Project Report

**TEAM ID : **PNT2022TMID37091
**PROJECT : **NEWS TRACKER APPLICATION

1. **INTRODUCTION**

1.1 **Project Overview**

News Tracker is a full stack web application which allows users to register along with their favourite topics, upon login the app displays the news based on the user's interest. The news displayed in the app is based on the New catcher API and Cric buzz API from Rapid API site. A news-sharing app wants to help users find relevant and important news easily every day and also provide explicitly news from that users locality/region which may of help to the user.

1.2 **Purpose**

Enabling users to view news from anywhere at anytime. It also helps to reduce the time to get information about a specific topic. Also enables a person to get an updated news which may help Business people to make business related decisions quickly and correctly.

2. LITERATURE SURVEY

2.1 Existing problem

Physical newspapers are old fashioned in this digital era. They cost money to buy, can easily be damaged, limited amount of information, not flexible to modifications, poor quality. Sometimes may show irrelevant and updated news.

2.2 Survey

Sl. No	TITLE	AUTHORS	YEAR	TECHNIQUES	MERITS	DEMERITS
1	**Design and Implementation of News Collecting and Filtering System Based on RSS**	Zheng, R., & Zhang, Y.	**2012**	Using RSS to collect News with enhanced search system	System can automatically collect the latest news information from the subscribe site, then parsing and Storing the information into database.	Graphics and photos do not always appear .Posts are easily deformatted or fully erased. RSS might make the process a bit unpleasant.
2	**News Event Detection and Tracking Based on Stream of Online News**	Yajie Qi Li Zhou Huayou Si JianWan Ting Jin	**2017**	Single-pass clustering algorithm for event detection and tracking	Extraction of news content on particular field by searching keywords.	In some cases it can't analyse the keyword brings original news or not
3	**Deep News Event Ranker Based on User Relevant Query**	Kong, X., Kong, Q., Mao, W., & Tang, S.	**2018**	Word embedding technology using Global vector of word representation	Top news will be ranked according to the user query	The model is trained on the cooccurrence matrix of words, which takes a lot of memory for

						storage
4	**Exploring mobile news reading interactions for news app personalisation**	Marios Constantinides, John Dowell, David Johson, Sylvain Malacria	**2015**	1. Identification of news reader types 2. Interaction logging and classification study 3. Deployment and data collection 4. Predicting News reader types 5. Adaptive UI	The adaptive user interface changes according to the type of task you want to perform. This will increase the stability of the system.	The overall code of the website and the size of the app increases if the user interface is adaptive. There is a lot of code to be written for making the user interface adaptive
5	**Detection and Tracking in News Articles**	Sagar Patel, Sanket Suthar, Sandip Patel, Neha Patel	**2015**	1. Pre-processing 2. Tokenization 3. Stemming/Lemmization 4. Vector Space Model 5. Topic tracking	Allows the computing for a continuous degree of similarities between queries and document	1. Suffers from synonym and polysemy 2. It theoretically assumes that terms are statistically independent.

6	**Following the Fed with a News Tracker**	Michael William McCracken	**2012**	The paper is not a technical paper but is essentially a statistical paper on how should one conclude whether the data have come in stronger, weaker or as expected. This is based on the Citi Group U.S Economic Surprise Index.	Tracks whether a core set of economic data series has been coming in under expectations, at expectations, or over expectations	, the surprise indexes tend to have the right sign and be significant: a positive change in the U.S. surprise index (i.e. the U.S. economy doing better than expected) appreciates the U.S. dollar versus the foreign currency, whereas a positive change in the foreign surprise index depreciated the U.S. dollar.

