# ANALYSIS BASED ON DISCIPLINARY MANAGEMENT SYSTEM

A Project Report

Submitted in partial fulfilment of the requirements for

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Of

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**November, 2019**


# DECLARATION

The Project Report entitled **"ANALYSIS BASED ON DISCIPLINARY MANAGEMENT SYSTEM"** is a record of bonafide work of A.PAVAN KUMAR (160030081) to the K L University. The results embodied in this report have not been copied from any other departments/University/Institute. It is submitted in partial fulfilment for the award of Bachelor of Technology in Computer Science and Engineering during the academic year 2019-2020.

We also declare that this report is of our own effort and it has not been submitted to any other university for the award of any degree.

Place: Vaddeswaram

Signature of the Student

Date:

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# CERTIFICATE

This is certify that this project work entitled "**Project on ANALYSIS BASED ON DISCIPLINARY MANAGEMENT SYSTEM"** is being submitted by A.PAVAN KUMAR (160030081) submitted in partial fulfilment for the award of degree in **BACHELOR OF TECHNOLOGY** in **COMPUTER SCIENCE AND ENGINEERING** during the academic year 2019-2020.

The results embodied in this report have not been copied from any other departments/university/institute.

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# ABSTRACT

The thought behind the task is to create the notice concerning the grumblings on totally unique contextual analyses like expulsion of I’d card, conveying of portable phones, no right code, for young men the code ought to have the fold and shoes, there shouldn't be any clumsy conduct with others. These objections are enlisted by the disciplinary council individuals, those grievances are seen by the committee of the boards like understudy issues, senior member lecturers. Complaint Management System gives a web approach of goals the issues really young looking by the researchers by sparing time.

The focus of the protests the board framework is to shape grumblings simpler to arrange, screen, track and resolve, and to deliver organization with a productive instrument to spot and target drawback regions, screen grievances dealing with execution and manufacture business improvements.

A complaint Management could be an administration method for surveying, dissecting and reacting to student complaints. Complaints the executives PC code is utilized to record resolve and answer to student protests, demands also as encourage the other criticism

The current strategy is ,at whatever point school was related understudy with an ill-advised code at any motivation behind your time among the personnel field then there will be a privilege to require the genuine understudy's I’d card or for the most part they're going to take that individual understudy to the individual specialists.

The individual specialists can construct the researcher to scribble down a letter or at times like portable they will not give from two to seven days and that they whole in their underneath controlled storage spaces any place a few understudies handover ed once the region unit held

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# CHAPTER 1

# INTRODUCTION

Now a day, educational systems also well developing their usage of many technologies to interact more with different kinds of students based on their interests. Institutions must maintain their peculiar discipline and ethics on each of their work from both from the student's side as well as faculty side to move ahead in the society. While coming to students in the college/ institution they must possess and carry their the particulars to enter like identity card, must attain in the formal dress code for both boys and girls (including shoes, tuck for boys), not to carry any electronic gadgets I,e. mobiles.

Nowadays, people can connect, exchange information, and collaborate globally through websites, email, instant messaging systems, social networking sites and other internet-based communication systems easily.

The innovation of technology has revolutionized in such a way like to reach a wide range of students and serve them efficiently and effectively.the "Information technology is one of the most important tool that manages the business oriented process with new information systems to create and clarify the problems of students and also for the educational institutions also.

As the development of information technology and Internet is moving rapidly these days, there are always new opportunities arising for servicing, then it will be easy to resolve any complaints from students or faculty by the administrative department. It takes very less time to reach to the students about their complaint. In existing process the result will be delayed to reach to the respective student. More over the administrative department or discipline committee members will not require huge amount of books. Everything will be noted in a system.

Our project mainly focuses on analysis of the student discipline in the institution in current generation. In order for us to accomplish this we have taken the data from the discipline committee members and also created a link for taking the data from the students and also faculty. This survey conducted with in our college itself. In order to make our process much simpler we were able to use **R-programming** for the analysis of all of our Data.

'**R**' is open source free software which was developed in 1993 for statistical computing and graphics. It is one of the most used software's by data analysts as well as data miners so that they can develop statistical software's. '**R**' is a language that comes with many inbuilt libraries that can be used in various scenarios. However this language is well known for the following algorithms; Linear regression, Logistic regression, Decision tree, SVM, Naïve Bayes, KNN, K-means, and Random Forest. There are many kinds of algorithms for different analytical analyzations used by different users. Here we have implemented 'R' within our project to analyse all of our data set both in graphical format as well as prediction of the output. It was also able to plot all of the data using its in-built graphical libraries with in the R environment.

# CHAPTER 2
# LITERATURE SURVEY

## 2.1 SMART COMPLAINT MANAGEMENT SYSTEM

Any kind of query is an act of discomfort with a product or service by some consumers. The report may also be both written and verbal to a responsible person. Student Complaint Management that affects the level of student satisfaction, too many companies typically has a complaint handling system to optimize student satisfaction. Complaint management system is a collection of processes used in organisations to address grievances and resolve problems. The dispute treatment processes[1].

In this paper we understood that the way how the online complaint management will execute taking the complaint from the end users, here the end users will be students, disciplinary committee members or sometimes others too .The data that is received from the end user's response will be considered as a dataset and perform classification, regression and other required techniques based upon the user's perspective.[1]

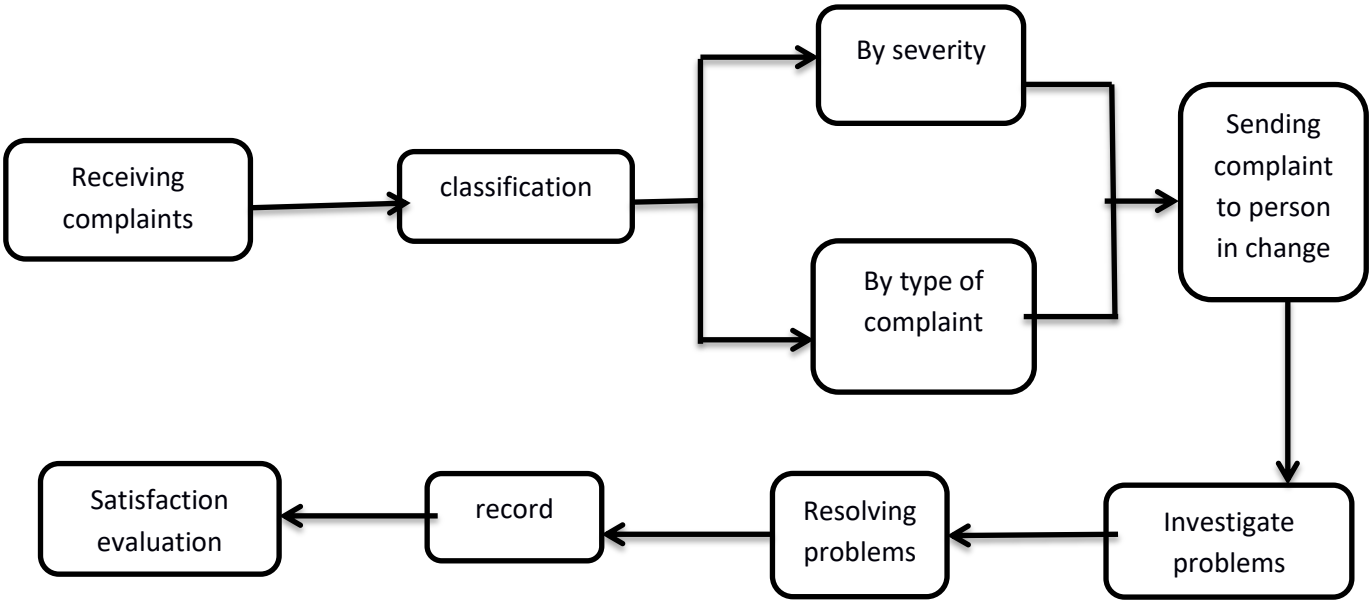


FIG 2.1 complaint management system

## 2.2 IMPROVING USER COMPLAINT MANAGEMENT SYSTEM AND SATISFACTION LEVEL VIA READER-FRIENDLY LINGUISTIC FEATURE

This paper is suggesting about the exploring the various ranges of online platforms to resolve communications response perception. Various companies use different strategies to deal with the complaints of outside their students. Some of the methods used are call centres where students can make their complaints directly through phone call and mailing method where students need to send an email and explain the student's problem. [2]

The steps that are to be implemented

- Login or signup to the website
    - There are 3 types of actions to access the website:
    - Admin
    - Student
    - Disciplinary committee
- Based upon the actions it will be navigated to the respective page.
- The admin can perform all the actions like read,delete,write,modify.
- The student can able to comment about his complaint and he/she can check their fine that is to be paid.
- The disciplinary committee can create and delete the complaint .[2]

## 2.3 THE STUDY OF STUDENT COMPLAINTS MANAGEMENT BASED ON SYSTEM DYNAMICS MODELING AND SIMULATION

Students from other countries students tend to use the online feedback page to communicate their frustration rather than explicitly telling the university management of their issues. The important aspects that have to be taken into consideration that include relating to user complaints, using complaints as a way to learn from failures and enhancing facilities regularly [3].

