

# **VISVESVARAYATECHNOLOGICALUNIVERSITY**



***BELAGAVI– 590018,Karnataka***

***INTERNSHIP REPORT***

***ON***

***“ SENTIMENTAL ANALYSIS”***

***Submitted in partial fulfilment for the award of degree (21CS185)***

***BACHELOR OF ENGINEERING IN  
CSE***

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*LOGO :*

*Conducted at*

**VARCONS TECHNOLOGIES PVT LTD**



***SAMBHRAM INSTITUTE OF TECHNOLOGY***

***CSE***

***AFFILIATED TO VTU , APPROVED BY AICTE***

***Hesaraghatta Rd, Jalahalli East, Bengaluru, Karnataka***

***560097***

**SAMBHRAM INSTITUTE OF TECHNOLOGY**  
**CSE**  
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**Hesaraghatta Rd, Jalahalli East, Bengaluru, Karnataka**  
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**CERTIFICATE**

*This is to certify that the Internship titled “ SENTIMENTAL ANALYSIS” carried out by Mr.KEITH VINCENT RAJ,JEEVAN B,KARTHIK K A,VISHWANATH GOWDA KT,VISHWAS NB ,abonafide student of sambhram Institute ofTechnology,inpartialfulfillmentfortheawardofBachelorofEngineering,inCSEunderVissvesvarayaTechnologicalUniversity,Belagavi, during the year 2022-2023. It is certified that all corrections/suggestions indicated have beenincorporatedin thereport.*

*Theprojectreporthasbeenapprovedasitsatisfiestheacademicrequirementsinrespect ofInternshipprescribedfor thecourse Internship/ProfessionalPractice (21CS185)*



## ***DECLARATION***

***I, KEITH VINCENT RAJ,JEEVAN B,KARTHIK K A,VISHWANATH GOWDA KT,VISHWAS NB , first year students of CSE,SAMBHRAM INSTITUTE OF TECHNOLOGY - 560097, declare that the Internship has been successfully completed ,in. VARCONS TECHNOLOGIES PVT LTD***

***This report is submitted in partial fulfillment of the requirements for award of Bachelor Degree in Branch CSE, during the academic year2022-2023.***

***Date:16-11-2022***

***:***

***Place :BANGALORE***

## **ACKNOWLEDGEMENT**

*This Internship is a result of accumulated guidance, direction and support of several important persons. We take this opportunity to express our gratitude to all who have helped us to complete the Internship.*

*We express our sincere thanks to our Principal, for providing us adequate facilities to undertake this Internship.*

*We would like to thank our Head of Dept – branch code, for providing us an opportunity to carry out Internship and for his valuable guidance and support.*

*We would like to thank our (Lab assistant name) Software Services for guiding us during the period of internship.*

*We express our deep and profound gratitude to our guide, Guide name, Assistant/Associate Prof, for her keen interest and encouragement at every step in completing the Internship.*

*We would like to thank all the faculty members of our department for the support extended during the course of Internship.*

*We would like to thank the non-teaching members of our dept, for helping us*

*duringtheInternship.*

*Last but not the least, we would like to thank our parents and friends without whose  
constanthelp,thecompletion ofInternshipwould have notbeenpossible.*

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# **1. COMPANY PROFILE**

## *A Brief History of VARCONS TECHNOLOGIES PVT LTD*

*Varcons Technologies, was incorporated with a goal " To provide high quality and optimal Technological Solutions to business requirements of our clients" . Every business is different and has a unique business model and so are the technological requirements. They understand this and hence the solutions provided to these requirements are different as well. They focus on clients requirements and provide them with tailor made technological solutions. They also understand that Reach of their Product to its targeted market or the automation of the existing process into a client and simple process are the key features that our clients desire from Technological Solution they are looking for and these are the features that we focus on while designing the solutions for their clients.*

*Sarvamoola Software Services. is a Technology Organization providing solutions for all web design and development, MYSQL, PYTHON Programming, HTML, CSS, ASP.NET and LINQ. Meeting the ever increasing automation requirements, Sarvamoola Software Services specialize in ERP, Connectivity, SEO Services, Conference Management, effective web promotion and tailor-made software products, designing solutions best suiting clients requirements.*