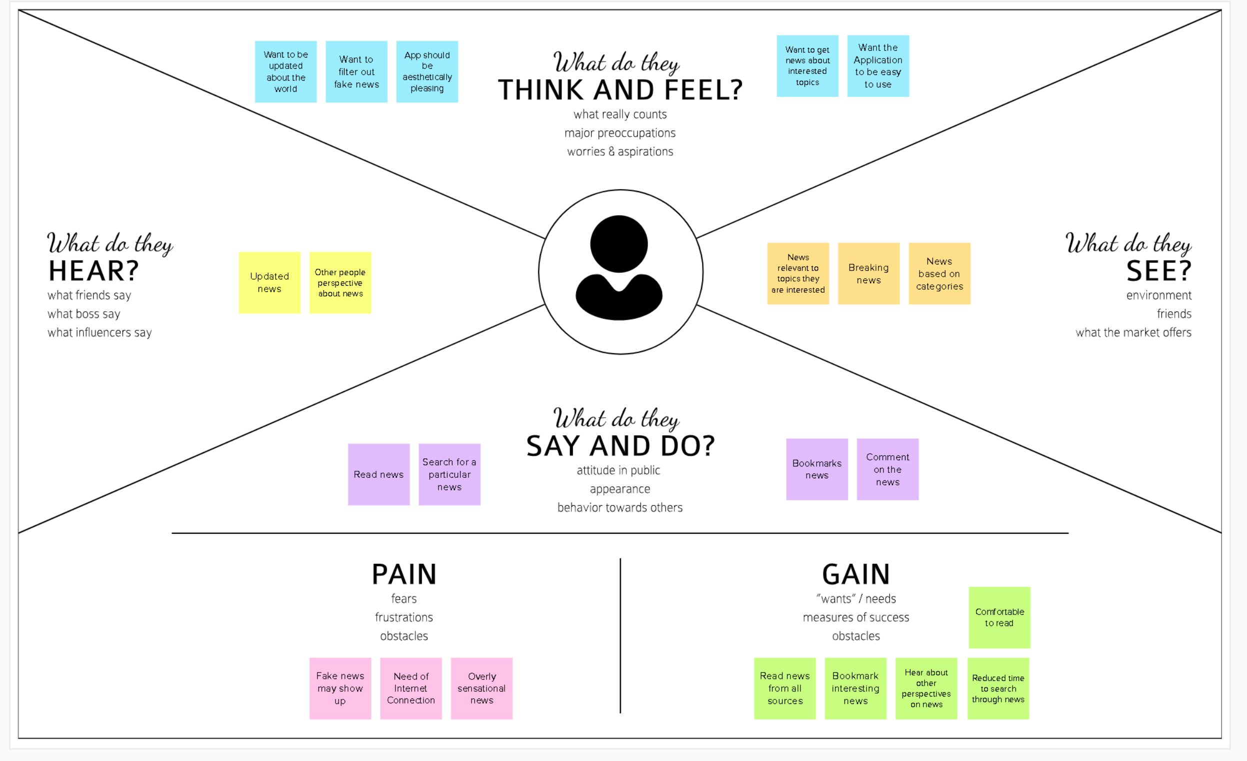
2.3 **Problem Statement Definition**

Newspaper contains limited, nonuser/reader specific, Location specific news. There are multiple news-sharing apps available which can be used by a single user and are often spammed with notifications. There is also a lot of unwanted news which gets shared. So it may take a lot of time for the user to find the news he/she likes. A news-sharing app wants to help users find relevant and important news easily every day and also provide explicitly news from that users locality/region which may of help to the user.

Vijay is a busy business man who needs to read news on the go without any hassles while travelling because he considers carrying around a physical newspaper a nuisance to him and the people around him. Vijay needs to read needs to read news in such a way that he doesn't have to worry about ever buying physical newspapers or carrying with him everywhere. Something which should fit in the palm of his hands, which he could carry everywhere, access from everywhere, something digital such as an Application hosted on the internet which could be accessed from any device that is connected to the Internet. Such as smartphones and computers.

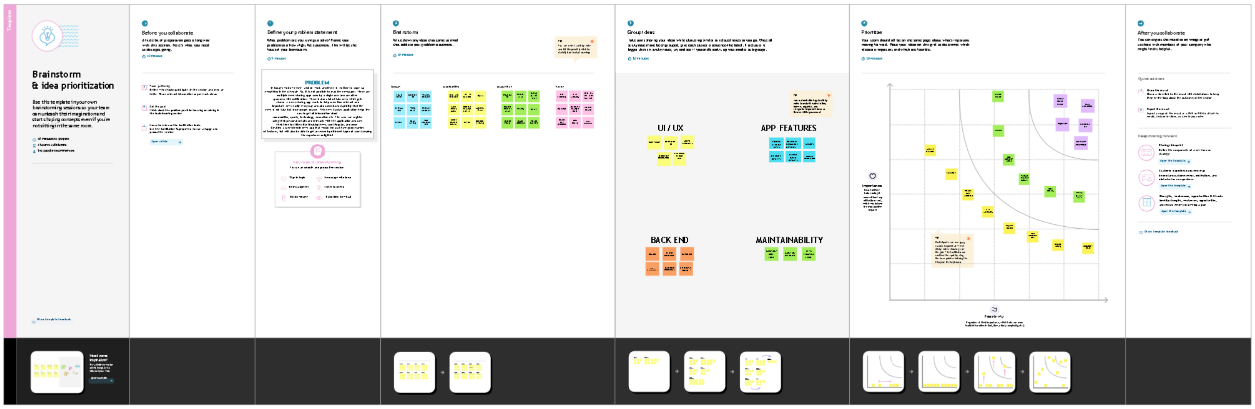
3. **IDEATION AND PROPOSED SOLUTION**

3.1 Empathy map canvas



3.2 **Ideation and Brainstorming**

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.



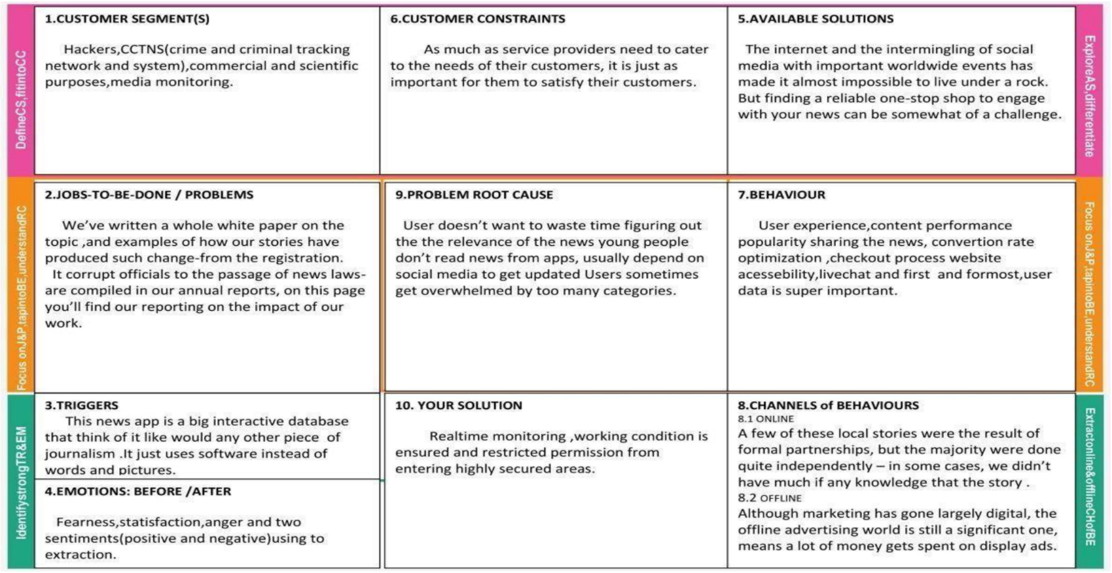
3.3 Proposed Solution

S.NO.	Parameter	Description
1.	Problem Statement (Problem to be solved)	**Statement:** Everyday, a lot of events happen world-wide and we rely on newspapers, television and news articles to get the reliable and trust-worthy information about these events.**Description:** As a result, we created a platform that offers such news from reliable sources worldwide, in an organized and efficient manner.
2.	Idea / Solution description	One platform for all local and worldwide news. Trustworthy and Reliable News. Fast and efficient system. Preventing spread of False information. Data Storage and Backup. Communication.
3.	Novelty / Uniqueness	A cloud computing-based news application that generates news and reports about the happenings around the world using computers and network (Internet). News based on most reliable and trustworthy resources around the world. Developing the Eco- Friendly & sustainability based on centre.