They collect data via internet and telephone from the college disciplinary committee, students details like id numbers,name,fine amount,complaint type , a relatively highly complaining situation. According to Indian colleges and institutions 'Association figures, mobile phone based complaints every year is increasing rapidly Our data covered about all kinds of student activities that are mishandled by students in any kind of situation.[3]

# CHAPTER 3
# THEORETICAL ANALYSIS

## 3.1 Complaint:

Basically complaint means a statement that something went in the form of unsatisfactory and not able to accept others words and which causes harm either in the form of the disease or any work related things. Complaint is a one form of protest on someone to get some benefits from others which will be helpful to the society. The complaints will be differed from each and every situation will not be same rules that have to be followed. Some of the complaints are

- Public multi-media complaint
- Serial complaint
- First time complaint
- Quality of service related complaints
- Delivery related complaints these complaints we majorly see in our society

But there are some complaints where the educational institutions will be handled .those complaints based on the particular student's behaviour, to live in the society the important and primarily required factor is our character that says about how we are? Now a day's young generation are moving towards the internet life and they are not using their creative minds too and it will be the student's personal but violating the rules of any organisation either in dress code or any mischievous behaviour will leads to the fine and the punishment from the disciplinary committee members.

### 3.1.1 Effects after receiving complaints

Because of complaints he/she will get Punishments. The punishments will be occurred due to some following conditions.

- Not wearing identity card of the particular institutions.
- Not to carry any electronic gadgets except laptop (if the college allows only).
- No right to remove the ruck with in the college premises especially for boys.

- Compulsory must wear shoes in any situation if not the student\students must take the permission from the head of the disciplinary committee.

## 3.2 Process Preview

### 3.2.1 Existing Process

The existing process is ,when ever faculty saw any student with an improper dress code at any point of time within the college campus then there will a right to take the particular student's i'd card or sometimes they will take that particular student to the respective authorities. The respective authorities will make the student to write a letter or in some cases like mobile phone they will not give from 2 to 7 days and they kept in their under controlled lockers where many students handover when they are booked the gadgets even I'd card too.

#### 3.2.1.1 Limitations Of Existing Process

- less efficiency
- More time consumption
- Highly rely on human effort
- Ineffective for large no of complaints
- It does not provide any security about the details who complained

### 3.2.2 Proposed Idea

Creating a website or a google form will be much easy and everyone can post their complaint and also comment for their response to the higher authories & analysis part will be easy by taking the data from the database which will be under controlled by particular institution member. Here student number is unique so that with the help of the student number it is very easy to find no of times that the student was caught by the disciplinary committee members. By taking that data we are performing the machine learning techniques like firstly we used Naïve Bayes algorithm where it deals with the posteriori probability, secondly we used Plotting Techniques like box plot, ggplot2, histogram, finally at last we used the DataExplorer for generating the report in the form of all the missing value graphs, getting graphs for memory storage etc.

The technologies that are used in our project are

- Servlets
- JSP
- Machine learning using R programming

The algorithms that are used in R

1. Naive Bayes
2. Plotting techniques
3. DataExplorer

**Machine learning:** Machine learning automates the learning and also improves the experience of the data without considering any algorithm.

Mainly in machine learning, the data will be divided into 3 types they are

1. Supervised learning
2. Unsupervised learning
3. Reinforcement Learning

**Supervised Learning**: The data in the training set must be labelled and also the data must be supervised under the teacher.

The data will be divides into regression, classification based on the algorithms that we are used.

The algorithms in supervised learning are Nearest Neighbor, Naive Bayes, Decision Trees, Linear Regression, Support Vector Machines (SVM) and Neural Networks

**Unsupervised Learning:** The data in the training set must not contain any label and also the data need not be unsupervised under any kind of teacher.

The data will be divides into clustering, association based on the algorithms that we are used.

The algorithms in unsupervised learning are k-means clustering, Association Rules

**Reinforcement Learning:** It is the combination of the artificial intelligence, based on rules the data will be separated and also with the absence of the training dataset, the data will have

the past experience and it will able to learn the set of actions, observations too. It is able to interact with the environment while data is pre-processed.

#### 3.2.2.1 SERVLETS

Servlet Technology is used to create web applications. Servlet technology uses Java language to create web applications. Web applications are helper applications that reside at web server and build dynamic web pages. A dynamic page could be anything like a page that randomly chooses picture to display or even a page that displays the current time. As Servlet Technology uses Java, web applications made using Servlet are Secured, Scalable and Robust.

#### 3.2.2.2 JSP

JSP stands for Java Server Pages. It is a client to server or server to client technology. It is used for creating dynamic web application and also used for creating the dynamic web content to access any kind of programming language. These JSP tags are used to insert JAVA code into HTML pages or directly we can write the jsp code into the tags. It is also an advancement version of Servlets. It is a Web oriented technology that helps us to create dynamic and platform independent web pages. In this, Java code can be inserted in any web based languages like HTML/ XML pages or both. Initially JSP converts into servlet by JSP container before processing the client's request. JSP handles the problem from the bi direction manner. Instead of embedding HTML in programming code, JSP lets you embed scripted code into HTML pages. Java is the default scripting language of JSP, but the JSP specification allows for other languages as well, such as JavaScript, Perl, and VBScript.[4]

#### 3.2.2.3 R PROGRAMMING

R is a language of programming developed in 1993 by Ross Ihaka and Robert Gentleman. R has a robust numerical and visual system collection. This contains algorithm for machine learning, linear regression, time series, numerical inference to name only a few. Most R libraries are written in R, but C, C++ and Fortran codes are used for heavy computational functions.

R used for Statistical inference, Data analysis, Machine learning algorithm. And it able to communicate with the Integrate codes, graphs, and outputs to a report with R Markdown or build Shiny apps to share with the world

The machine learning algorithms are

1. Naive Bayes Classification
2. Plotting Techniques
3. Data Explorer

**3.2.2.3.1 Naive Bayes Algorithm**

Naive Bayes is a Bayes Theorem-based Supervised Machine Learning algorithm that uses a probabilistic approach to solve classification problems. It is based on the idea that the predictor variables are independent of each other in a Machine Learning system. This implies that a model's outcome depends on a number of independent variables which have nothing to do with each other.

The principle behind Naive Bayes is the Bayes theorem also known as the Bayes Rule. The Bayes theorem is used to calculate the conditional probability,

$$P( A \mid B ) = (P ( B \mid A) \ P(A)) / P(B)$$

[6]Here for naïve Bayes the package **"e1071"** is used. "e1071" is the conditional a-posterior probability of the categorical class variable(attribute name) ,here can mention the threshold values, the values are of 2 types

1. apriori it is a dependent variable

2. tables it generates or stores the mean ,standard deviation for each target class for each categorical variable

**3.2.2.3.2 Plotting Techniques:-**

We look at some of the ways in which R can graphically display information. This is a brief guide to some of the basic commands for plotting. It is assumed that you know how to enter data or read data files which is covered in the first chapter, and it is assumed that you are familiar with the different data types.

