A PROJECT REPORT ON

Crop Yield Prediction System

SUBMITTED TO THE SAVITRIBAI PHULE PUNE UNIVERSITY,
PUNE IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE

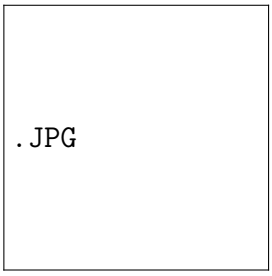
BACHELOR OF ENGINEERING (INFORMATION TECHNOLOGY)

BY

student name	Exam No:
student name	Exam No:
student name	Exam No:

Under The Guidance of

Prof. Guide Name



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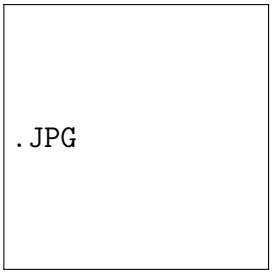

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CERTIFICATE

This is to certify that the Project Entitled

Crop Yield Prediction System

Submitted by

Student name	Exam No:
Student name	Exam No:
Student name	Exam No:

is a bonafide work carried out by Students under the supervision of Prof. Guide Name and it is submitted towards the partial fulfillment of the requirement of Bachelor of Engineering (INFORMATION TECHNOLOGY) Project.

Prof. Guide Name
Internal Guide
Dept. of Computer Engg.

Prof. HOD Name
H.O.D
Dept. of Computer Engg.

Abstract

In general, agriculture is the backbone of India and also plays an important role in Indian economy by providing a certain percentage of domestic product to ensure the food security. But now-a-days, food production and prediction is getting depleted due to unnatural climatic changes, which will adversely affect the economy of farmers by getting a poor yield and also help the farmers to remain less familiar in forecasting the future crops. This research work helps the beginner farmer in such a way to guide them for sowing the reasonable crops by deploying machine learning, one of the advanced technologies in crop prediction. Naive Bayes, a supervised learning algorithm puts forth in the way to achieve it. The seed data of the crops are collected here, with the appropriate parameters like temperature, humidity and moisture content, which helps the crops to achieve a successful growth. In addition as the software, a mobile application for Android is being developed. The users are encouraged to enter parameters like temperature and their location will be taken automatically in this application in order to start the prediction process.

Acknowledgments

Please Write here Acknowledgment.Example given as

It gives us great pleasure in presenting the preliminary project report on ***"Crop Yield Prediction System"****.*

I would like to take this opportunity to thank my internal guide ***Prof. Guide Name*** *for giving me all the help and guidance I needed. I am really grateful to them for their kind support. Their valuable suggestions were very helpful.*

I am also grateful to ***Prof. HOD Name****, Head of Computer Engineering Department, CollegeName for his indispensable support, suggestions.*

In the end our special thanks to ***Other Person Name*** *for providing various resources such as laboratory with all needed software platforms, continuous Internet connection, for Our Project.*

Student name
Student name
Student name
(B.E. INFORMATION TECHNOLOGY.)

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CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

From ancient days, agriculture is considered as the main source of supply to satisfy the daily needs of human lives. It is also considered a primary occupation, and also one of the India's major industrial sectors. The farmers are ought to follow a traditional naked eye observation and yielded healthy crops without the involvement of chemicals for animals and also to their cultivation land in order to keep healthy diversity. But nowadays, weather conditions are being rapidly changing against the elemental assets to deplete the food and increase the security. In meantime, the GDP in agricultural sector is keep on decreasing, where in 2005 it was about 17.211.1, in 2018 it was 52020 it came down to 2farmers come from rural areas, and if the revenue from crop production goes down, their lifestyle would be influenced by the farms at industry level.

1.1.1 Motivation

main motivation is to minimize the time required for the surveying process which leads to delayed insurance claims.Develpo a farmer friendly chatbot to ask queries.

1.1.2 Objective

- (a) To minimize Time required for surveying process
- (b) Spread awareness about the government scheme
- (c) Reduce delay in the settlement of claim
- (d) Fast assessment of crop damage
- (e) Analysis of assessment data.
- (f) More Accuracy in records
- (g) To provide more interactive platform for farmers

- (h) To provide the accurate data so that the needy farmers will get claim timely.

CHAPTER 2

LITERATURE SURVEY

2.1 STUDY OF RESEARCH PAPER

1.Paper Name: Crop Yield Analysis Using Machine Learning Algorithms

Author: Fatin Farhan Haque, Ahmed Abdelgawad, Venkata Prasanth Yanambaka, Kumar Yelamarthi

Abstract :- Agriculture is not only a huge aspect of the growing economy, but it's essential for us to survive. Predicting crop yield is not an easy task, as it depends on many parameters such as water, ultra-violet (UV), pesticides, fertilizer, and the area of the land covered for that region. In this paper, two different Machine Learning (ML) algorithms are proposed to analyze the crops' yield. These two algorithms, Support Vector Regression (SVR) and Linear Regression (LR), are quite suitable for validating the variable parameters in the predicting the continuous variable estimation with 140 data points that were acquired. The parameters mentioned above are key factors affecting the yield of crops. The error rate was measured with the help of Mean Square Error (MSE) and Coefficient of Determination (R2), where MSE gave out approximately 0.005 and R2 gave around 0.85. The same dataset has been used for quick comparison between the algorithms' performances.

2.Paper Name: :- An Analytical Approach for Soil and Land Classification System using Image Processing

Author: Prof. A. V. Deorankar

Abstract : — In the last few decades researchers are interested in land mapping and its classification due to various reasons. The reasons for an increase in the focus of the research community are, the increasing demand for agricultural land and soil health analysis, as the health of the soil, is essential for the healthy production of crops. Image classification is one such approach for soil and land health analysis. It is a complex process having the effects of various factors. This paper has proposed the study of current researches, the problems it addressed, and its prospects. The emphasis is focused on the analytical study of various advanced and efficient classification mechanisms and techniques. Here, it has been attempted to study the factors these approaches have addressed to improve the accuracy of the classification. Proper utilization of the number of features of remotely sensed data and selecting the best suitable classifier are most important for improving the accuracy of the classification. The knowledgebased classification or Non-parametric classifiers like decision tree classifier or neural network have gained more popularity for multisource data classification in recent times. However, there is still the scope of further research, to reduce uncertainties in the improvement of accuracy of the Image classification mechanisms

3.Paper Name: Crop Yield Prediction using Machine Learning Techniques

Author name: Ramesh Medar

abstract : Agriculture is the field which plays an important role in improving our countries economy. Agriculture is the one which gave birth to civilization. India is an agrarian country and its economy largely based upon crop productivity. Hence we can say that agriculture can be backbone of all business in our country. Selecting of every crop is very important in the agriculture planning. The selection of crops will depend upon the different parameters such as market price, production rate and the different government policies. Many changes are required in the agriculture field to improve changes in our Indian economy. We can improve agriculture by using machine learning techniques which are applied easily on farming sector. Along with all advances in the machines and technologies used in farming, useful and accurate information about different matters also plays a significant role in it. The concept of this paper is to implement the crop selection method so that this method helps in solving many agriculture and farmers problems. This improves our Indian economy by maximizing the yield rate of crop production.