4.	Social Impact / Customer Satisfaction	Cloud computing offers a way to create, coordinate, and share information across the globe. The adoption of cloud-based services gives access to a wider range of data and sharing the important information in an efficient way. Our platform eliminates the spread of false news and exposes the injustice and wrongdoings done by false groups. Eliminating the fake news provides better understanding of the real-events happening in the world and the spread of knowledge.
5.	Business Model (Revenue Model)	Our application covers a range of topics including politics, business, criminal justice, environment, technology etc. Our business model will be monetized and generate income by showing advertisements and Operating on monthly and yearly subscription model.
6.	Scalability of the Solution	Scalability is one of the benchmarks of the cloud services and its adoption with businesses. Cloud scalability will help to increase the user-base by increasing the resource allocation and meeting the changing demands without sacrificing the efficiency or quality of our customer service and internal operations. Providing fast and reliable news while maintaining positive relationships with your customers.

3.4 Problem Solution fit

ProjectTitle: NewsTrackerApplication **ProjectDesignPhase-I-ProblemSolutionFit** **TeamID:**PNT2022TMID37091


DefineCS,fitintoCC
Focus onJ&P,tapintoBE,understandRC
IdentifystrongTR&EM
ExploreAS,differentiate
Focus onJ&P,tapintoBE,understandRC
Extractonline&offlineCHofBE

1.CUSTOMER SEGMENT(S)

Hackers,CCTNS(crime and criminal tracking network and system),commercial and scientific purposes,media monitoring.

6.CUSTOMER CONSTRAINTS

As much as service providers need to cater to the needs of their customers, it is just as important for them to satisfy their customers.

5.AVAILABLE SOLUTIONS

The internet and the intermingling of social media with important worldwide events has made it almost impossible to live under a rock. But finding a reliable one-stop shop to engage with your news can be somewhat of a challenge.

2.JOBS-TO-BE-DONE / PROBLEMS

We've written a whole white paper on the topic ,and examples of how our stories have produced such change-from the registration.

It corrupt officials to the passage of news laws-are compiled in our annual reports, on this page you'll find our reporting on the impact of our work.

9.PROBLEM ROOT CAUSE

User doesn't want to waste time figuring out the the relevance of the news young people don't read news from apps, usually depend on social media to get updated Users sometimes get overwhelmed by too many categories.

7.BEHAVIOUR

User experience,content performance popularity sharing the news, convertion rate optimization ,checkout process website acessebility,livechat and first and formost,user data is super important.

3.TRIGGERS

This news app is a big interactive database that think of it like would any other piece of journalism .It just uses software instead of words and pictures.

4.EMOTIONS: BEFORE /AFTER

Fearness,statisfaction,anger and two sentiments(positive and negative)using to extraction.

10. YOUR SOLUTION

Realtime monitoring ,working condition is ensured and restricted permission from entering highly secured areas.

8.CHANNELS of BEHAVIOURS

8.1 ONLINE

A few of these local stories were the result of formal partnerships, but the majority were done quite independently – in some cases, we didn't have much if any knowledge that the story .

8.2 OFFLINE

Although marketing has gone largely digital, the offline advertising world is still a significant one, means a lot of money gets spent on display ads.

4. REQUIREMENT ANALYSIS

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through online application Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User login	Login through browser directly by entering username and password Login through Login through email

FR-4	User interaction	Done through user interface between client and server View the related news by subscripted or requested page

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	**Non-Functional Requirement**	**Description**
NFR-1	**Usability**	End users can receive push updates for new content on a site by subscribing to the site’s news feed
NFR-2	**Security**	How well are the system and its data protected against attacks
NFR-3	**Reliability**	How often does the system experience critical failures? How much time does it take to fix the issue when it arises ?And how is user availability time compared to downtime?

NFR-4	**Performance**	Performance is the core non-functional requirements no system can do without. It defines how fast a software system or a particular piece of it responds to certain users actions under a certain workload. In most cases, this metric explains how long a user must wait before the target operation happens (the page renders, a transaction is processed, etc.) given the overall number of users at the moment. But it’s not always like that. Performance requirements may describe background
		processes invisible to users, e.g. backup. But let’s focus on user-centric performance.

NFR-5	**Availability**	Availabilitydescribes how likely the system is accessible to a user at a given point in time. While it can be expressed as an expected percentage of successful requests, you may also define it as a percentage of time the system is accessible for operation during some time period. For instance, the system may be available 98 percent of the time during a month. Availability is perhaps the most business-critical requirement, but to define it, you also must have estimations for reliability and maintainability.
NFR-6	**Scalability**	Scalabilityassesses the highest workloads under which the system will still meet the performance requirements. There are two ways to enable your system scale as the workloads get higher: horizontal and vertical scaling.

5. PROJECT DESIGN

5.1 Data Flow Diagrams.

Project Design Phase-II

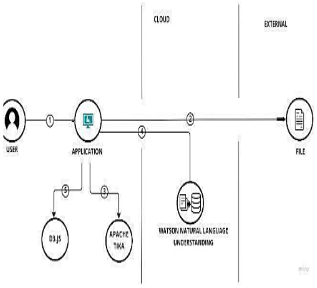
Data Flow Diagram

Date	15 October 2022
Team ID	PNT2022TMID37091
Project Name	NEWS TRACKER APPLICATION
Maximum Marks	4 Marks

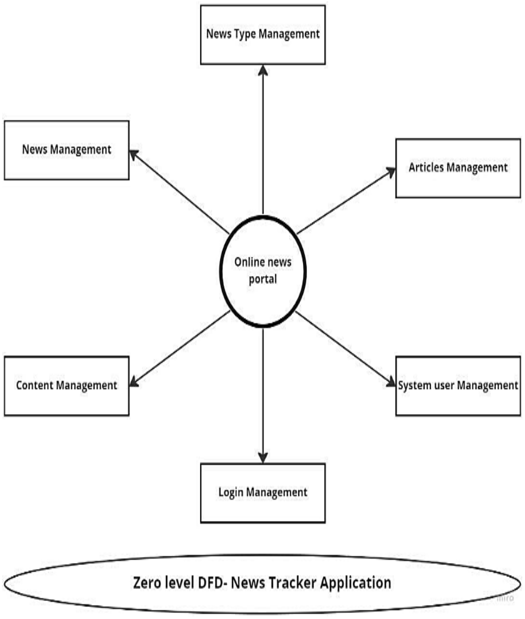
Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