*Varcons Technologies, strive to be the front runner in creativity and innovation in software development through their well-researched expertise and establish it as an out of the box software development company in Bangalore, India. As a software development company, they translate this software development expertise into value for their customers through their professional solutions.*

*They understand that the best desired output can be achieved only by understanding the clients demand better. Varcons Technologies work with their clients and help them to define their exact solution requirement. Sometimes even they wonder that they have completely redefined their solution or new application requirement during the brainstorming session, and here they position themselves as an IT solutions consulting*

*group comprising of high caliber consultants.*

*They believe that Technology when used properly can help any business to scale and achieve new heights of success. It helps Improve its efficiency, profitability, reliability; to put it in one sentence ” Technology helps you to Delight your Customers” and that is what we want to achieve.*

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## **2. ABOUTTHECOMPANY**



*Varcons Technologies is a Technology Organization providing solutions for all webdesign and development, MYSQL, PYTHON Programming, HTML, CSS, ASP.NET andLINQ. Meeting the ever increasing automation requirements, Compsoft TechnologiesspecializeinERP,Connectivity,SEOServices,ConferenceManagement,effect ivewebpromotionandtailor-madesoftwareproducts,designingsolutionsbestsuitingclient srequirements.The organization where they have a right mix of professionals as a stakeholderstohelpusserveourclientswithbestofourcapabilityandwithatparindustrystan dards.They have young, enthusiastic, passionate and creative Professionals to develop technologicalinnovations in the field of Mobile technologies, Web applications as well as Business andEnterprise solution. Motto of our organization is to “ Collaborate with our clients to providethem with best Technological solution hence creating Good Present and Better Future for ourclient which will bring a cascading a positive effect in their business shape as well” . Providing a Complete suite of technical solutions is not just our tag line, it is Our Vision for Our Clients and for Us, Westrivehard toachieveit.*

### **ProductsofVarcons Technologies.**

#### **AndroidApps**

*It is the process by which new applications are created for devices running the Androidoperating system. Applications are usually developed in Java (and/or Kotlin; or other suchoption) programming language using the Android software development kit (SDK), but otherdevelopment environments are also available, some such as Kotlin support the exact sameAndroidAPIs(and bytecode),whileotherssuchasGohave restricted APIaccess.*

*The Android software development kit includes a comprehensive set of development*

tools. These include a debugger, libraries, a handset emulator based on QEMU, documentation, sample code, and tutorials. Currently supported development platforms include computers running Linux (any modern desktop Linux distribution), Mac OS X 10.5.8 or later, and Windows 7 or later. As of March 2015, the SDK is not available on Android itself, but software development is possible by using specialized Android applications 02

### **Web Application**

It is a client– server computer program in which the client (including the user interface and client– side logic) runs in a web browser. Common web applications include webmail, online

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retail sales, online auctions, wikis, instant messaging services and many other functions.

web applications use web documents written in standard formats such as HTML and JavaScript, which are supported by a variety of web browsers. Web applications can be considered as a specific variant of client–

server software where the client software is downloaded to the client machine when visiting the relevant webpage, using standard procedures such as HTTP. The Client web software updates may happen each time the webpage is visited. During the session, the web browser interprets and displays the pages, and acts as the universal client for any web application. The use of web application frameworks can often reduce the number of errors in a program, both by making the code simpler, and by allowing one team to concentrate on the framework while another focuses on a specified use case. In applications which are exposed to constant hacking attempts on the Internet, security-related problems can be caused by errors in the program.

Frameworks can also promote the use of best practices such as GET after POST. There are some who view a web application as a two-tier architecture. This can be a “smart” client that performs all the work and queries a “dumb” server, or a “dumb” client that relies on a “smart” server. The client would handle the presentation tier, the server would have the database (storage tier), and the business logic (application tier) would be on one of them or on both. While this increases the scalability of the applications and separates the display and the database, it still doesn’t allow for true specialization of layers, so most applications will outgrow this model. An emerging strategy for application software companies is to provide web access to software previously distributed as local applications. Depending on the type of application, it may require the development of an entirely different browser-based interface, or merely adapting an existing application to use different presentation technology. These programs allow the user to pay a monthly or yearly fee for use of a software application without having to install it on a local hard drive. A company which follows this strategy is known as an application service provider (ASP), and ASPs are currently receiving much attention in the software industry.