4.Paper Name:A Study on Various Data Mining Techniques for Crop Yield Prediction

Author::- Yogesh Gandge

abstract : India is a country where agriculture and agriculture related industries are the major source of living for the people. Agriculture is a major source of economy of the country. It is also one of the country which suffer from major natural calamities like drought or flood which damages the crop. This leads to huge financial loss for the farmers thus leading to the suicide. Predicting the crop yield well in advance prior to its harvest can help the farmers and Government organizations to make appropriate planning like storing, selling, fixing minimum support price, importing/exporting etc. Predicting a crop well in advance requires a systematic study of huge data coming from various variables like soil quality ,pH ,EC,N,P,K etc. As Prediction of crop deals with large set of database thus making this prediction system a perfect candidate for application of data mining. Through data mining we extract the knowledge from the huge size of data. This paper presents the study about the various data mining techniques used for predicting the crop yield. The success of any crop yield prediction system heavily relies on how accurately the features have been extracted and how appropriately classifiers have been employed. This paper summarizes the results obtained by various algorithms which are being used by various authors for crop yield prediction, with their accuracy and recommendation.

5.Paper Name:CROP PREDICTION USING PREDICTIVE ANALYTICS

Author:P. S. Vijayabaskar, Sreemathi.R, Keertanaa.E

Abstract:— This work is to construct a model for testing the soil fertility. It also suggests the crop which has to be planted depending upon the value obtained from the sensor. It also provides the regional wise information about the crop in the form of graph. We have farmer chat where the farmers can share and get idea from the expert by registering in this application. It also suggests the fertilizer which has to be added to the soil in order to increase the crop productivity. It helps the farmer to analyze the fertility of their yard and plant the better crop to increase their productivity and profit. It also provides the information about the fertilizer to be added in the soil and also provide the information about the nearby fertilizer shop.

6.paper Name: Real-Time Monitoring of Agricultural Land with Crop Prediction and Animal Intrusion Prevention using Internet of Things and Machine Learning at Edge

Author: Nikhil R

Abstract: Agriculture is considered as a foundation of life, since it is the primary source of food and other raw materials. It plays a crucial part in the country's economic development. Sadly, many of our farmers cultivate their land using the conventional methods. we should replace these obsolete techniques of farming with advanced techniques. The proposed system describes how the use of the IOT and ML techniques can be combined to make the irrigation smart. The proposed system saves time avoiding problems like constant vigilance over the field by using IOT devices, crop prediction helps the farmers to grow suitable crops depending on the soil parameters by the use of machine learning techniques and it also helps in prevention of the intruders like wild animals into the field. It also helps in water conservation by supplying the plants / field with minimal amount of water automatically through the help of sensors depending on the water requirements. and finally, SMS and Email notifications will be sent to the farmer mobile phone during the abnormal conditions of his farm. The proposed system can be used for taking edge decisions in real time.

7. Paper Name: Supervised Classification of Spectral Signatures from Agricultural Land-Cover in Panama Using the Spectral Angle Mapper Algorithm

Author name: Javier E. Sanchez-Gal ´ an **Abstract:**In this article the development of a database of referenced spectral signatures from agricultural land-cover for the Republic of Panama is presented. This database consists of reflectance spectra measured on crops and low vegetation, such as: rice, chili, onion, watermelon, maize and bare soil and of satellite images of their plots. Details of the integration process of the database and software developed for the manipulation of spectral signatures, are described. The Spectral Angle Mapping algorithm (SAM) is used for the supervised classification of the agricultural coverages in the database. On the one hand, results indicate the possibility of using this classification technique for the automatic determination of crops and even different phenological stages in a crop via a satellite image. On the other hand, results highlight the limitations of using this technique on recently planted crops and soil flooded by rain or with soil cultivated with a low agricultural cover crop. We foresee the use of this methodology and database for agricultural land surveys, crop management or used in the general organization of the territory

8.Paper Name: Soil Classification and Crop Suggestion using Image Processing

Author:T. Abimala, S. Flora Sashya and K. Sripriya

Abstract:- This paper is intended to support agriculture by classifying 7 different types of soils like Clay, Clayey Peat, Clayey Sand, Humus Clay, Peat, Sandy Clay and Silty Sand, and in suggesting suitable crops that could be grown in those particular soils using image processing. Pre-processing is done by using Low Pass filter. HSV, GLCM, Gabor Wavelet algorithms are used for feature extraction. HSV, GLCM are used to perform colour based feature extraction. Gabor filters are used to perform texture based feature extraction. The features obtained from the test image are then compared with the features obtained from the images in the dataset. Matching of image features is achieved by training the Decision Tree classifier with statistical measurements like mean, standard deviation, skew and kurtosis. Finally the soil is predicted with the help of segmented images that are given as input for simulation using Matlab R2018a and is followed by crop suggestion.