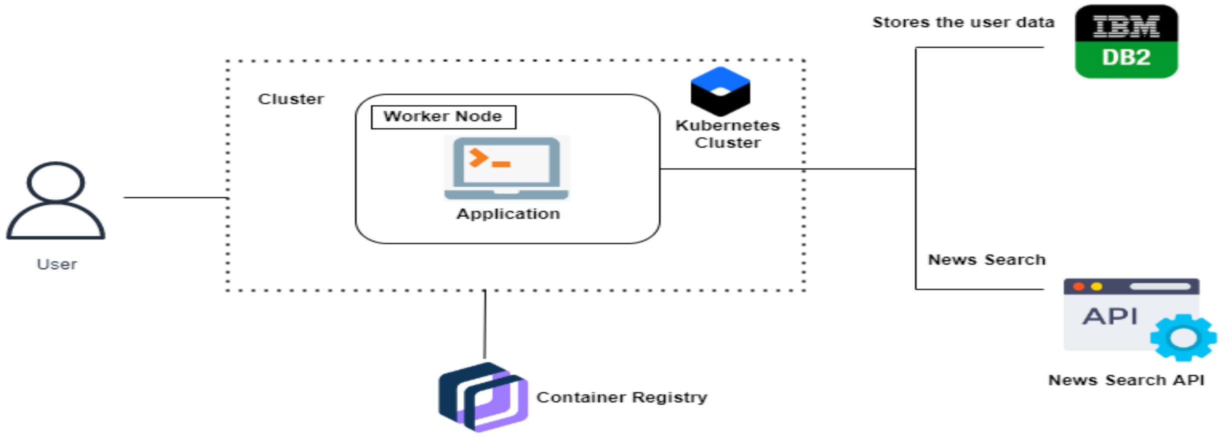
Example: **(Simplified)** Flow



1. User configures credentials for the Watson Natural Language Understanding service and starts the app.
2. Userselects data file to process andload.
3. Apache Tika extracts text from the data file.
4. Extracted text is passed to Watson NLUfor enrichment.
5. Enricheddata is visualized inthe UI using the D3.js library.



5.2 Solution & Technical Architecture

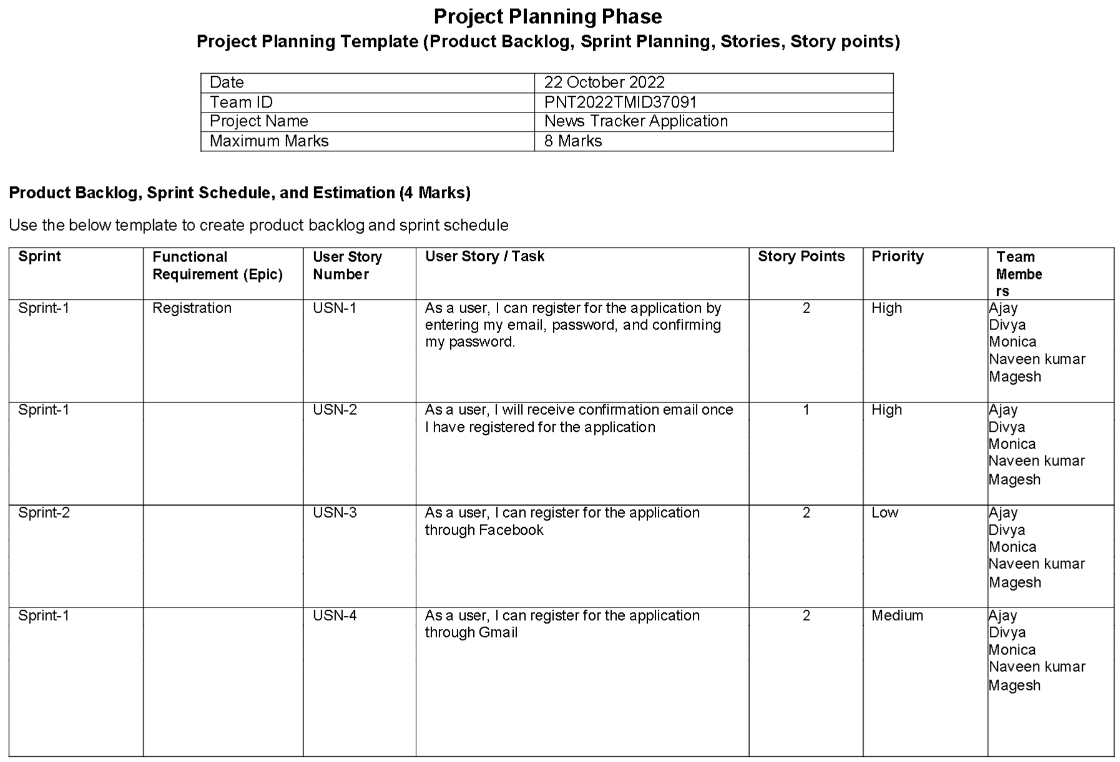


5.3 User Stories

Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Installation	USN-1	As a user, I installed the app for day-to-day update and feeds.	My app will be installed on home screen		
Customer (Mobile user)		USN-2	As a user, I can register for the application by entering my email, password, confirming my password and phone number.	I can access my account / dashboard	High	Sprint-1
		USN-3	As a user, I will receive conformation email once I have registered for the	I can receive conformation email &	High	Sprint-1
		USN-4	As a user, I can register for the application through Gmail	I can register & access the dashboard with Gmai account Login	Medium	Sprint-1
	Login	USN-6	As a user, I can log into the application by entering email & password	I can login to the official page	High	Sprint-1
	Dashboard	USN-7	Day to day news, feeds, categories, tech news and other updates	I can see all the news which I wanted	High	Sprint-1
Customer (Web user)	Browsing	USN-8	Enter the web site on the browser	I can even login through browser	Medium	Sprint-1