Security breaches on these kinds of applications are a major concern because it can involve both enterprise information and private customer data. Protecting these assets is an important part of any web application and there are some key operational areas



*that must be included in the development process. This includes processes for authentication, authorization, asset handling, input, and logging and auditing. Building security into the applications from the beginning can be more effective and less disruptive in the long run.*

### **Web design**

*It encompasses many different skills and disciplines in the production and maintenance of websites. The different areas of web design include web graphic design; interface design; authoring, including standardized code and 04*

search engine optimization. The term web design is normally used to describe the design process relating to the front-end (client side) design of a website including writing mark up. Web design partially overlaps web engineering in the broader scope of web development. Web designers are expected to have an awareness of usability and if their role involves creating markup then they are also expected to be up to date with web accessibility guidelines. Web design partially overlaps web engineering in the broader scope of web development.

### ***Departments and services offered***

Varcons Technologies plays an essential role as an institute, the level of education, development of student's skills are based on their trainers. If you do not have a good mentor then you may learn many things from others and that is why we at Varcons Technologies gives you the facility of skilled employees so that you do not feel unsecured about the academics. Personality development and academic status are some of those things which lie on mentor's hands. If you are trained well then you can do well in your future and knowing its importance of Varcons Technologies always tries to give you the best.

They have a great team of skilled mentors who are always ready to direct their trainees in the best possible way they can and to ensure the skills of mentors we held many skill development programs as well so that each and every mentor can develop their own skills with the demands of the companies so that they can prepare a complete packaged trainee.

### ***Services provided by Varcons Technologies.***

- *Core Java and Advanced Java*
- *Web services and development*
- *Dot Net Framework*
- *Python*
- *Selenium Testing*

- *Conference /EventManagement Service*
- *AcademicProjectGuidance*
- *OnTheJob Training*
- *Software Training*

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### 3. INTRODUCTION

#### **Introduction to ML**

*Machine learning has become an integral part of many commercial applications and research projects, but this field is not exclusive to large companies with extensive research teams. If you use Python, even as a beginner, this book will teach you practical ways to build your own machine learning solutions. Machine learning is a type of artificial intelligence (AI) that provides computers with the ability to learn without being explicitly programmed. Machine learning focuses on the development of Computer Programs that can change when exposed to new data. In this article, we'll see basics of Machine Learning, and implementation of a simple machine learning algorithm using python. Machine learning involves a computer to be trained using a given data set, and use this training to predict the properties of a given new data. For example, we can train a computer by feeding it 1000 images of cats and 1000 more images which are not of a cat, and tell each time to the computer whether a picture is cat or not. Then if we show the computer a new image, then from the above training, the computer should be able to tell whether this new image is a cat or not.*

*The process of training and prediction involves the use of specialized algorithms. We feed the training data to an algorithm, and the algorithm uses this training data to give predictions on a new test data. One such algorithm is [K-Nearest-Neighbor](#) classification (KNN classification). It takes a test data, and finds  $k$  nearest data values to this data from test data set. Then it selects the neighbor of maximum frequency and gives its properties as the prediction result.*