9.Paper name: Supervised Machine learning Approach for Crop Yield Prediction in Agriculture Sector

Author: Dr. Y. Jeevan Nagendra Kumar1

Abstract:—Machine learning (ML) is a crucial perspective for acquiring real-world and operative solution for crop yield issue. From a given set of predictors, ML can predict a target/outcome by using Supervised Learning. To get the desired outputs need to generate a suitable function by set of some variables which will map the input variable to the aim output. Crop yield prediction incorporates forecasting the yield of the crop from past historical data which includes factors such as temperature, humidity, ph, rainfall, crop name. It gives us an idea for the finest predicted crop which will be cultivate in the field weather conditions. These predictions can be done by a machine learning algorithm called Random Forest. It will attain the crop prediction with best accurate value. The algorithm random forest is used to give the best crop yield model by considering least number of models. It is very useful to predict the yield of the crop in agriculture sector

CHAPTER 3

PROBLEM STATEMENT

3.1 PROBLEM STATEMENT

We need to know the features and characteristics of various soil types to understand which crops grow better in certain soil types. Machine learning techniques can be helpful in this case. Here we can use clustering technique to group data, and then classified the data by the order of soil and places with Random Tree algorithm. Then apply apriority Mining process to generate an association rule for finding suitable crops for the specific soil. Soil series and land type combine reprsents the soil class in the database.

CHAPTER 4

PROJECT REQUIREMENT

4.1 EXTERNAL INTERFACE REQUIREMENT

4.1.1 User Interface

Application Based Crop Prediction.

4.1.2 Hardware Interfaces:

RAM : 8 GB

As we are using Machine Learning Algorithm and Various High Level Libraries Laptop

RAM minimum required is 8 GB.

Hard Disk : 40 GB

Data Set of CT Scan images is to be used hence minimum 40 GB Hard Disk memory is required.

Processor : Intel i5 Processor

Pycharm IDE that Integrated Development Environment is to be used and data loading should be fast hence Fast Processor is required

IDE : Pycharm

Best Integrated Development Environment as it gives possible suggestions at the time of typing code snippets that makes typing feasible and fast.

Coding Language : Python Version 3.5

Highly specified Programming Language for Machine Learning because of availability of High Performance Libraries.

Operating System : Windows 10

Latest Operating System that supports all type of installation and development Environment

4.1.3 Software Interfaces

Operating System: Windows 10

IDE: Pycharm ,Spyder

Programming Language : Python

4.2 NON FUNCTIONAL REQUIREMENT

4.2.1 PerformanceRequirements

The performance of the functions and every module must be well. The overallperformance of the software will enable the users to work eciently. Perfor-mance of encryption of data should be fast. Performance of the providingvirtual environment should be fastSafety Requirement•The application is designed in modules where errors can be detected and xedeasily. This makes it easier to install and update new functionality if required.

4.2.2 Safety Requirement

The application is designed in modules where errors can be detected and fixed easily. This makes it easier to install and update new functionality if required.

4.2.3 Software Quality Attributes

Our software has many quality attribute that are given below:-

Adaptability: This software is adaptable by all users.

Availability: This software is freely available to all users. The availability of the software is easy for everyone.

Maintainability: After the deployment of the project if any error occurs then it can be easily maintained by the software developer.

Reliability: The performance of the software is better which will increase the reliabilityof the Software.

User Friendliness: Since, the software is a GUI application; the output generated is much user friendly in its behavior.

Integrity: Integrity refers to the extent to which access to software or data by unauthorized persons can be controlled.

Security: Users are authenticated using many security phases so reliable security is provided.

Testability: The software will be tested considering all the aspects.

CHAPTER 5

SYSTEM ANALYSIS

5.1 SYSTEM ARCHITECTURE

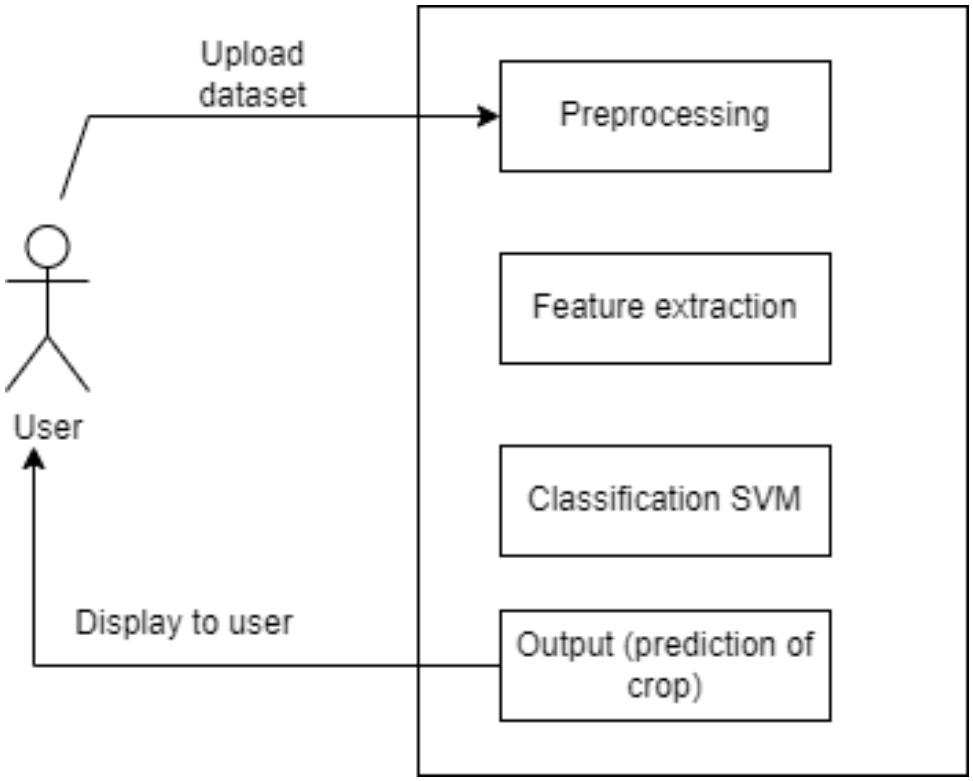

Figure 5.1: system Architecturel

5.1.1 Module

- Admin
- In this module,the Admin has to log in by using valid user name and password. After login successful he can do some operations such as View All Users and Authorize, View All E-Commerce Website and Authorize,View All Products and Reviews,View All Products Early Reviews, View All Keyword Search Details, View All Products Search Ratio, View All Keyword Search Results, View All Product Review Rank Results.

- View and Authorize Users
- In this module, the admin can view the list of users who all registered. In this, the admin can view the user's details such as, user name, email, address and

admin authorizes the users.

- View Charts Results
- View All Products Search Ratio,View All Keyword Search Results,View All Product Review Rank Results.