6. PROJECT PLANNING & SCHEDULING



Project Planning Phase

Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Date	22 October 2022
Team ID	PNT2022TMID37091
Project Name	News Tracker Application
Maximum Marks	8 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Membe rs
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Ajay Divya Monica Naveen kumar Magesh
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Ajay Divya Monica Naveen kumar Magesh
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2	Low	Ajay Divya Monica Naveen kumar Magesh
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium	Ajay Divya Monica Naveen kumar Magesh

Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	Ajay Divya Monica Naveen kumar Magesh
Sprint-3	Dashboard	USN-6	As a user, I will able to see the login and profile details	2	Medium	Ajay Divya Monica Naveen kumar Magesh
Sprint-4	Chat box	USN-8	As a customer care executive, I can ask about the inconvenience and the usability about the app	2	Medium	Ajay Divya Monica Naveen kumar Magesh
Sprint-1	IBM cloud	USN-10	As a tracker, I collect all the NEWS from the cloud	1	Medium	Ajay Divya Monica Naveen kumar Magesh
Sprint-3	IBM DB2	USN-11	As a database manager, I can collect all the user details and NEWS application details	2	Medium	Ajay Divya Monica Naveen kumar Magesh

Project Tracker, Velocity & Burndown Chart: (4 Marks)

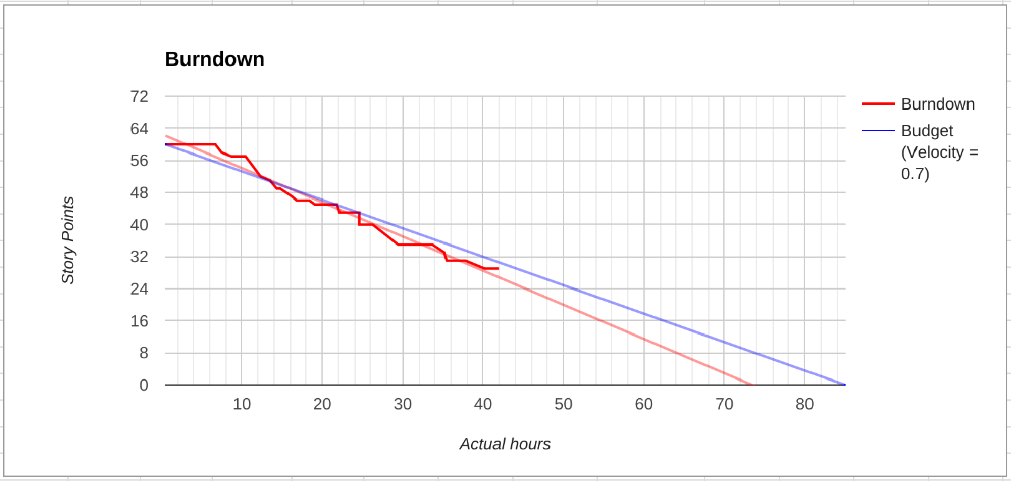
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

Velocity:

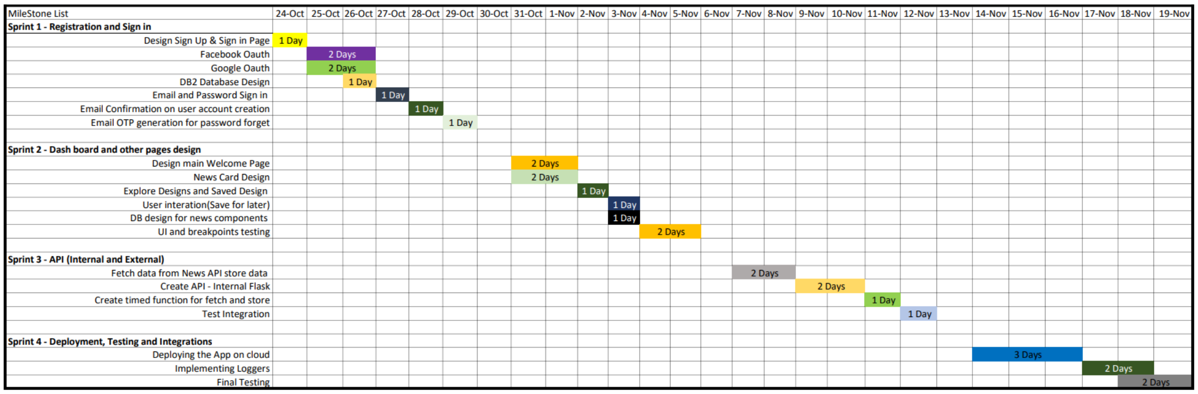
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

Burndown Chart:

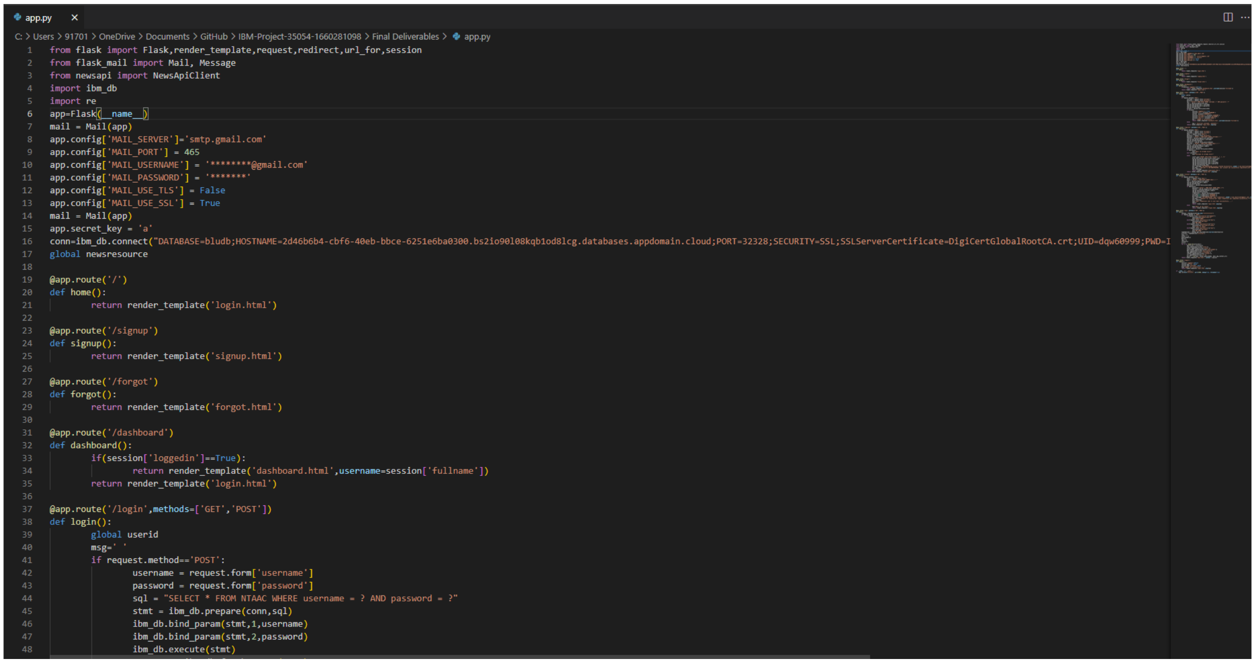


6.2 Sprint Delivery Schedule

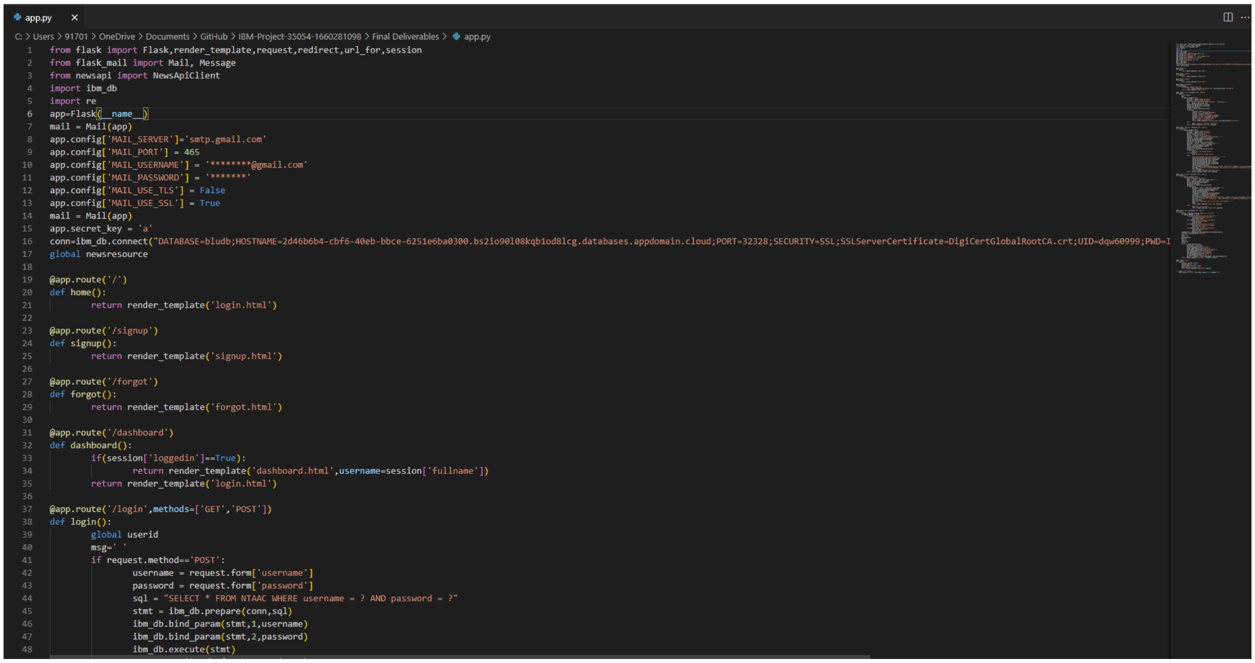


MileStone List	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov	9-Nov	10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov
Sprint 1 - Registration and Sign in																											
Design Sign Up & Sign in Page	1 Day																										
Facebook Oauth		2 Days																									
Google Oauth		2 Days																									
DB2 Database Design			1 Day																								
Email and Password Sign in				1 Day																							
Email Confirmation on user account creation					1 Day																						
Email OTP generation for password forget						1 Day																					
Sprint 2 - Dash board and other pages design																											
Design main Welcome Page								2 Days																			
News Card Design								2 Days																			
Explore Designs and Saved Design										1 Day																	
User interation(Save for later)											1 Day																
DB design for news components											1 Day																
UI and breakpoints testing												2 Days															
Sprint 3 - API (Internal and External)																											
Fetch data from News API store data															2 Days												
Create API - Internal Flask																	2 Days										
Create timed function for fetch and store																			1 Day								
Test Integration																				1 Day							
Sprint 4 - Deployment, Testing and Integrations																											
Deploying the App on cloud																						3 Days					
Implementing Loggers																									2 Days		
Final Testing																										2 Days	