#### **Problem Statement**

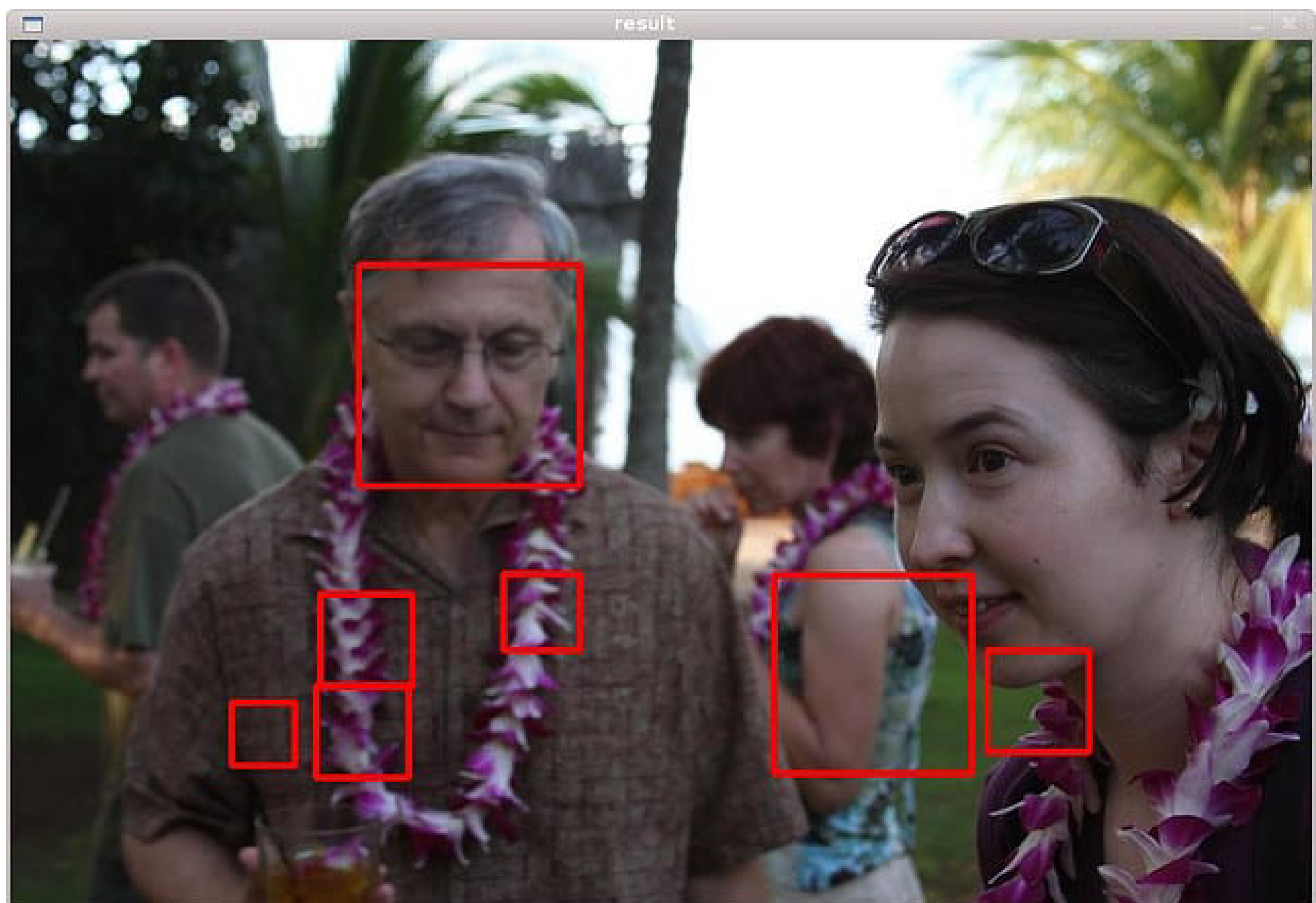
**Spam Detection:** *Given email in an inbox, identify those email messages that are spam and those that are not. Having a model of this problem would allow a program to leave non-spam emails in the inbox and move spam emails to a spam folder. We should all be familiar with this example*

**Credit Card Fraud Detection:** *Given credit card transactions for a customer in a month, identify those transactions that were made by the customer and those that were not. A program with a model of this decision could refund those transactions that were fraudulent.*

**Digit Recognition:** Given a zip codes hand written on envelops, identify the digit for each hand written character. A model of this problem would allow a computer program to read and understand handwritten zip codes and sort envelops by geographic region.

**Speech Understanding.** Given an utterance from a user, identify the specific request made by the user. A model of this problem would allow a program to understand and make an attempt to fulfil that request. The iPhone with Siri has this capability.

**Face Detection:** Given a digital photo album of many hundreds of digital photographs, identify those photos that include a given person. A model of this decision process would allow a program to organize photos by person. Some cameras and software like iPhoto has this capability.