- Ecommerce User
- In this module, there are n numbers of users are present. User should register before doing any operations. Once user registers, their details will be stored to the database. After registration successful,he has to login by using authorized user name and password Once Login is successful user will do some operations like Add Products, View All Products with reviews, View All Early Product's reviews, View All Purchased Transactions.

- End User
- In this module, there are n numbers of users are present. User should register before doing any operations. Once user registers, their details will best or to the database. After registration successful,he has to login by using authorized user name and password. Once Login is successful user will do some operations like Manage Account, Search Products by keyword and Purchase, View Your Search Transactions, View.

5.1.2 Data Flow Diagram

In Data Flow Diagram,we Show that flow of data in our system in DFD0 we show that base DFD in which rectangle present input as well as output and circle show our system,In DFD1 we show actual input and actual output of system input of our system is text or image and output is rumor detected like wise in DFD 2 we present

operation of user as well as admin.

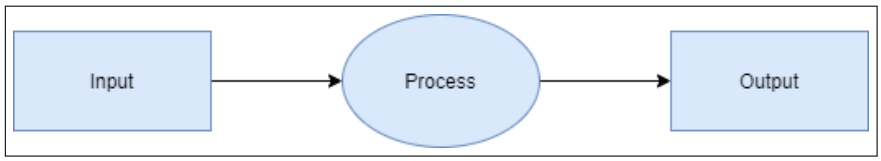

Figure 5.2: Data Flow(0) diagram

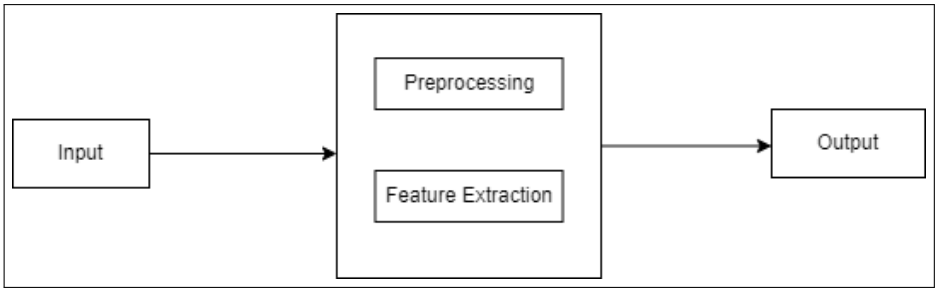

Figure 5.3: Data Flow(1) diagram

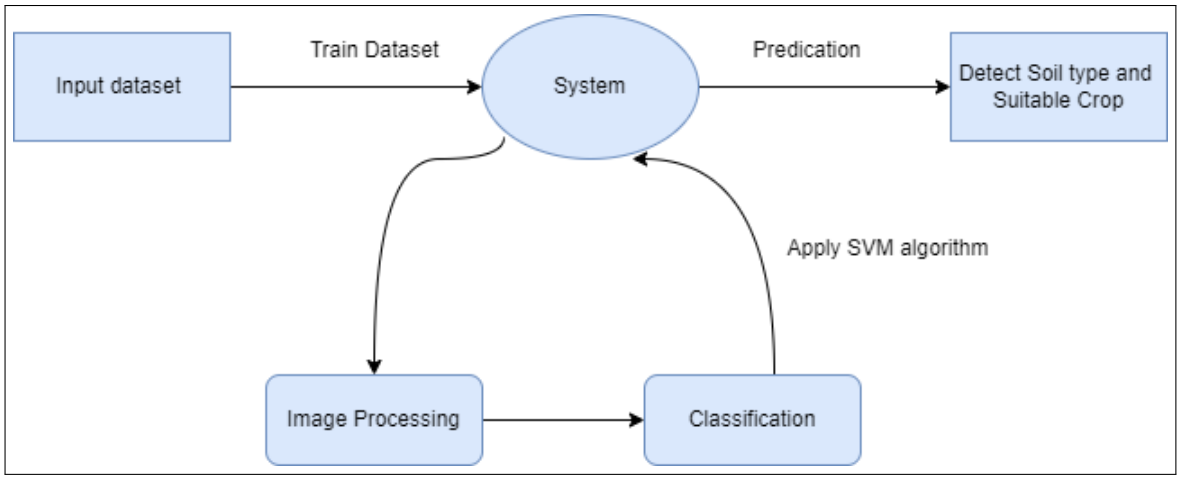

Figure 5.4: Data Flow(2) diagram

5.2 UML DIAGRAMS

Unified Modeling Language is a standard language for writing software blueprints.The UML may be used to visualize,specify,construct and document the artifacts of a softwareintensive system.UML is process independent,although optimally it should be used in process that is use case driven,architecture-centric,iterative,and incremental.The Number of UML Diagram is available.

Class Diagram.

Use case Diagram.

Activity Diagram.

Sequence Diagram.