1. Histogram
2. Boxplot
3. Pie-chart

**HISTOGRAM:-**

Histogram is a simple plotting graph. It maps the frequencies within certain ranges the data exists. Here we give examples using the data frame w1 described at the top of this page, and w1$vals is the one column of data.

> hist(w1$vals)

> hist(w1$vals,main="Distribution of w1",xlab="w1")

**BOXPLOT:-**

A boxplot provides a visual view of a data set's mean, quartile, average, and low. Using two different data sets, we give explanations here. The first is the data frame w1 listed at the top of this page, and w1$vals is the one column of data. The second is the tree data frame from the data file trees91.csv that is also mentioned at the top of the page.

> boxplot(w1$vals)

**PIE-CHART:-**

To construct charts and graphs, R programming language has various libraries. A pie chart is a representation of values of different colors as slices of a ring. The slices are numbered and the map also displays the numbers relating to each slice.

The pie chart is created in R using the pie) (function that takes positive numbers as an input of the vector. To control labels, color, title etc., the additional parameters are used.

>pie(x, labels, radius, main, col, clockwise)

**3.2.2.3.3 Data Explorer**

The data explorer having 3 main themes they are data reporting, exploratory data analysis and feature engineering.

Data Explorer is used to simplify and automate the Exploratory Data Analysis (I,e. it can be able to validate any assumptions that are present in the dataset ) . The data explorer will be processed in the way of analysing the data and building the model in the pictographically.

Here in data explorer there will not be any statistical approach, the process will be repeated until the dataset should not contain any outliers, null values and missing values within the dataset.

The functions that are present in the data explorer are

- Package name **"Data Explorer"**
- **Plot_str("reference_string")** it gives result what are the attributes that are present
- **Create_report("reference_string")** here by using this command we are able to generate a report to see complete data
- **Plot_missing("reference _string")** it displays where the missing values are present in the dataset
- **Introduce("reference_string")** it shows output as the attribute names with the row count
- **Plot_intro("reference_string")** it shows the graph with the attributes, rows and their frequencies of the storage capacity

# CHAPTER 4
# METHODOLOGY

## 4.1 Naïve Bayes Classification:

Naïve Bayes is a simple, yet effective and commonly-used, machine learning classifier. **Naïve Bayes** classifiers are nothing more then set of algorithms that are based upon Bayes Theorems. It works on the principle stating that each and every feature is independent from the rest. One of the most common forms of using Naïve Bayes classifiers has been text classification. This method of classification is also an traditional solution for problems such as spam detection. Let's take a look at the algorithm that we will be using within our program….

***P(A/B)= (P(B/A).P(A))/P(B)***

**Implementation of Naïve Bayes Classification:**

The first important step in our process is to look upon the data we have at hand. Once we have successfully inputted our data into our program we will run the **mydata** function so that we can access our dataset. when we run this function it will provide the following metadata.

The next important step to perform upon our dataset is to provide it with a proper structure so that it a can be easily deal with. This not only provides us with a structure but it also provides us with a view how it works, in such a way calculating the posterior probability by using likelihood, attribute prior probability and also by past prior probability.[6]

### 4.2 DataExplorer

For data Explorer exploratory data analysis will work on background side to predict the results based on the dataexplorer functions it will display entire data set into structure format by making attributes in the form of leaf nodes for the tree, it will create a report based on the attributes that are used and also generates plotting in the form of histograms ,bar chats, correlations and percentages of memory usage for the data.

**4.3 FLOWCHART:-**

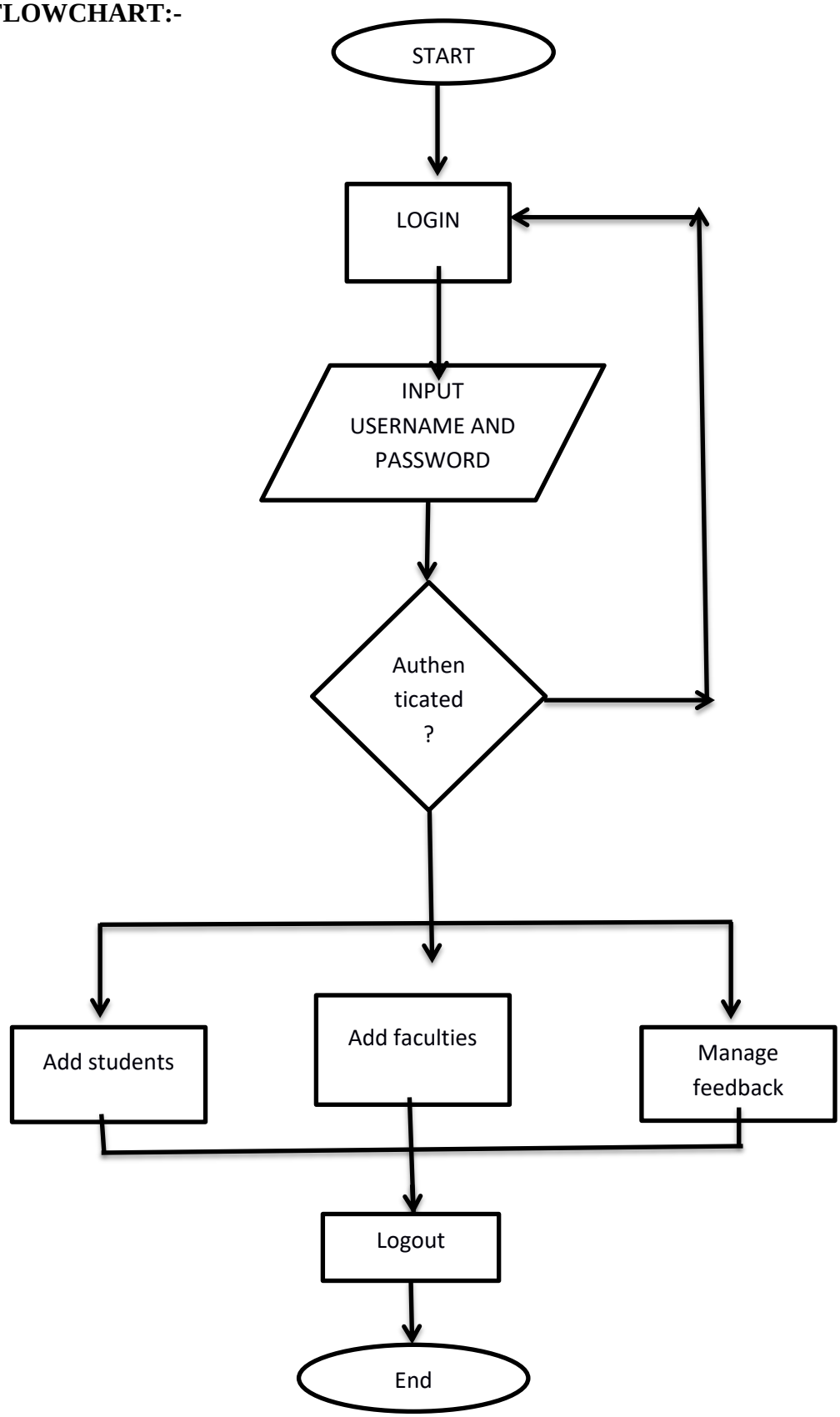


Fig 4.3 flow chart for website login

# CHAPTER 5

# EXPERIMENTAL INVESTIGATION

## 5.1 R PROGRAMMING

In order to make our process much simpler we were able to use **R-programming** for the analysis of all of our Data.

'**R**' is open world software which was developed in 1993 for statistical computing and graphics. It is one of the most used software's by data analysts as well as data miners so that they can develop statistical software's. '**R**' is a language that comes with many inbuilt libraries that can be used in various scenarios. However this language is well known for the following algorithms; Linear regression, Logistic regression, Decision tree, SVM, Naïve Bayes, KNN, K-means, and Random Forest. These may only be a few of its main algorithms but they are most used by many of its users. We have implemented '**R**' within our project to analyse all of our data sets from our survey. It was also able to clearly plot all of our data using its in-built graphical libraries.