## **4.SYSTEMANALYSIS**

### **1. ExistingSystem**

*A key part of system analysis of the existing system is gathered in gall relevant information about the present system. The system analyst has to find out how the current system works. He must know what information together, where to find it.*

### **2. ProposedSystem**

*System analysis is conducted for the purpose of studying a system or its parts in order to identify its objectives. It is a problem solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose. Analysis specifies what the system should do.*

### **3. ObjectiveoftheSystem**

*System analysis is conducted for the purpose of studying a system or its parts in order to identify its objectives. It is a problem solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose. Analysis specifies what the system should do.*





## **5.REQUIREMENTANALYSIS**

### ***HardwareRequirementSpecification***

*The Hardware Requirements Specification (SRS) captures the complete Hardware requirements for the system, or a portion of the system. Following is a typical SRS outline for a project using only traditional natural-language style requirements – with no use-case modeling.*

### ***SoftwareRequirementSpecification***

*Software Requirement Specification (SRS) Format as name suggests, is complete specification and description of requirements of software that needs to be fulfilled for successful development of software system. These requirements can be functional as well as non-functional depending upon type of requirement. The interaction between different customers and contractor is done because its necessary to fully understand needs of customers.*



## **6. DESIGN&ANALYSIS**

***Data Analysis** is the technique to collect, transform, and organize data to make future predictions, and make informed data-driven decisions. It also helps to find possible solutions for a business problem. There are six steps for Data Analysis. They are:*

*Ask or Specify Data Requirements  
Prepare or Collect Data  
Clean and Process  
Analyze  
Share  
Act or Report*

*Each step has its own process and tools to make overall conclusions based on the data.*

*In this article, we will discuss how to do data analysis with Python. We will discuss all sorts of data analysis i.e. analyzing numerical data with NumPy, Tabular data with Pandas, data visualization Matplotlib, and Exploratory data analysis*

### ***Analyzing Numerical Data with NumPy***

*[NumPy](#) is an array processing package in Python and provides a high-performance multidimensional array object and tools for working with these arrays. It is the fundamental package for scientific computing with Python.*

### ***Arrays in NumPy***

*[NumPy Array](#) is a table of elements (usually numbers), all of the same type, indexed by a tuple of positive integers. In Numpy, the number of dimensions of the array is called the rank of the array. A tuple of integers giving the size of the array along each dimension is known as the shape of the array.*

## **7. IMPLEMENTATION**

*Implementation is the stage where the theoretical design is turned into a working system. The most crucial stage in achieving a new successful system and in giving confidence on the new system for the users that it will work efficiently and effectively.*

*The system can be implemented only after thorough testing is done and if it is found to work according to the specification. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the change over and an evaluation of change over methods apart from planning.*

*Two major tasks of preparing the implementation are education and training of the users and testing of the system. The more complex the system being implemented, the more involved will be the system analysis and design effort required just for implementation.*

*The implementation phase comprises of several activities. The required hardware and software acquisition is carried out. The system may require some software to be developed. For this, programs are written and tested. The user then changes over to his new fully tested system and the old system is discontinued.*

### **TESTING**

*The testing phase is an important part of software development. It is the Information system will help in automate process of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied. Software testing is carried out in three steps:*

- 1. The first includes unit testing, where in each module is tested to provide its correctness, validity and also determine any missing operations and to verify whether the objectives have been met. Errors are noted down and corrected immediately.*
- 2. Unit testing is the important and major part of the project. So errors are rectified easily in particular module and program clarity is increased. In this project entire*

*system is divided into several modules and is developed individually. So unit testing is conducted to individual modules.*

- 3. The second step includes Integration testing. It need not be the case, the software whose modules when run individually and showing perfect results, will also show perfect results when run as a whole.*

## **8. SNAPSHOTS**



```
In [3]: 1 ## importing libraries
2 ## data manipulation
3 import pandas as pd
4 import numpy as np
5 import re
6 import string
7
8 ## methods and stopwords text processing
9 from nltk.corpus import stopwords
10 from nltk.tokenize import word_tokenize
11 from nltk.stem import PorterStemmer
12 from nltk.stem import WordNetLemmatizer
13 from sklearn.feature_extraction.text import TfidfVectorizer
14 from sklearn.model_selection import train_test_split
15
16 ## Machine learning libraries
17 from sklearn.metrics import accuracy_score
18 from sklearn.naive_bayes import MultinomialNB
19 from sklearn.linear_model import LogisticRegression
20 from sklearn.svm import SVC
21
22
23 import warnings
24 warnings.filterwarnings("ignore")
```