7. CODING

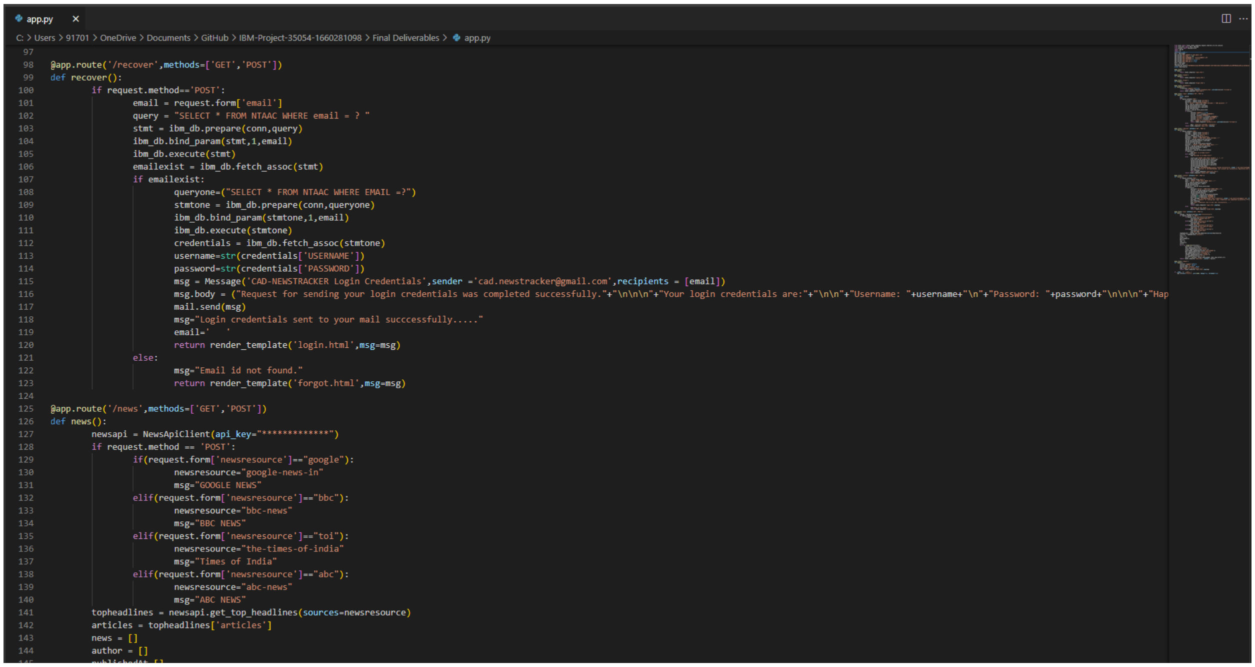


```python
from flask import Flask,render_template,request,redirect,url_for,session
from flask_mail import Mail, Message
from newsapi import NewsApiClient
import ibm_db
import re
app=Flask(__name__)
mail = Mail(app)
app.config['MAIL_SERVER']='smtp.gmail.com'
app.config['MAIL_PORT'] = 465
app.config['MAIL_USERNAME'] = '********@gmail.com'
app.config['MAIL_PASSWORD'] = '*******'
app.config['MAIL_USE_TLS'] = False
app.config['MAIL_USE_SSL'] = True
mail = Mail(app)
app.secret_key = 'a'
conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=2d46b6b4-cbf6-40eb-bbce-6251e6ba0300.bs2io90l08kqb1od8lcg.databases.appdomain.cloud;PORT=32328;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=dqw60999;PWD=I
global newsresource

@app.route('/')
def home():
        return render_template('login.html')

@app.route('/signup')
def signup():
        return render_template('signup.html')

@app.route('/forgot')
def forgot():
        return render_template('forgot.html')

@app.route('/dashboard')
def dashboard():
        if(session['loggedin']==True):
                return render_template('dashboard.html',username=session['fullname'])
        return render_template('login.html')

@app.route('/login',methods=['GET','POST'])
def login():
        global userid
        msg=' '
        if request.method=='POST':
                username = request.form['username']
                password = request.form['password']
                sql = "SELECT * FROM NTAAC WHERE username = ? AND password = ?"
                stmt = ibm_db.prepare(conn,sql)
                ibm_db.bind_param(stmt,1,username)
                ibm_db.bind_param(stmt,2,password)
                ibm_db.execute(stmt)
```