Our project focused on 3 major stages. The first stage consisted of us gathering the required Data for our Study. The next two consist of us importing the collected data into our program and having it analysed. Once we have successfully analysed our data we should be able to implement the various libraries within '**R'** so that we can also have statistical graphs drawn for a visual representation. Let's take a closer look at each step in our process.

### 5.1.1 Collection of Data:

Creating a link for getting data for our project and connecting that particular link front end to the any database like mysql, oracle etc. From the students /faculty the data that what they entered will be stored from there the csv file.

### 5.1.2 Importing our Meta-Data:

The most important step in any process is gathering all of our pre-requirements. In this stage we must import 2 of the most important requirements into our program, the data along with the required libraries for analysis.

### 5.1.3 Importing our Data:

We will be implementing our project with the help of ' R '. In order for us to implement all our Data-sets which are stored in a single excel sheet into our program we must undergo the following procedure. The most important part is making sure that our sheet is properly saved in the folder of our wish. From here on out we will use the setwd() inbuilt within ' R ' so that we can set the path to the folder in which our sheet is saved in. For you to get a clear and easy understanding, let's suppose that we have saved our sheet on my desktop. In such a scenario we will use the following command.

*setwd("C:/Users/mylaptop/Desktop")*

Once we have used the setwd() function in ' R ' the path will be properly set to the designated folder. The next step involves selecting our data sheet so that our program can further access it for future analysis. To do this we will be using the inbuilt read.csv() function. This function however will return our file to have it stored in the form of a vector. To do this we must first declare a variable and then read our sheet into it. Since we are talking about the eating habits of people we've taken our variable as food. Let's take a look at how to read our sheet into our variable food…

### 5.1.4 Importing Required Libraries:

In order for us to further access the many tools within '**R**' we will have to first import the required libraries. One of the most important Libraries in '**R**' is Data Explorer. In order for us to do this we will run the following command…

*library(*Name of Package*)*

*library(e1071)*

*library(DataExplorer)*

This is one of the most important and widely used packages in **'R'** as it permits us to statistically analyse our data in many different methods.

It provides us many different functions that allow us to study the structure of our data as well as the variety of data collected. Further functions provided in this library permit us to plot the statistical analysis of our data in many different formats. The analysis of data is completely flexible with the desires of the user and can provide very accurate values and details.

## 5.2 Analysis & Presentation of our Data:

Now that we have imported all of the required data into our program we can now begin the process to begin its analysis. This step our process will not only contribute in studying the data but we will also look much deeper into how accurate as well as how volatile our data sets are.

### 5.2.1 Analysis:

One of the most important prerequisites of data analysis is to learn the accuracy as well as the completeness of our data-set. For us to do this we will use two important functions that are embedded in the *Data Explorer* package. The first function that we will be using is to learn about the structure of our Data-set. This displays all the questions asked in the form of nodes in a tree. All the questions that are represented as nodes are all connected to the root node which holds the integral structure of our tree. In order for us to identify the structure we will be using the following command in **'R '**.

**plot_str(data)**

Once we have established the structure of Data-Set we must also check to see how complete it is. In a survey people may sometimes chose to leave a few of the questions. In such a case our Data-set will not be a whole as there will be Null data. Hence before we can begin our analysis we must first try to understand if our Data-set consists of missing data. In order to do this we will perform the following command in **' R '**.

**plot_missing(data)**

### 5.2.2 Visual Representation of Data Analysis

Now that we have verified our data it is time we begin our analysis. We can now plot our Dataset using the following command…

*plot_bar(data)*

The output of this command will create a bar-graph for every question that we had our group of students answer. It will begin to analyse who chose what answers and will also provide you with accurate percentages for each option that is available to select.

Using the plot function we can create multiple graphs of our choice. However instead of going through this whole process step by step we can use a single command which will help us complete all the precious steps in a much more fast and efficient manner. Report() is a function embedded within the Data-Explorer Package which completes all the previous steps that we have discussed about. It will make a complete analysis of our data which also includes the space/storage taken up by our Data-set and it also further counts the number of rows as well as columns. There are two more added functions to our report. It will also generate the ***Correlational Analysis*** along with the ***Principle Component Analysis***. We will further look into the features of these two further later on. The Report for our Data-Set can be generated using the following line…

*create_report(data)*

### 5.2.3 Packages used:

***Library (e1071):***

This is an important library that we must include as it holds the ***Naïve Bayes Classifier*** within it. Without this library we cannot analyse our data further to calculate which app most people felt most secure

***library (DataExplorer):***

This is one of the most important and widely used packages in **'R '** as it permits us to statistically analyse our data in many different methods.

## 5.3 Data Pre-processing:

Quality decisions must be based on quality data, Data warehouse needs consistent integration of quality data, Data extraction, cleaning, and transformation comprises the majority of the work of building a data warehouse

### 5.3.1 Tasks in Data Pre-processing:

The major steps involved in data pre-processing, namely, data cleaning, data integration, data reduction, and data transformation.

### 5.3.1.1 Data cleaning:

**Data:**

Firstly, we should consider the proper data with proper attributes for using it or to fit for the prediction purpose. The useful attributes by which we can predict we need to consider all of that attributes and we need the correct outcome for that attributes we consider.

Data cleaning is the process of detecting and correcting corrupt or inaccurate records from a record set, table, or database and refers to identifying incomplete, incorrect, inaccurate or irrelevant parts of the data and then replacing, modifying, or deleting the dirty. Data cleaning may be performed with data. It provides us many different functions that allow us to study the structure of our data as well as the variety of data collected. Further functions provided in this library permit us to plot the statistical analysis of our data in many different formats. The analysis of data is completely flexible with the desires of the user and can provide very accurate values and details.

### 5.3.1.2 Data Pre-processing:

Data have quality if they satisfy the requirements of the intended use. There are many factors comprising data quality, including accuracy, completeness, consistency, timeliness, believability, and interpretability. Detain the real world is dirty incomplete: lacking attribute values, lacking certain attributes of interest, or containing only aggregate data, incomplete data may come from, “Not applicable” data value when collected, Different considerations between the time when the data was collected and when it is analysed. Human/hardware/software problems

e.g., occupation= “”

**Noisy:**

Containing errors or outliers Noisy data it means incorrect values may come from Faulty data collection instruments, Human or computer data entry, Errors in data transmission.

**Inconsistent:**

Containing discrepancies in codesor names, Inconsistentdata maycomefrom, Differentdatasources, Functionaldependency violation (e.g., modify some linked data) Duplicate records also need data cleaning.

**Data integration:**

Data integration involves combining data residing in different sources and providing users with a unified view of them. This process becomes significant in a variety of situations, which include both commercial and scientific domains. Data integration appears with increasing frequency as the volume and the need to share existing data explodes. It has become the focus of extensive theoretical work, and numerous open problems remain unsolved.

**Missing Data:**

Data will not always available for each and every attribute and the records in the table ,if there are any missing values for numerical type data the all values in the particular column will be calculated for mean and filling that particular cell with that mean value.

Missing data occurs due to following reasons

1. Equipment malfunction(like Auto correction).
2. inconsistent with other recorded data and thus deleted.
3. Data not entered due to misunderstanding by the manual entry of the person.
4. Not entering the certain data which is as considered as not so important at the time of entry.
5. Not registering the history whenever the changes of the data.

## 5.3.2 Handling the data

### 5.3.2.1 Handle Missing Data:

Ignore the tuple: usually done when class label is missing (assuming the tasking classification—not effective when the percentage of missing values per attribute varies considerably.

1. Fill in the missing value manually: tedious+ infeasible?
2. Fill in it automatically with

I. Global constant: e.g., “unknown”, anew class?

II. The attribute mean

III. The attribute mean for all samples belonging to the same class: smarter

IV. the most probable value: inference-based such as Bayesian formula or decision tree.

**5.3.2.2 Handling Noisy Data:**

- Binning

First sort data and partition into (equal-frequency) bins

Second smooth by bin means, smooth by bin median, smooth by bin boundaries, etc.