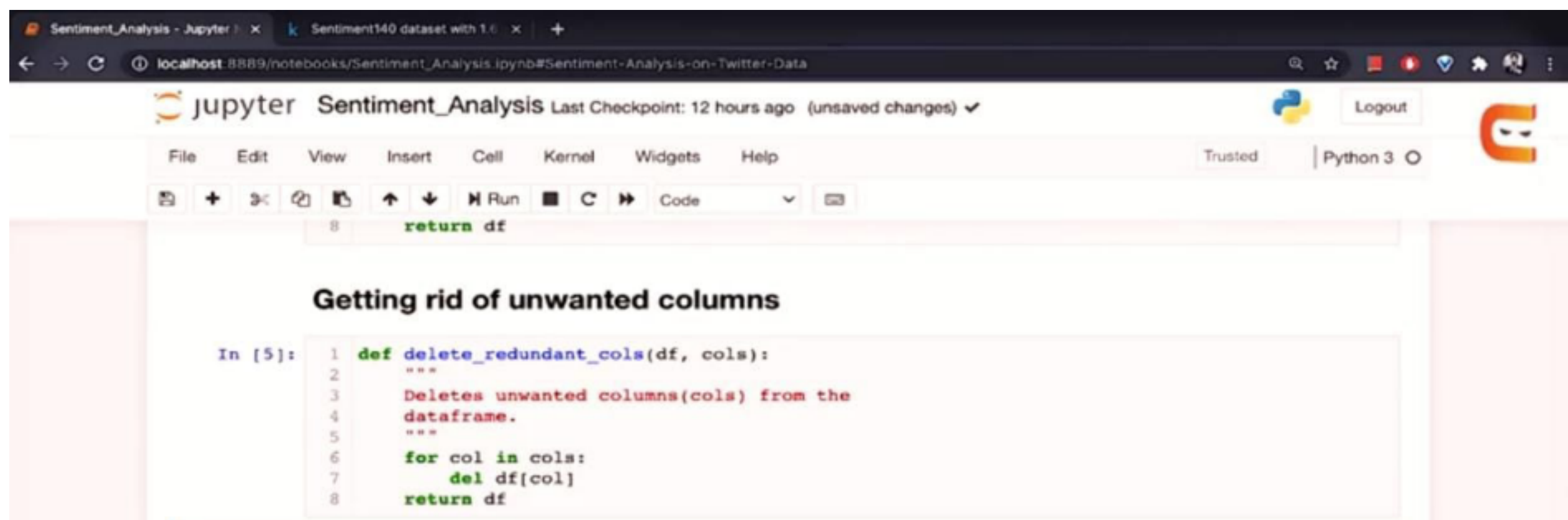
```
In [4]: 1 ## creating a stopwords set
2 import nltk
3 nltk.download('stopwords')
4 stop_words = set(stopwords.words('english'))

[nltk_data] Downloading package stopwords to
[nltk_data] /Users/harshit/nltk_data...
[nltk_data] Package stopwords is already up-to-date!

Step2 : Load the Dataset

In [ ]: 1 def load_dataset(filepath, cols):
2     """
3     reads the CSV file to return
4     a dataframe with specified column names
5     """
6     df = pd.read_csv(filepath, encoding='latin-1')
7     df.columns = cols
8     return df
```



