

→PYTHON

→ANDROID

→MACHINE LEARNING

→JAVA-SCRIPT

2)Applicable Standards And DesignSpecification:

→ Android apps can be written using kotlin and JAVA language.

→ Python is concerent,class based object oriented programming language.

3)Component materials & strengthcriterea:

→OS

→Mobile

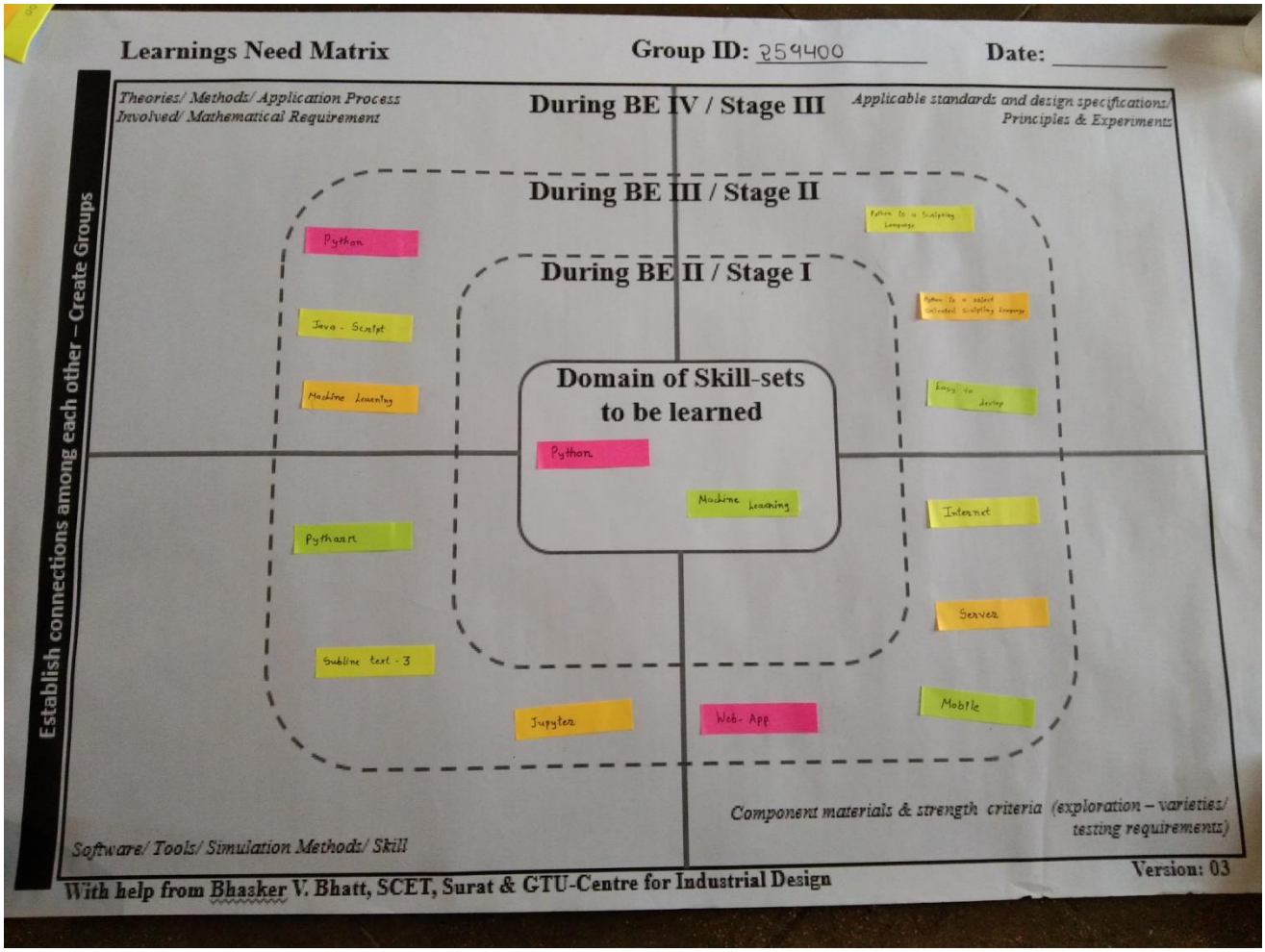
→Internet

→Server

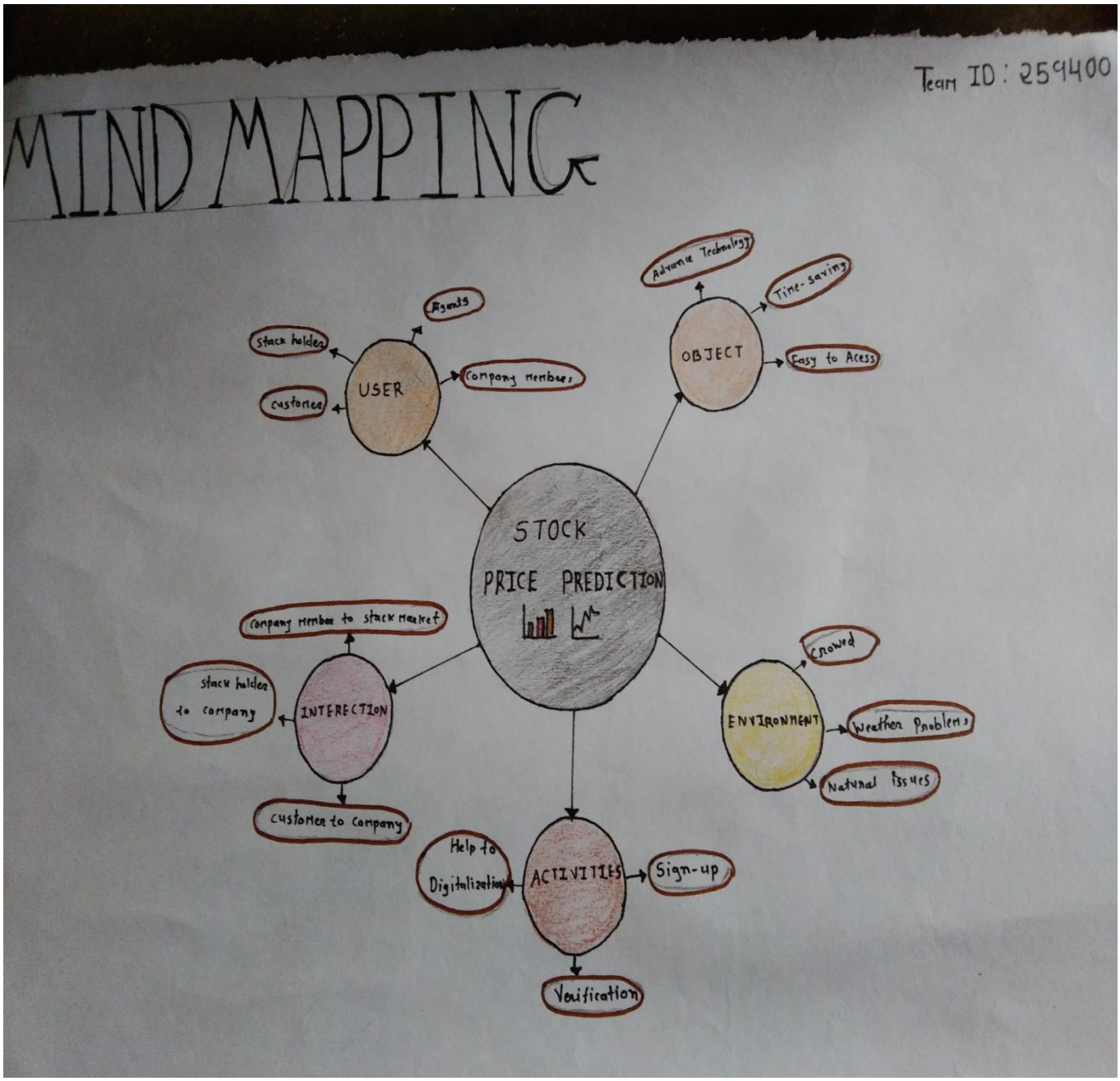
4)Software/Tools:

→ Pycharm

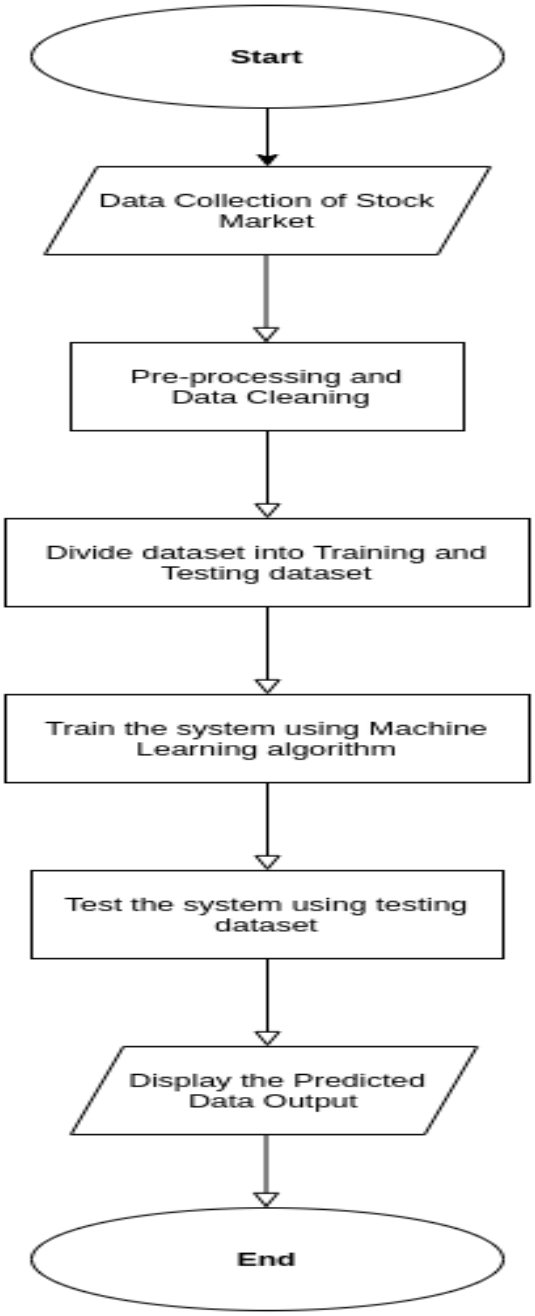
→ Jupyter Notebook


Learnings Need Matrix
Group ID: 259400
Date:
Theories/ Methods/ Application Process Involved/ Mathematical Requirement
During BE IV / Stage III
Applicable standards and design specifications/ Principles & Experiments
During BE III / Stage II
During BE II / Stage I
Domain of Skill-sets to be learned
Python
Machine Learning
Establish connections among each other – Create Groups
Python
Java - Scalpt
Machine Learning
Pythaart
Subline text - 3
Jupyter
Web- App
Internet
Server
Mobile
Software/ Tools/ Simulation Methods/ Skill
Component materials & strength criteria (exploration – varieties/ testing requirements)
With help from Bhasker V. Bhatt, SCET, Surat & GTU-Centre for Industrial Design
Version: 03

7.MINDMAPPING



8.PROTOTYPE


Start
Data Collection of Stock Market
Pre-processing and Data Cleaning
Divide dataset into Training and Testing dataset
Train the system using Machine Learning algorithm
Test the system using testing dataset
Display the Predicted Data Output
End

9..CONCLUSION

Models have what are known as “hyperparameters.” These are the parameters that govern the model, they define how the model is created. Altering these can give us better (or perhaps worse) results. Examples include: number of neurons in each hidden layer, the number of hidden layers, the activation function, etc. Our goal here is to “tune” these hyperparameters to achieve a lower error tolerance than was possible with our first model. The simplest way to do this, in my opinion, is do increase the number of neurons in the hidden layers. I am by no means a leading source of knowledge on this topic, but I will venture far enough to say that increasing the number of neurons and/or the number of hidden layers increases the level of abstraction with which the model can represent the given data.

-:References:-

→www.nptel.com

→www.darshanstudymaterial.com

→www.gtustudymeterial.com

→www.data-flair.training

THE END