- Regression

Smooth by fitting the data into regression functions

## 5.4 Data representation:

Data representation plays a crucial role on the performance of our algorithm, "especially for the applications in real world." The data should be represented in CSV formats fit for all the machine learning technique we use.

# CHAPTER 6

## EXPERIMENTAL RESULTS:-

### 6.1 Servlets And JSP code

#### 6.1.1 LOGIN PAGE:

<linkhref="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"rel="stylesheet"id="bootstrap-css">

<scriptsrc="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>

<scriptsrc="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>[5]

<!------ Include the above in your HEAD tag ---------->

<!DOCTYPEhtml>

<html>

<head>

<title>LoginPage</title>

linkrel="stylesheet"href="https://stackpath.bootstrapcdn.com/bootstrap/4.1.3/css/bootstrap.min.css"integrity="sha384-MCw98/SFnGE8fJT3GXwEOngsV7Zt27NXFoaoApmYm81iuXoPkFOJwJ8ERdknLPMO"crossorigin="anonymous">

<linkrel="stylesheet"href="https://use.fontawesome.com/releases/v5.3.1/css/all.css"integrity="sha384-mzrmE5qonljUremFsqc01SB46JvROS7bZs3IO2EmfFsd15uHvIt+Y8vEf7N7fWAU"crossorigin="anonymous">

<!--Custom styles-->

<linkrel="stylesheet"type="text/css"href="styles.css"></head>

<body>

```
<divclass="container">
        <divclass="d-flex justify-content-center h-100">
                <divclass="card">
                        <divclass="card-header">
                                <h3>DC <br>Sign In</h3>
<divclass="d-flex justify-content-end social_icon">
<span><iclass="fab fa-facebook-square"></i></span>
<span><iclass="fab fa-google-plus-square"></i></span>
<span><iclass="fab fa-twitter-square"></i></span>
</div> </div>
                                <divclass="card-body">
<formaction="login.jsp"method="post">
                                        <divclass="input-group form-group">
                                                <divclass="input-group-
prepend">
                                                        <spanclass="input-group-
text"><iclass="fas fa-user"></i></span></div>
<inputtype="text"class="formcontrol"placeholder="username"name="username"required></
div>
<divclass="input-group form-group">
<divclass="input-group-prepend">
<spanclass="input-group-text"><iclass="fas fa-key"></i></span></div>
```

<inputtype="password"class="formcontrol"placeholder="password"name="password"requir
ed> 

<divclass="box">

<label>

<inputtype="radio"name="like"value="admin">

Admin

</label>

<label>

<inputtype="radio"name="like"value="user">

User

</label>

<label>

<inputtype="radio"name="like"value="student">

Student</label>

<divclass="form-group">

<inputtype="submit"value="Login"class="btn float-right login_btn"> </form> 

<divclass="card-footer">

<divclass="d-flex justify-content-center">

<ahref="Registration.jsp">New User?</a>

</body>

</html>

**6.1.2 CREATING COMPLAINT:**

<!doctypehtml>

<htmllang="*en*">

<head>

<metacharset="*utf-8*">

<metahttp-equiv="*X-UA-Compatible*"content="*IE=edge*">

<metaname="*viewport*"content="*width=device-width, initial-scale=1*">

<!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->

<title>DC Management</title>

<!-- Bootstrap -->

<linkrel="*stylesheet*"href="*https://stackpath.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css*"integrity="*sha384-HSMxcRTRxnN+Bdg0JdbxYKrThecOKuH5zCYotlSAcp1+c8xmyTe9GYg1l9a69psu*"crossorigin="*anonymous*">

<linkrel="*stylesheet*"type="*text/css*"href="*default.css*">

</head>

<body>

<divclass="*container-fluid display-table*">

<divclass="*row display-table-row*">

<divclass="*col-md-2  col-sm-1 hidden-xs display-table-cell valign-top*"id="*side-menu*">

<h1class="*hidden-xs hidden-sm*">Navigator</h1>

```
<ul>
<liclass="link ">
<ahref="main.jsp">
<spanclass="glyphiconglyphicon-th"></span>
<spanclass="hidden-sm hidden-xs">Dashboard</span>
</a></li>
<liclass="link active">
<ahref="#collapse-post"data-toggle="collapse"aria-controls="collapse-post">
<spanclass="glyphiconglyphicon-list-alt"aria-hidden="true"></span>
<spanclass="hidden-sm hidden-xs">Compliant</span>
<spanclass="label label-success pull-right hidden-sm hidden-xs">30</span>
</a>
<ulclass="collapse collapseable"id="collapse-post">
<li><ahref="Createnew.html">New Complaint</a></li>
<li><ahref="view.jsp">View Complaints</a></li>
</ul>
</li>
<liclass="link">
<ahref="user.jsp">
<spanclass="glyphiconglyphicon-user"></span>
<spanclass="hidden-sm hidden-xs">Disco Members</span>
```

```
</a>

</li>

<liclass="link settings-btn">

<ahref="main.jsp">

<spanclass="glyphiconglyphicon-cog"></span>

<spanclass="hidden-sm hidden-xs">Settings</span>

</a></li></ul></div>

<divclass="col-md-10 display-table-cell valign-top box">

<divclass="row">

<headerid="nav-header"class="clearfix">

<divclass="col-md-5">

<navclass="navbar-default pull-left">

<buttontype="button"class="navbar-toggle collapsed"data-toggle="offcanvas"data-target="#side-menu">

<spanclass="sr-only">Toggle navigation</span>

<spanclass="icon-bar"></span>

<spanclass="icon-bar"></span>

<spanclass="icon-bar"></span>

</button>

</nav>

<inputtype="text"id="header-search-field"placeholder="search for soething..">

</div>
```

<divclass="col-md-7">

<ulclass="pull-right">

<liid="welcome">Welcome to administration area</li>

<li>

<ahref="index.jsp"class="logout">

<spanclass="glyphiconglyphicon-log-out">

logout

</a></li></ul>

</header>

<divid="content">

<header>

<h2class="page_title">Create new Complaint</h2>

</header>

<divclass="content-inner">

<divclass="form-wrapper">

<formmethod="post"action="connect.jsp">

<divclass="form-group">

<labelclass="sr-only">ID</label>

<inputtype="text"class="form-control"id="title"name="id"placeholder="ID"required>

<divclass="form-group">

<labelclass="sr-only">Title</label>

<inputtype="text"class="form-control"name="name"id="title"placeholder="Name"required>

<!--

<label class="sr-only">Title</label>

<input type="date" name="date" data-date-format="DD MM YYYY" class="form-control" id="title" >

 -->

<divclass="form-group">

<labelfor="sel1"></label>

<selectrequiredclass="form-control"name="about"id="sel1">

<option>Type of Complaint</option>

<option>No Id Card</option>

<option>No Inshirt</option>

<option>No Shoes</option>

<option>Mobile</option>

</select>

<divclass="form-group">

<labelclass="sr-only">Action Taken</label>

<inputtype="text"class="form-control"name="fine"id="amount"placeholder="Action Taken"required>

<divclass="form-group">

<labelclass="sr-only">Comments</label>

<textareaplaceholder="Comments"name="comment"class="form-control input-lg"required></textarea>

<divclass="clearfix">

<buttontype="submit"onclick="create.jsp"class="btnbtn-primary pull-right">Save</button>

</form>

<divclass="row">

<footerid="admin-footer"class="clearfix">

<divclass="pull-left">Copyright © 2019

<divclass="pull-right">Admin system

</footer>

<scriptsrc="https://code.jquery.com/jquery-3.3.1.slim.min.js"integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"crossorigin="anonymous"></script>

<scriptsrc="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JDZwrnQq4sF86dIHNDz0W1"crossorigin="anonymous"></script>

<scriptsrc="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM"crossorigin="anonymous"></script>

<script>$(document).ready(function(){

$('[data-toggle="offcanvas"]').click(function(){

$('#side-menu').toggleClass('hidden-xs');});