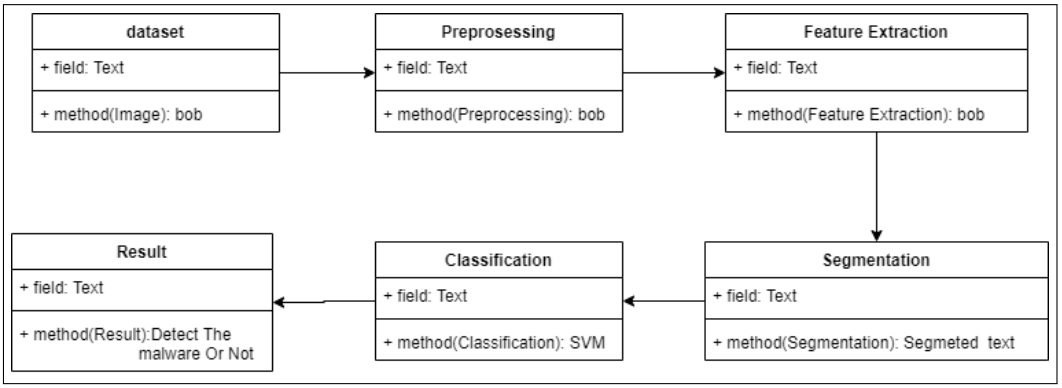

Figure 5.5: Class Diagram Diagram

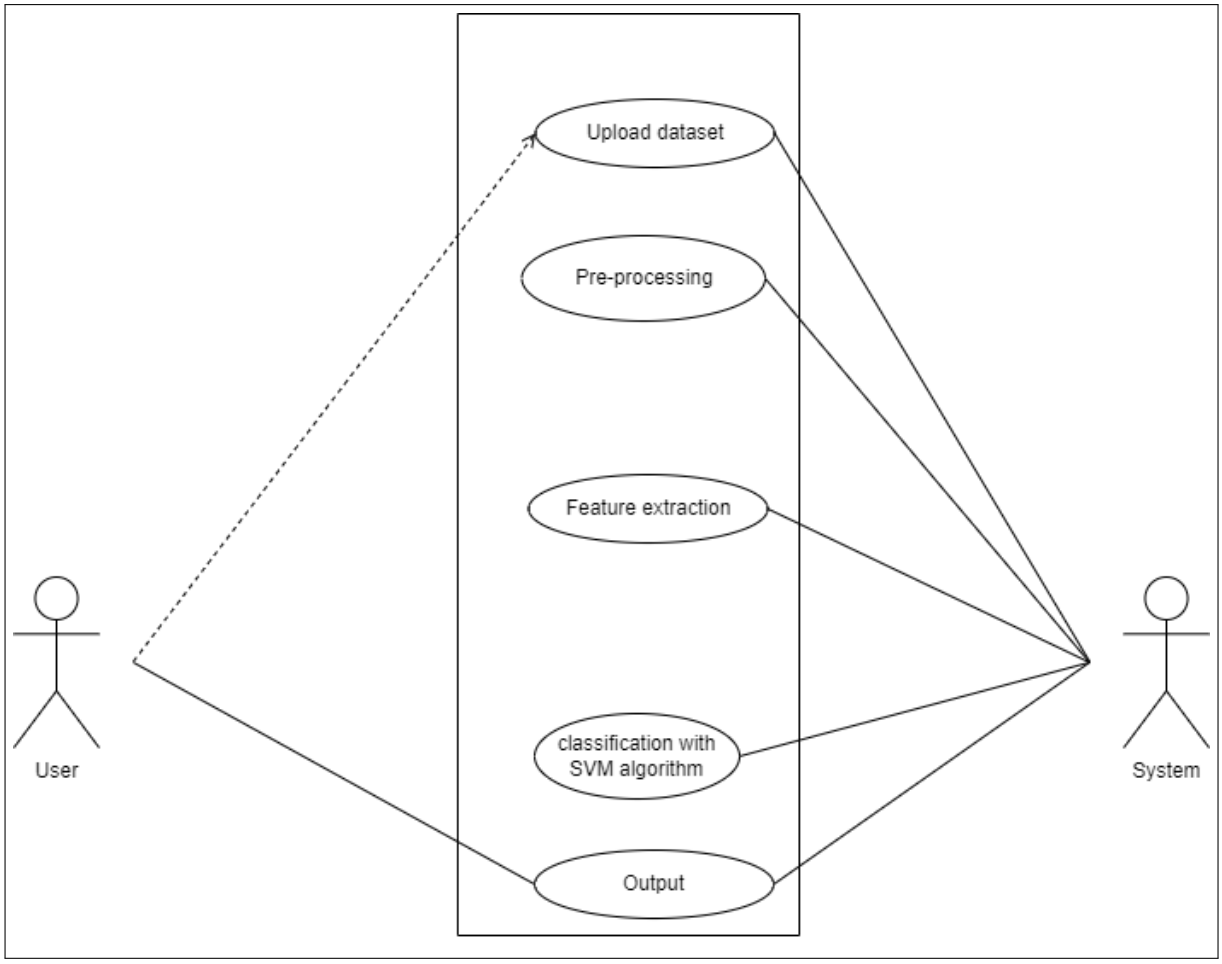

Figure 5.6: Use case Diagram

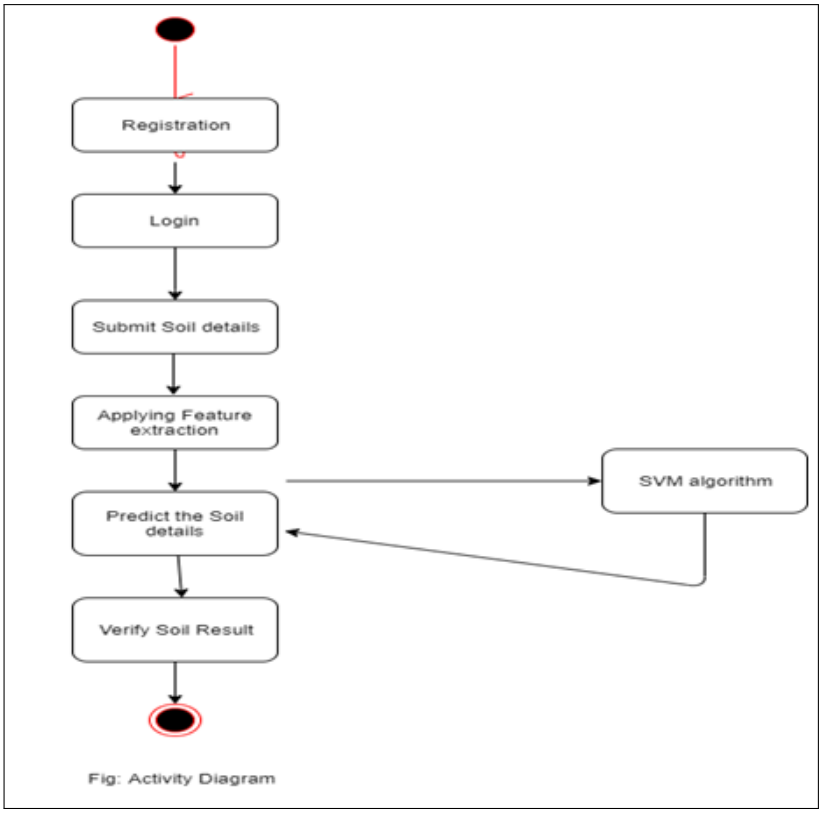

Figure 5.7: Activity Diagram

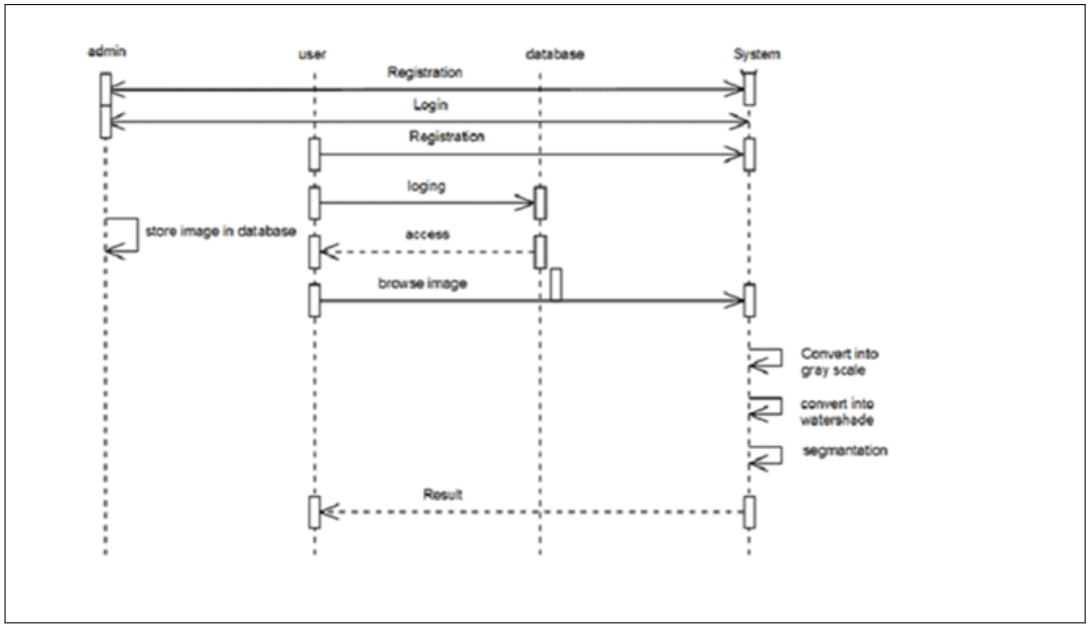

Figure 5.8: Sequence Diagram

CHAPTER 6

SOFTWARE INFORMATION

Python is an interpreted, high-level and general-purpose programming language. Created by Guido van Rossum and first released in 1991, Python's design philosophy emphasizes code readability with its notable use of significant whitespace. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects.

Python is dynamically typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly, procedural), object-oriented, and functional programming. Python is often described as a "batteries included" language due to its comprehensive standard library.

Python was created in the late 1980s as a successor to the ABC language. Python 2.0, released in 2000, introduced features like list comprehensions and a garbage collection system with reference counting.

Python 3.0, released in 2008, was a major revision of the language that is not completely backward-compatible, and much Python 2 code does not run unmodified on Python 3.

The Python 2 language was officially discontinued in 2020 (first planned for 2015), and "Python 2.7.18 is the last Python 2.7 release and therefore the last Python 2 release."[30] No more security patches or other improvements will be released for it. With Python 2's end-of-life, only Python 3.6.x and later are supported.

Python interpreters are available for many operating systems. A global community of programmers develops and maintains CPython, a free and open-source reference implementation. A non-profit organization, the Python Software Foundation, manages and directs resources for Python and CPython development.

Python was conceived in the late 1980s by Guido van Rossum at Centrum Wiskunde Informatica (CWI) in the Netherlands as a successor to the ABC language (itself inspired by SETL), capable of exception handling and interfacing with the Amoeba operating system. Its implementation began in December 1989. Van Rossum shouldered sole responsibility for the project, as the lead developer, until 12 July 2018, when he announced his "permanent vacation" from his responsibilities as Python's Benevolent Dictator For Life, a title the Python community bestowed

upon him to reflect his long-term commitment as the project's chief decision-maker. He now shares his leadership as a member of a five-person steering council. In January 2019, active Python core developers elected Brett Cannon, Nick Coghlan, Barry Warsaw, Carol Willing and Van Rossum to a five-member "Steering Council" to lead the project.