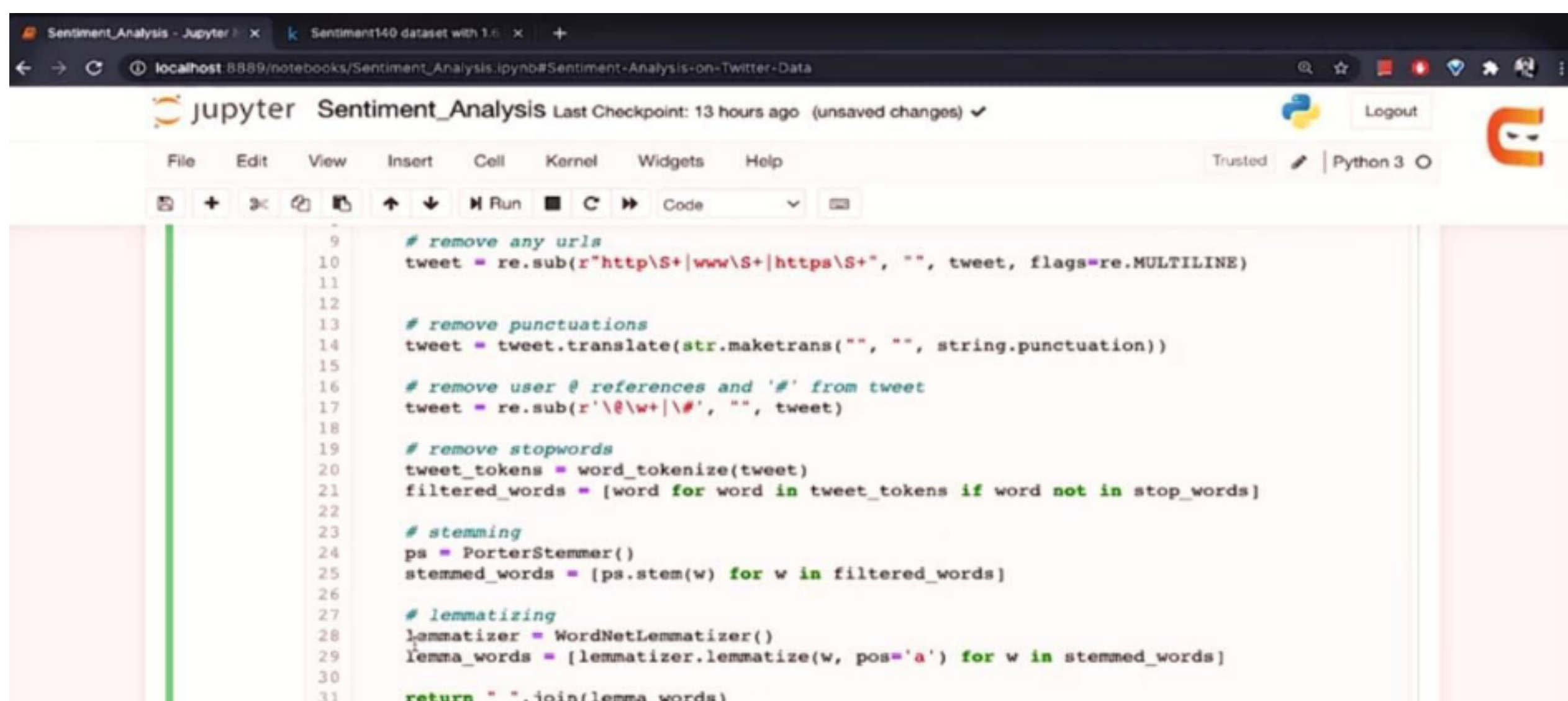


The screenshot shows a Jupyter Notebook interface with the title 'Sentiment\_Analysis'. The top bar indicates 'Last Checkpoint: 12 hours ago (unsaved changes)'. The notebook has a menu bar with 'File', 'Edit', 'View', 'Insert', 'Cell', 'Kernel', 'Widgets', and 'Help'. Below the menu bar is a toolbar with icons for file operations, running, and code execution. The main area displays a code cell with the following Python code:

```
8 return df
```

### Getting rid of unwanted columns

```
In [5]: 1 def delete_redundant_cols(df, cols):
2         """
3         Deletes unwanted columns(cols) from the
4         dataframe.
5         """
6         for col in cols:
7             del df[col]
8         return df
```