});</script>

</body>

</html>

JSP :

<%@pageimport="java.util.Locale"%>

<%@pageimport="java.text.SimpleDateFormat"%>

<%@pageimport="java.util.Date"%>

<%@pagelanguage="java"contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<%@pageimport="java.sql.*"%>

<%

int  id=Integer.parseInt(request.getParameter("id"));

String name=request.getParameter("name");

String about=request.getParameter("about");

String fine=request.getParameter("fine");

String comment=request.getParameter("comment");

```
Statement st=null;

ResultSetrs = null;

try

{

Class.forName("com.mysql.jdbc.Driver");

Connection conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/project","root","ram779494");

st=conn.createStatement();

String username=(String)session.getAttribute("username");

String status="not resolved";

inti=st.executeUpdate("insert into complaint1 values("+id+",'"+name+"','"+about+"','"+fine+"','"+comment+"','"+username+"','"+status+"')" );

if(i==1){

response.sendRedirect("Createnew.html");

}

elseif(id==0||name==" "||fine ==" "){

        out.println("record is not inserted");}

}

catch(Exception e)

{

System.out.print(e);

e.printStackTrace();}%>
```

**6.1.3 VIEWING COMPLAINT**:

```
<%--
        Document   : view
        Created on : 16 Mar, 2019, 10:32:08 AM
        Author     : mylaptop
--%>
<%@pagecontentType="text/html"pageEncoding="UTF-8"%>
<%@pageimport="javax.sql.*"%>
<%@pageimport="java.sql.*"%>
<!doctypehtml>
<htmllang="en">
<head>
<metacharset="utf-8">
<metahttp-equiv="X-UA-Compatible"content="IE=edge">
<metaname="viewport"content="width=device-width, initial-scale=1">
<!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->
<title>DC Management</title>
<!-- Bootstrap -->
<linkrel="stylesheet"href="https://stackpath.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css"integrity="sha384-HSMxcRTRxnN+Bdg0JdbxYKrThecOKuH5zCYotlSAcp1+c8xmyTe9GYg1l9a69psu"crossorigin="anonymous">
```

```
<linkrel="stylesheet"type="text/css"href="default.css">
</head>
<body>
<divclass="container-fluid display-table">
<divclass="row display-table-row">
<divclass="col-md-2  col-sm-1 hidden-xs display-table-cell valign-top"id="side-menu">
<h1class="hidden-xs hidden-sm">Navigator</h1>
<ul>
<liclass="link ">
<ahref="main.jsp">
<spanclass="glyphiconglyphicon-th"></span>
<spanclass="hidden-sm hidden-xs">Dashboard</span>
</a></li>
<liclass="link active">
<ahref="#collapse-post"data-toggle="collapse"aria-controls="collapse-post">
<spanclass="glyphiconglyphicon-list-alt"aria-hidden="true"></span>
<spanclass="hidden-sm hidden-xs">Compliant</span>
<spanclass="label label-success pull-right hidden-sm hidden-xs">30</span>
</a><ulclass="collapse collapseable"id="collapse-post">
<li><ahref="Createnew.html">New Complaint</a></li>
<li><ahref="view.jsp">View Complaints</a></li>
```

```
</ul></li>
<liclass="link">
<ahref="user.jsp">
<spanclass="glyphiconglyphicon-user"></span>
<spanclass="hidden-sm hidden-xs">Disco Members</span>
</a></li>
<liclass="link settings-btn">
<ahref="main.jsp">
<spanclass="glyphiconglyphicon-cog"></span>
<spanclass="hidden-sm hidden-xs">Settings</span>
</a></li></ul></div>
<divclass="col-md-10 display-table-cell valign-top box">
<divclass="row">
<headerid="nav-header"class="clearfix">
<divclass="col-md-5">
<navclass="navbar-default pull-left">
<buttontype="button"class="navbar-toggle collapsed"data-toggle="offcanvas"data-target="#side-menu">
<spanclass="sr-only">Toggle navigation</span>
<spanclass="icon-bar"></span>
<spanclass="icon-bar"></span>
<spanclass="icon-bar"></span>
```

```
</button>

</nav>

<inputtype="text"id="header-search-field"placeholder="search for soething..">

</div>

<divclass="col-md-7">

<ulclass="pull-right">

<liid="welcome">Welcome to administration area</li>

<li>

<ahref="index.jsp"class="logout">

<spanclass="glyphiconglyphicon-log-out"></span>

logout

</a></li></ul></div></header>

</div>

<divid="content">

<header>

<h2class="page_title">View Complaints</h2>

</header>

<divclass="content-inner">

<divclass="form-wrapper">

<divclass="row">

<divclass="col-md-5">
```

```
<p>Student Details</p>
</div>
</div>
<tableclass="table table-bordered table-striped table-condensed center "align="center">
<tr>
<td>ID</td>
<td>Name</td>
<td>Complaint About</td>
<td>Fine Amount</td>
<td>Comments</td>
<td>Actions</td>
</tr>
<%
try
{
        ResultSetrs = null;
        Statement stmt=  null;
Class.forName("com.mysql.jdbc.Driver");
String username=(String)session.getAttribute("username1");
String type=(String)session.getAttribute("type1");
```

```
Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/project","root","ram779494
");

if(type.equals("admin"))

{

        String qry="select * from complaint1";

        stmt = con.createStatement();

        rs=stmt.executeQuery(qry);

}

else

{

        String qry1="select * from complaint1 where username='"+username+"'";

        stmt = con.createStatement();

        rs=stmt.executeQuery(qry1);

}

while(rs.next())

{

%>

<tr><td><%=rs.getInt(1)%></td>

<td><%=rs.getString(2)%></td>

<td><%=rs.getString(3)%></td>

<td><%=rs.getString(4)%></td>
```

```
<td><%=rs.getString(5)%></td>
<td>
<aclass="btnbtn-xsbtn-default"role="button"href="status.jsp?id=<%=rs.getInt(1)%>">
<spanclass="glyphiconglyphicon-pencil"></span>
</a>
<aclass="btnbtn-xsbtn-default"role="button"href="delete.jsp?id=<%=rs.getInt(1)%>">
<spanclass="glyphiconglyphicon-trash"></span>
</a>
<aclass="btnbtn-xsbtn-default"role="button"href="show.jsp?id=<%=rs.getInt(1)%>">
<spanclass="glyphiconglyphicon-check"></span>
</a></td></tr>
<%
}
%>
</table>
<%
rs.close();
con.close();
        }
catch(Exception e)
{
```

```
e.printStackTrace();
        }
%>
</div></div></div>
<divclass="row">
<footerid="admin-footer"class="clearfix">
<divclass="pull-left"><b>Copyright </b>&copy; 2019</div>
<divclass="pull-right">Admin system</div>
</footer>
</div>
</div>
</div>
</div>
<scriptsrc="https://code.jquery.com/jquery-3.3.1.slim.min.js"integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"crossorigin="anonymous"></script>
<scriptsrc="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JDZwrnQq4sF86dIHNDz0W1"crossorigin="anonymous"></script>
<scriptsrc="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM"crossorigin="anonymous"></script>
```

```
<script>$(document).ready(function(){
        $('[data-toggle="offcanvas"]').click(function(){
        $('#side-menu').toggleClass('hidden-xs');
        });
});</script>
</body>
</html>
<%
try
{
        ResultSetrs = null;
        Statement stmt=  null;
Class.forName("com.mysql.jdbc.Driver");
String username=(String)session.getAttribute("username1");
String type=(String)session.getAttribute("type1");
Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/project","root","ram779494
");
String uname = request.getParameter("id");
        String qry1="select * from complaint1 where id='"+uname+"'";
        stmt = con.createStatement();
        rs=stmt.executeQuery(qry1);
```

```
 while(rs.next())
{
 %>
<tr><td><%=rs.getInt(1)%></td>
<td><%=rs.getString(2)%></td>
<td><%=rs.getString(3)%></td>
<td><%=rs.getString(4)%></td>
<td><%=rs.getString(5)%></td>
<td><%=rs.getString(7)%></td>
</tr>
</table>
<%
rs.close();
con.close();
            }
catch(Exception e)
{
e.printStackTrace();
}
%>
<divclass="row">
```

```
<footerid="admin-footer"class="clearfix">

<divclass="pull-left"><b>Copyright </b>&copy; 2019</div>

<divclass="pull-right">Admin system</div>

</footer></div></div></div>

</div>

<scriptsrc="https://code.jquery.com/jquery-3.3.1.slim.min.js"integrity="sha384-
q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"crossorigin
="anonymous"></script>

<scriptsrc="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"integri
ty="sha384-
UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JDZwrnQq4sF86dIHNDz0W1"cross
origin="anonymous"></script>

<scriptsrc="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"integrity=
"sha384-
JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM"crossorigin=
"anonymous"></script>

<script>$(document).ready(function(){

        $('[data-toggle="offcanvas"]').click(function(){

        $('#side-menu').toggleClass('hidden-xs');

        });

});</script>

</body>

</html>
```