Anaconda: Anaconda is a free and open-source distribution of the Python and R programming languages for scientific computing (data science, machine learning applications, large-scale data processing, predictive analytics, etc.), that aims to simplify package management and deployment. The distribution includes data-science packages suitable for Windows, Linux, and macOS. It is developed and maintained by Anaconda, Inc., which was founded by Peter Wang and Travis Oliphant in 2012. As an Anaconda, Inc. product, it is also known as Anaconda Distribution or Anaconda Individual Edition, while other products from the company are Anaconda Team Edition and Anaconda Enterprise Edition, both of which are not free.

Package versions in Anaconda are managed by the package management system conda. This package manager was spun out as a separate open-source package as it ended up being useful on its own and for other things than Python. There is also a small, bootstrap version of Anaconda called Miniconda, which includes only conda, Python, the packages they depend on, and a small number of other packages. Anaconda distribution comes with over 250 packages automatically installed, and over 7,500 additional open-source packages can be installed from PyPI as well as the conda package and virtual environment manager. It also includes a GUI, Anaconda Navigator, as a graphical alternative to the command line interface (CLI).

The big difference between conda and the pip package manager is in how package dependencies are managed, which is a significant challenge for Python data science and the reason conda exists.

When pip installs a package, it automatically installs any dependent Python packages without checking if these conflict with previously installed packages[citation needed]. It will install a package and any of its dependencies regardless of the state of the existing installation[citation needed]. Because of this, a user with a working installation of, for example, Google Tensorflow, can find that it stops working having used pip to install a different package that requires a different version of the dependent numpy library than the one used by Tensorflow. In some cases, the package may appear to work but produce different results in detail.

In contrast, conda analyses the current environment including everything currently installed, and, together with any version limitations specified (e.g. the user

may wish to have Tensorflow version 2,0 or higher), works out how to install a compatible set of dependencies, and shows a warning if this cannot be done.

Open source packages can be individually installed from the Anaconda repository, Anaconda Cloud (anaconda.org), or the user's own private repository or mirror, using the conda install command. Anaconda, Inc. compiles and builds the packages available in the Anaconda repository itself, and provides binaries for Windows 32/64 bit, Linux 64 bit and MacOS 64-bit. Anything available on PyPI may be installed into a conda environment using pip, and conda will keep track of what it has installed itself and what pip has installed.