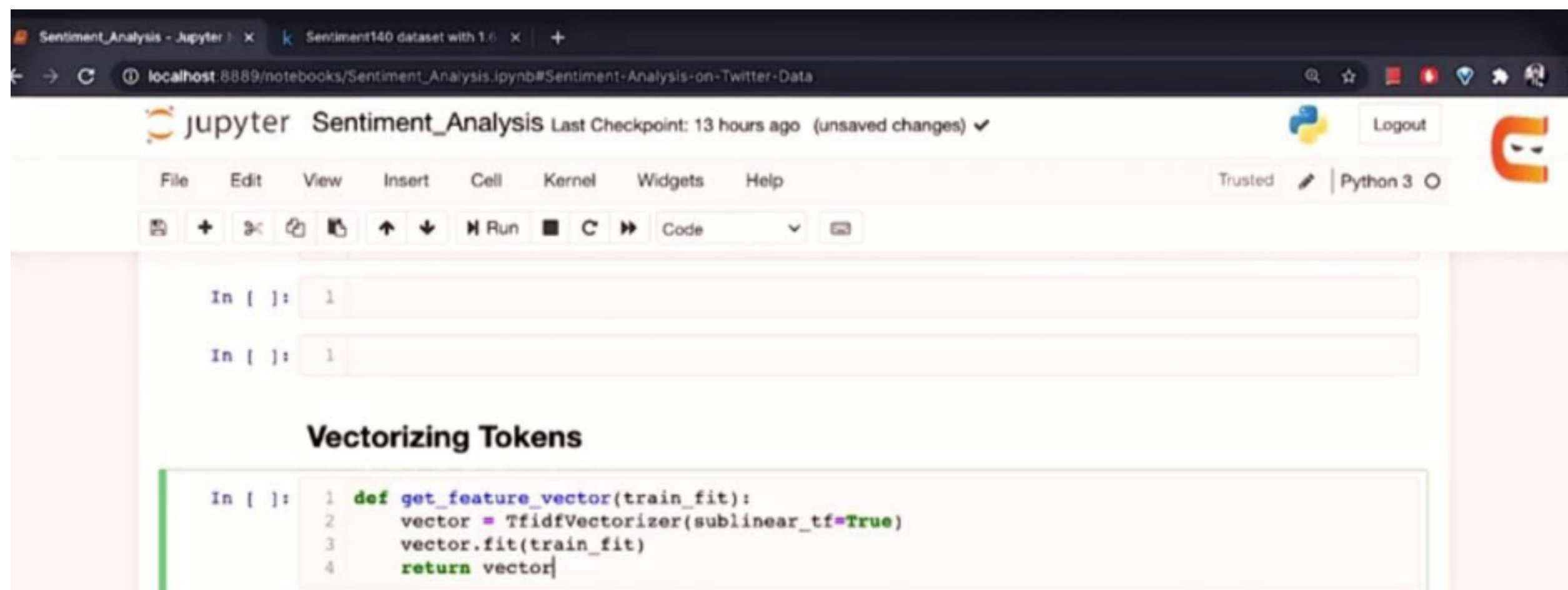


The screenshot shows a Jupyter Notebook interface with the title 'Sentiment\_Analysis'. The top bar indicates 'Last Checkpoint: 13 hours ago (unsaved changes)'. The notebook has a menu bar with 'File', 'Edit', 'View', 'Insert', 'Cell', 'Kernel', 'Widgets', and 'Help'. Below the menu bar is a toolbar with icons for file operations, running, and code execution. The main area displays a code cell with the following Python code:

```
9 # remove any urls
10 tweet = re.sub(r"http\S+|www\S+|https\S+", "", tweet, flags=re.MULTILINE)
11
12 # remove punctuations
13 tweet = tweet.translate(str.maketrans("", "", string.punctuation))
14
15 # remove user @ references and '#' from tweet
16 tweet = re.sub(r'\@w+|\#', "", tweet)
17
18 # remove stopwords
19 tweet_tokens = word_tokenize(tweet)
20 filtered_words = [word for word in tweet_tokens if word not in stop_words]
21
22 # stemming
23 ps = PorterStemmer()
24 stemmed_words = [ps.stem(w) for w in filtered_words]
25
26 # lemmatizing
27 lemmatizer = WordNetLemmatizer()
28 lemma_words = [lemmatizer.lemmatize(w, pos='a') for w in stemmed_words]
29
30 return " ".join(lemma_words)
31
```









## **9. CONCLUSION**

*The package was designed in such a way that future modifications can be done easily. The following conclusions can be deduced from the development of the project.*

- ❖ *Automation of the entire system improves the efficiency*
- ❖ *It provides a friendly graphical user interface which proves to be better when compared to the existing system.*
- ❖ *It gives appropriate access to the authorized users depending on their permissions.*
- ❖ *It effectively overcomes the delay in communications.*
- ❖ *Updating of information becomes so easier*
- ❖ *System security, data security and reliability are the striking features.*
- ❖ *The System has adequate scope for modification in future if it is necessary.*



***10. REFERENCE***