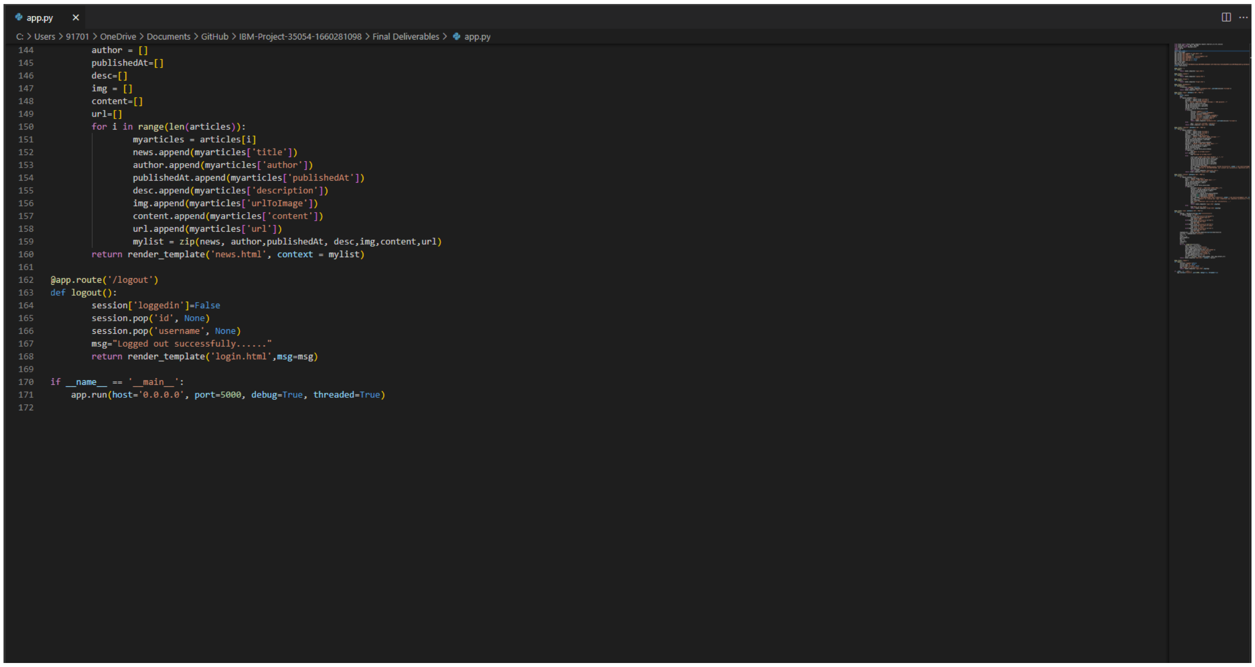


app.py
C: > Users > 91701 > OneDrive > Documents > GitHub > IBM-Project-35054-1660281098 > Final Deliverables > app.py

```python
from flask import Flask,render_template,request,redirect,url_for,session
from flask_mail import Mail, Message
from newsapi import NewsApiClient
import ibm_db
import re
app=Flask(__name__)
mail = Mail(app)
app.config['MAIL_SERVER']='smtp.gmail.com'
app.config['MAIL_PORT'] = 465
app.config['MAIL_USERNAME'] = '********@gmail.com'
app.config['MAIL_PASSWORD'] = '*******'
app.config['MAIL_USE_TLS'] = False
app.config['MAIL_USE_SSL'] = True
mail = Mail(app)
app.secret_key = 'a'
conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=2d46b6b4-cbf6-40eb-bbce-6251e6ba0300.bs2io90l08kqb1od8lcg.databases.appdomain.cloud;PORT=32328;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=dqw60999;PWD=I
global newsresource

@app.route('/')
def home():
        return render_template('login.html')

@app.route('/signup')
def signup():
        return render_template('signup.html')

@app.route('/forgot')
def forgot():
        return render_template('forgot.html')

@app.route('/dashboard')
def dashboard():
        if(session['loggedin']==True):
                return render_template('dashboard.html',username=session['fullname'])
        return render_template('login.html')

@app.route('/login',methods=['GET','POST'])
def login():
        global userid
        msg=' '
        if request.method=='POST':
                username = request.form['username']
                password = request.form['password']
                sql = "SELECT * FROM NTAAC WHERE username = ? AND password = ?"
                stmt = ibm_db.prepare(conn,sql)
                ibm_db.bind_param(stmt,1,username)
                ibm_db.bind_param(stmt,2,password)
                ibm_db.execute(stmt)
```


app.py
C: > Users > 91701 > OneDrive > Documents > GitHub > IBM-Project-35054-1660281098 > Final Deliverables > app.py

```python

@app.route('/recover',methods=['GET','POST'])
def recover():
        if request.method=='POST':
                email = request.form['email']
                query = "SELECT * FROM NTAAC WHERE email = ? "
                stmt = ibm_db.prepare(conn,query)
                ibm_db.bind_param(stmt,1,email)
                ibm_db.execute(stmt)
                emailexist = ibm_db.fetch_assoc(stmt)
                if emailexist:
                        queryone=("SELECT * FROM NTAAC WHERE EMAIL =?")
                        stmtone = ibm_db.prepare(conn,queryone)
                        ibm_db.bind_param(stmtone,1,email)
                        ibm_db.execute(stmtone)
                        credentials = ibm_db.fetch_assoc(stmtone)
                        username=str(credentials['USERNAME'])
                        password=str(credentials['PASSWORD'])
                        msg = Message('CAD-NEWSTRACKER Login Credentials',sender ='cad.newstracker@gmail.com',recipients = [email])
                        msg.body = ("Request for sending your login credentials was completed successfully."+"\n\n\n"+"Your login credentials are:"+"\n\n"+"Username: "+username+"\n"+"Password: "+password+"\n\n\n"+"Hap
                        mail.send(msg)
                        msg="Login credentials sent to your mail succcessfully....."
                        email='   '
                        return render_template('login.html',msg=msg)
                else:
                        msg="Email id not found."
                        return render_template('forgot.html',msg=msg)

@app.route('/news',methods=['GET','POST'])
def news():
        newsapi = NewsApiClient(api_key="*************")
        if request.method == 'POST':
                if(request.form['newsresource']=="google"):
                        newsresource="google-news-in"
                        msg="GOOGLE NEWS"
                elif(request.form['newsresource']=="bbc"):
                        newsresource="bbc-news"
                        msg="BBC NEWS"
                elif(request.form['newsresource']=="toi"):
                        newsresource="the-times-of-india"
                        msg="Times of India"
                elif(request.form['newsresource']=="abc"):
                        newsresource="abc-news"
                        msg="ABC NEWS"
        topheadlines = newsapi.get_top_headlines(sources=newsresource)
        articles = topheadlines['articles']
        news = []
        author = []
```


app.py
C: > Users > 91701 > OneDrive > Documents > GitHub > IBM-Project-35054-1660281098 > Final Deliverables > app.py

```python
        author = []
        publishedAt=[]
        desc=[]
        img = []
        content=[]
        url=[]
        for i in range(len(articles)):
                myarticles = articles[i]
                news.append(myarticles['title'])
                author.append(myarticles['author'])
                publishedAt.append(myarticles['publishedAt'])
                desc.append(myarticles['description'])
                img.append(myarticles['urlToImage'])
                content.append(myarticles['content'])
                url.append(myarticles['url'])
                mylist = zip(news, author,publishedAt, desc,img,content,url)
        return render_template('news.html', context = mylist)

@app.route('/logout')
def logout():
        session['loggedin']=False
        session.pop('id', None)
        session.pop('username', None)
        msg="Logged out successfully......"
        return render_template('login.html',msg=msg)

if __name__ == '__main__':
    app.run(host='0.0.0.0', port=5000, debug=True, threaded=True)

```

8. ADVANTAGES & DISADVANTAGES

1. This app can be accessed anywhere and anytime, So that the user can view the news
2. Its ad free
3. The news is only based on the API

4. It may contain some unwanted content but we don’t have control over it ● The user can bookmark their favourite news.

9. CONCLUSION

Thus we have developed a full stack application based on the plans and within the given time. We have tested the application in both desktop and mobile and it worked well, Overall it was a great experience.

10. FUTURE SCOPE

In future we may integrate our own news API instead of third party APIs and may develop a mobile native application so that it can be used in both android and ios.

11. APPENDIX

- *Source Code (Github)*