Custom packages can be made using the conda build command, and can be shared with others by uploading them to Anaconda Cloud, PyPI or other repositories.

The default installation of Anaconda2 includes Python 2.7 and Anaconda3 includes Python 3.7. However, it is possible to create new environments that include any version of Python packaged with conda

CHAPTER 7

PROJECT PLAN

In this chapter we are going to have an overview about how much time does it took to complete each task like- Preliminray Survey Introduction and Problem Statement, Literature Survey, Project Statement, Software Requirement and Specification, System Design, Partial Report Submission, Architecture Design, Implementation, Deployment, Testing, Paper Publish, Report Submission and etcetera. This chapter also gives focus on stakeholder list which gives information about project type, customer of the proposed system, user and project member who developed the system.

7.1 STAKEHOLDER LIST

7.2 SYSTEM IMPLEMENTATION PLAN

The System Implementation plan table, shows the overall schedule of tasks compilation and time duration required for each task.

Sr. No.	Name/Title	Start Date	End Date
1	Preliminary Survey		
2	Introduction and Problem Statement		
3	Literature Survey		
4	Project Statement		
5	Software Requirement And Specification		
6	System Design		
7	Partial Report Submission		
8	Architecture Design		
9	Implementation		
10	Deployement		
11	Testing		
12	Paper Publish		
13	Report Submission		

CHAPTER 8

ALGORITHM/PSEUDO CODE

8.1 SUPPORT VECTOR MACHINE(SVM)

Support Vector Machine or SVM is one of the most popular Supervised Learning algorithms, which is used for Classification as well as Regression problems. However, primarily, it is used for Classification problems in Machine Learning.

The goal of the SVM algorithm is to create the best line or decision boundary that can segregate n-dimensional space into classes so that we can easily put the new data point in the correct category in the future. This best decision boundary is called a hyperplane.

SVM chooses the extreme points/vectors that help in creating the hyperplane. These extreme cases are called as support vectors, and hence algorithm is termed as Support Vector Machine.

Nitrogen$_{L}evel = tk.IntVar()$

$Phosphorus_{L}evel = tk.IntVar()$

$Potassium_{L}evel = tk.IntVar()$

$temperature = tk.IntVar()$

$humidity = tk.IntVar()$

$ph = tk.IntVar()$

$rainfall = tk.IntVar()$

def Detect():

e1=Nitrogen$_{L}evel.get()$

$print(e1)$

$e2 = Phosphorus_{L}evel.get()$

$print(e2)$

$e3 = Potassium_{L}evel.get()$

$print(e3)$

$e4 = temperature.get()$

$print(e4)$

$e5 = humidity.get()$

$print(e5)$

$e6 = ph.get()$

$print(e6)$

$e7 = rainfall.get()$

$print(e7)$

```
        from joblib import dump , load
a1=load('D:/Gauri data/Gauri data/100 v= a1.predict([[e1, e2, e3, e4, e5, e6, e7]])
print(v)

        if v[0]=='rice':
print("rice")
yes = tk.Label(root,text="rice",background="red",foreground="white",font=('times',
20, ' bold '),width=15)
yes.place(x=500,y=500)

        elif v[0]=='maize':
print("maize")
no = tk.Label(root, text="maize", background="green", foreground="white",font=('times',
20, ' bold '),width=15)
no.place(x=500, y=500)

        elif v[0]=='chickpea':
print("chickpea")
no = tk.Label(root, text="chickpea", background="green", foreground="white",font=('times',
20, ' bold '),width=15)
no.place(x=500, y=500)

        elif v[0]=='kidneybeans':
print("kidneybeans")
no = tk.Label(root, text="kidneybeans", background="green", foreground="white",font=('times',
20, ' bold '),width=15)
```

```
no.place(x=500, y=500)

        elif v[0]==’pigeonpeas’:
print(”pigeonpeas”)
no = tk.Label(root,text=”pigeonpeas”,background=”red”,foreground=”white”,font=(’times’,
20, ’ bold ’),width=20)
no.place(x=500,y=500)

        elif v[0]==’mothbeans’:
print(”mothbeans”)
yes = tk.Label(root,text=”mothbeans”,background=”red”,foreground=”white”,font=(’times’,
20, ’ bold ’),width=20)
yes.place(x=500,y=500)

        elif v[0]==’mungbean’:
print(”mungbean”)
yes = tk.Label(root,text=”mungbean”,background=”red”,foreground=”white”,font=(’times’,
20, ’ bold ’),width=20)
yes.place(x=500,y=500)

        elif v[0]==’blackgram’:
print(”blackgram”)
yes = tk.Label(root,text=”blackgram”,background=”red”,foreground=”white”,font=(’times’,
20, ’ bold ’),width=20)
yes.place(x=500,y=500)
```