6.2 **R PROGRAMING:-**

**6.2.1 NAIVE BAYES:-**

```
setwd("C:/Users/mylaptop/Documents")

mydata<-read.csv(file="minorproject1.csv")

mydata

str(mydata)

dim(mydata)

dex = sort(sample(nrow(mydata), nrow(mydata)*.7))

mtraining<-mydata[dex,]

mtesting<-mydata[-dex,]

install.packages("e1071")

library(e1071)

NB <-  naiveBayes(complaint_about ~.,data=mtraining)

NB

predNB1<-predict(NB,mtesting,type=c("class"))

table(mtesting$Chooseone,predNB1)

plot(predNB1)
```

**6.2.2 PLOTTING TECHNIQUES:-**

```
install.packages("ggplot2")

library(ggplot2)

setwd("C:/Users/mylaptop/Documents")

pro<- read.csv("minorproject1.csv", stringsAsFactors = FALSE)

str(pro)

names(pro)

summary(pro)

range(pro$fine_amount)

summary(pro$id)

range(pro$complaint_about)

summary(pro$complaint_about)

names(pro$complaint_about)

pro1 <- data.frame(as.numeric(as.factor(pro$id)),

                   as.numeric(as.factor(pro$name)),

                   as.numeric(as.factor(pro$complaint_about)),

                   as.numeric(as.factor(pro$fine_amount)))

colnames(pro1) <- c("id", "name", "complaint_about", "fine_amount")

set.seed(12345)

pro_k5 <- kmeans(pro1, centers=5)
```

**#box plotting**

```
boxplot(pro$fine_amount,
    main="Boxplot for fine collection",
    ylab="fine (rs)",
    xlab="year(int)",  col="pink")
```

**#GGPLOT2**

```
mydata<-read.csv("minorproject.csv", sep=',',header=TRUE)
ggplot(mydata)+geom_bar(aes(x=year),fill="gray")
ggplot(data=mydata,aes(x=factor(1),fill=factor(complaint_about)))+geom_bar(width=
1)+coord_polar(theta = "y")
```

**6.2.3) DataExplorer**

```
setwd("C:/Users/mylaptop/Documents")
data= read.csv("minorproject1.csv")
install.packages("DataExplorer")
library(DataExplorer)
plot_str(data)
plot_missing(data)
plot_bar(data)
create_report(data)
introduce(data)
plot_intro(data)
plot_histogram(data)
```

# CHAPTER 7

## RESULTS AND ANALYSIS:

### Website login and complaint form

Fig 7.1 It is home page for website. From here based on the user type it will navigated to that particular page.

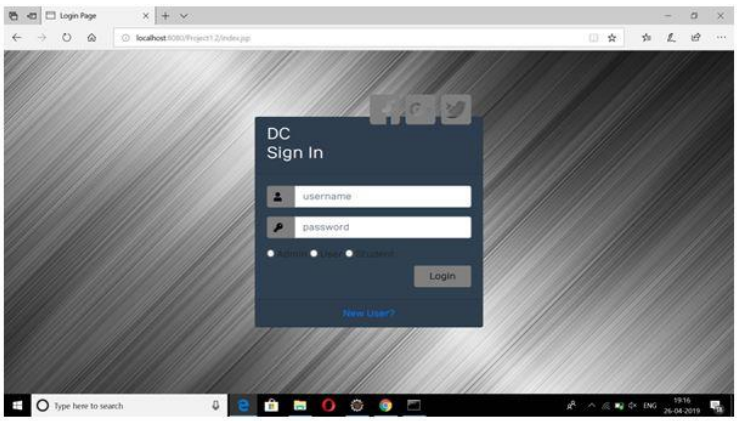


Fig 7.1 LOGIN /SIGNUP PAGE

Fig 7.2 Here we are able to create or generate any kind of complaint on the student because of their misbehaviour.

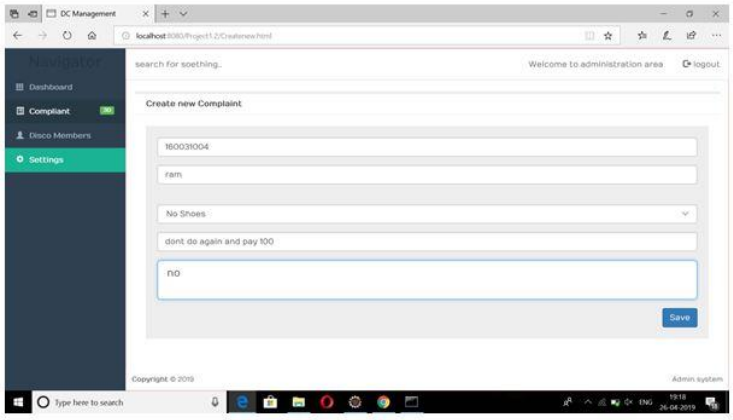


Fig 7.2 Generation /Creation Of The Complaint

The fig 7.3 indicates the count of the students which year they are studying in the college.

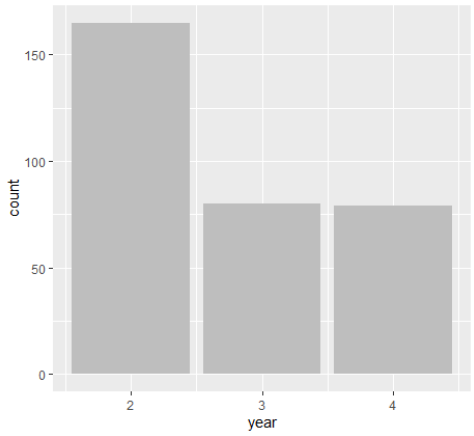


Fig 7.3 graph based on count no of students in a particular year

The fig 7.4 indicates the result after smoothing the attributes smoothing means removing the outliers, null values from the imported dataset even it removes all the irregularities in the dataset, by using the smoothing the accuracy of the data will be increased

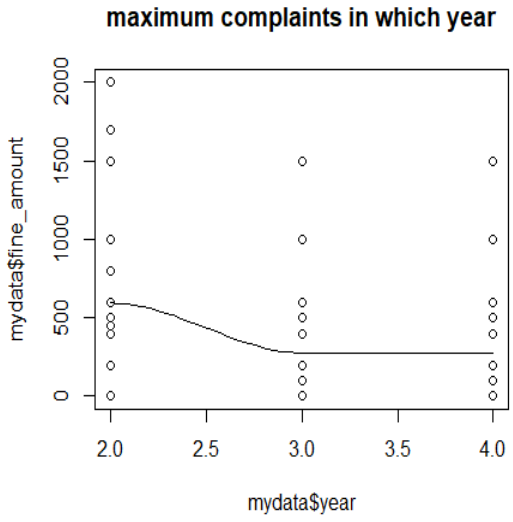


Fig 7.4 result for naïve Bayes classification for smoothing of the data based on fine amount & year

The fig 7.5 indicates the percentage or count that each complaint type based on the students and it displays counts no of students involved in that complaint