CHAPTER 9

RESULT ANALYSIS

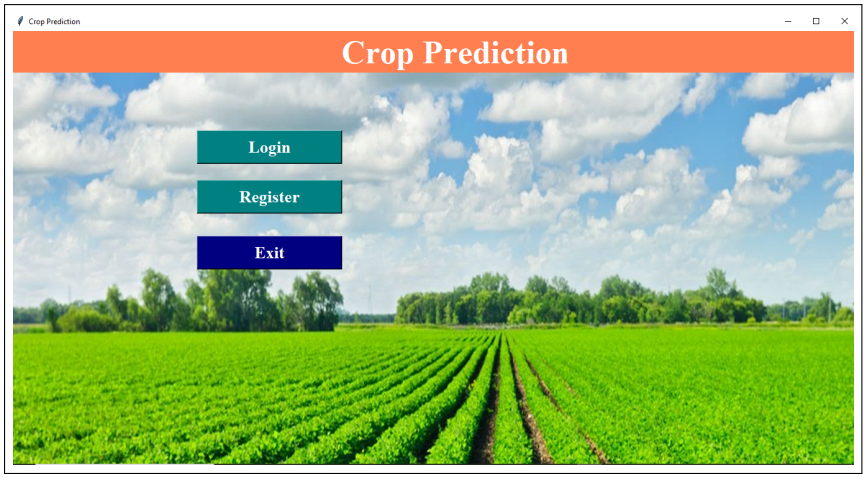

Figure 9.1: Main Page

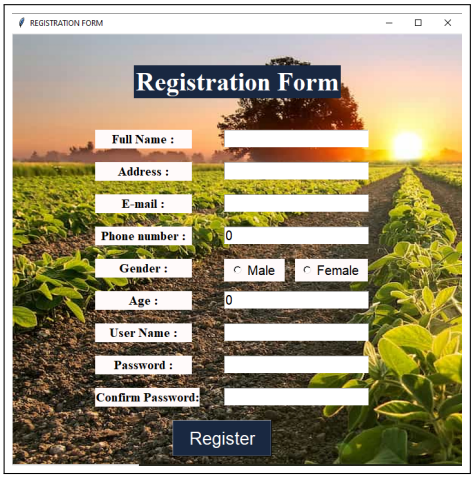

Figure 9.2: Registration Page

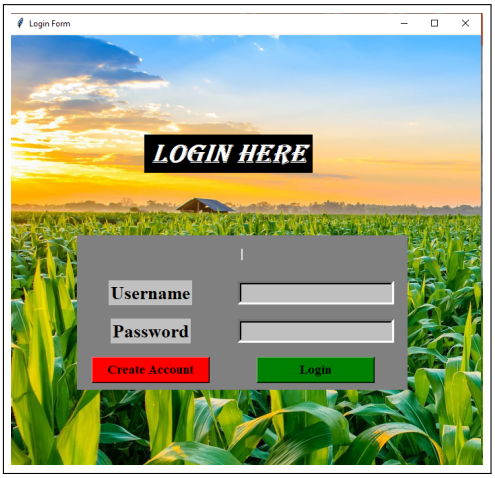

Figure 9.3: Login Page

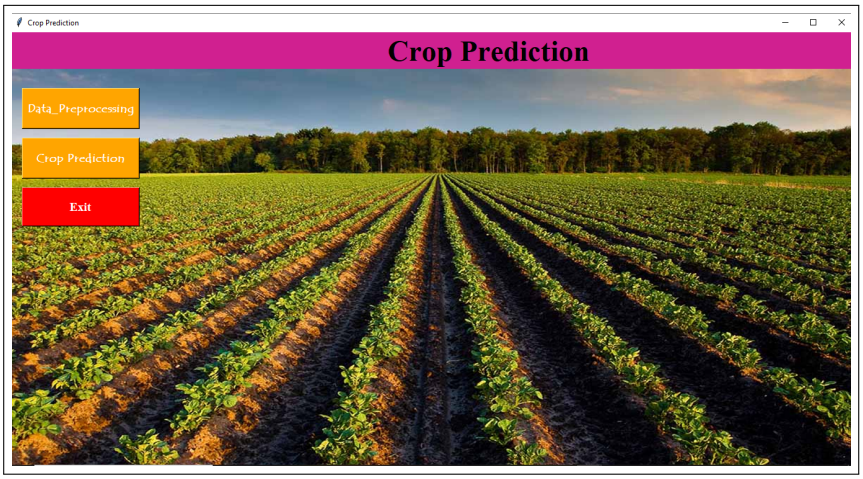

Figure 9.4: Master Page

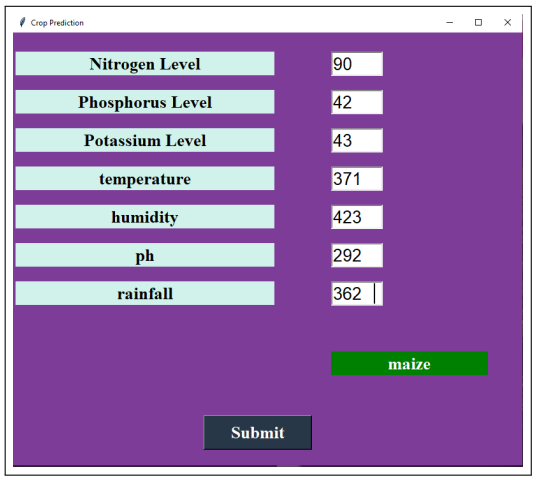

Figure 9.5: Prediction Page

CHAPTER 10

SYSTEM TESTING

Test Case ID	Test Case	Test Case I/P	Actual Result	Expected Result
001	Username or password	Error comes	Error Should	p
002	Username or password	Accept	Accept	p

Figure 10.1: Login Test Case

Test Case ID	Test Case	Test Case I/P	Actual Result	Expected Result	Test case
001	Enter the number in username ,middle name,last name,filed	Number	Error Comes	Error Should	p
001	Enter the Character in username ,middle name,last name,filed	Character	Accept	Accepts	p
002	Enter the invalid E-mail id format in e-mail id field	Kkgmail,com	Error Comes	Error Should	p
002	Enter the valid email id format in email id field	kk@gmail.com	Accepts	Accepts	p
003	Enter the invalid digit no in phone no field	99999	Error Comes	Error Should	p
003	Enter the 10 digit no in phone no field	9999999999	Accepts	Accepts	p

Figure 10.2: Registration Test Case

Test Case ID	Test Case	Test Case I/P	Actual Result	Expected Result	Test case criteria(P/F)
001	Store Xml File	Xml file	Xml file store	Error Should	p
002	Parse the xml file for conversion	parsing	File get parse	Accept	p
003	Attribute identification	Check individual Attribute	Identify Attributes	Accepted	p
004	Weight Analysis	Check Weight	Analyze Weight of individual Attribute	Accepted	p
005	Tree formation	Form them-Tree	Formation	Accepted	p
006	Cluster Evaluation	Check Evaluation	Should check Cluster	Accepted	p
007	Algorithm Performance	Check Evaluation	Should work Algorithm Properly	Accepted	p
008	Query Formation	Check Query Correction	Should check Query	Accepted	p

Figure 10.3: System Test Case

CHAPTER 11

CONCLUSION

11.1 CONCLUSION

Agriculture is the field which helps in economic growth of our country. But this is lacking behind in using new technologies of machine learning. Hence our farmers should know all the new technologies of machine learning and other new techniques. These techniques help in getting maximum yield of crops. Many techniques of machine learning are applied on agriculture to improve yield rate of crops. These techniques also help in solving problems of agriculture. We can also get the accuracy of yield by checking for different methods. Hence we can improve the performance by checking the accuracy between differentcrops.

CHAPTER 12

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