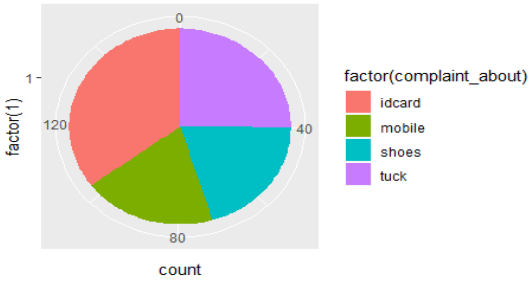


Fig 7.5 pi-chart representation of the total count about the complaint

The 7.6 indicates the data which complaints are noted more

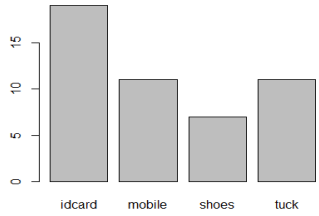


Fig 7.6 hist representation about the complaint

The fig 7.7 indicates based on DataExplorer the first function that we will be using is to learn about the structure of our Data-set. This displays all the questions asked in the form of nodes in a tree. All the questions that are represented as nodes are all connected to the root node which holds the integral structure of our tree. In order for us to identify the structure we will be using the following command in **'R '**...

plot_str(data)

On execution of this command we will get the following output Fig 5. The structure of data is:

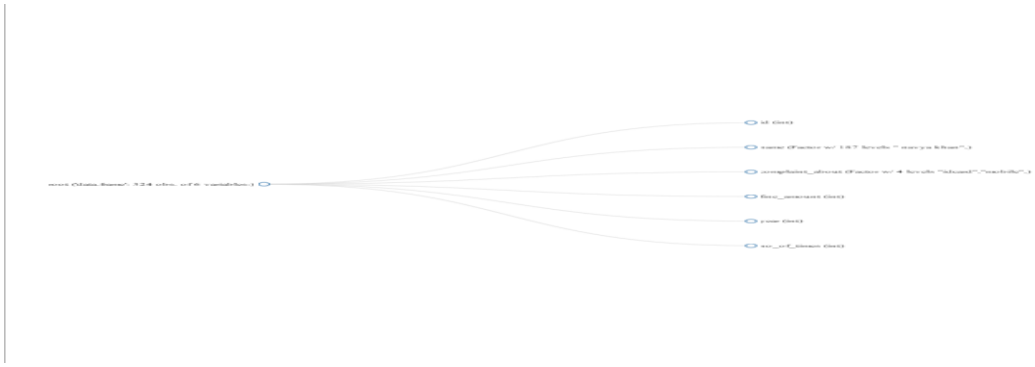

Fig 7.7 structure of the data in the dataset

Fig 7.8 indicates displays the plot after constructing tree for the dataset we are finding the missing values in the dataset

By the DataExplorer package we can able to create a report and plot the graph by generating the percentages for memory usage, data structures in tree format, correlations, histograms, bar charts based on attribute, Principal Component Analysis specifications.

From fig 7.8,7.9,7.10,7.11,7.12 these plotting are occurred after creating the report with our dataset and visualising each attribute and results will be in a pictographically.

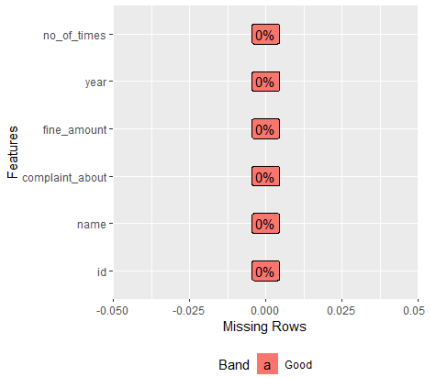


Fig 7.8 finding the frequency of the missing values in the given dataset

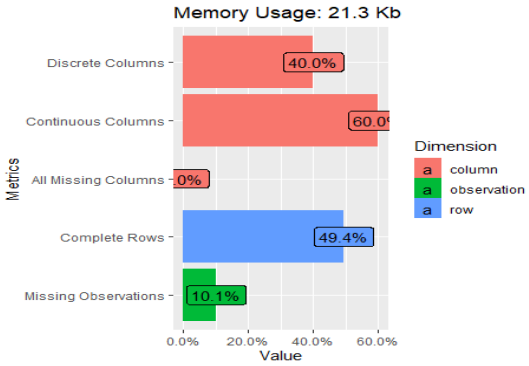


Fig 7.9 graph based on memory usage of the dataset

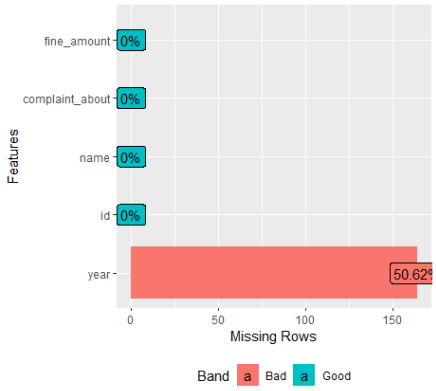


Fig 7.10 graph based on the missing values in the dataset

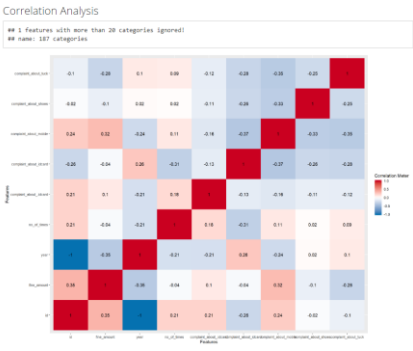


Fig 7.11correlation analyses on each feature in the dataset

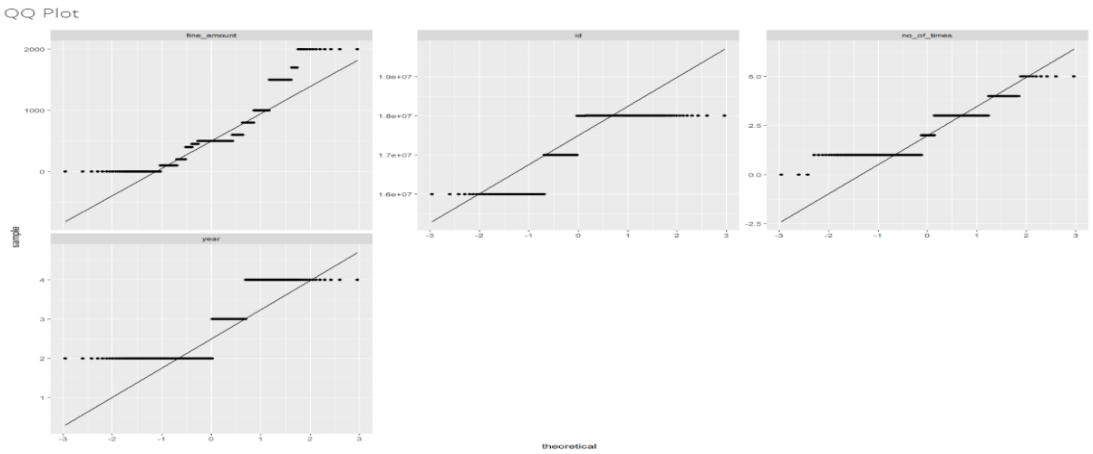


Fig 7.12 Quantile Quantile plot by considering 2 different attributes each time both theoretical and sample data

# CHAPTER 8

# CONCLUSION AND FUTURE SCOPE

## 8.1 CONCLUSION:-

- This project is very much useful as it contains all the student details who were caught under disciplinary actions.
- After paying fine or submitting a proper explanation from the student we remove his record and maintain the status as resolved.

## 8.2 FUTURE SCOPE:-

- In further we can also use neural networks for checking the errors with the help of backtracking and feedforward method
- It is easy to analyze the data in the form of pictographically manner.
- Online process of sending or generating the data via Internet is much easy and time reducing process and will not be take much man power for writing the data into the books.

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[4]We used JSP in this project we have get them by online site www.javatpoint.com

[5]We used bootstrap in this project we have learnt this by www.bootstrap.com

[6] cran.r-project.org