PANIMALAR INSTITUTE OF TECHNOLOGY

PROJECT REPORT

NEWS TRACKER APPLICATION

DONE BY

TEAM ID: PNT2022TMID25773

R ALWIN MATHEW	**(211519104015)**
T GANESHKUMAR	**(211519104043)**
S ELANCHEZIAN	**(211519104040)**
E LOKESH	**(211519104077)**

1. INTRODUCTION

1.1 Project Overview

NewsTracker is a fullstack web application which allows users to register along withtheir 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 Newcatcher API and CricbuzzAPI 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 timeto get information about a specific topic. Also enables a person to get an updated newswhich 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 unrelevant and updated news.

2.2 References

S. no	Paper title	Author	Published date	Implementation	Resource link
1	Following the Fed with a News Tracker	Michael William McCracken	January, 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 CitiGroup U.S Economic Surprise Index.	(PDF) Following the Fed with a News Tracker (researchgate.net)
2	Topic Detection and Tracking in News Articles	Sagar Patel, Sanket Suthar, Sandip Patel, Neha Patel	March, 2015	1. Pre-processing 2. Tokenization 3. Stemming/Lemmization 4. Vector Space Model 5. Topic tracking	(PDF) Topic Detection and Tracking in News Articles (researchgate.net)
3	An End-to-end Weakly-supervised News Aggregation Framework	Xijin Tang, Xiaohui Huang	June, 2022	The framework combines Snorkel based weakly Supervised classification, Latent Dirichlet Allocation (LDA) topic modeling, and topic signal detection model to classify and aggregate unlabeled news texts and ultimately generate visualized results containing news categories, news topics, and temporal topic relationships. This paper uses constructed knowledge thesaurus and the Snorkel method to weakly supervise the classification of unlabeled news with no manual tagging. Subsequently, we utilize LDA to generate the topics and	An End-to-end Weakly-supervised News Aggregation Framework | Request PDF (researchgate.net)

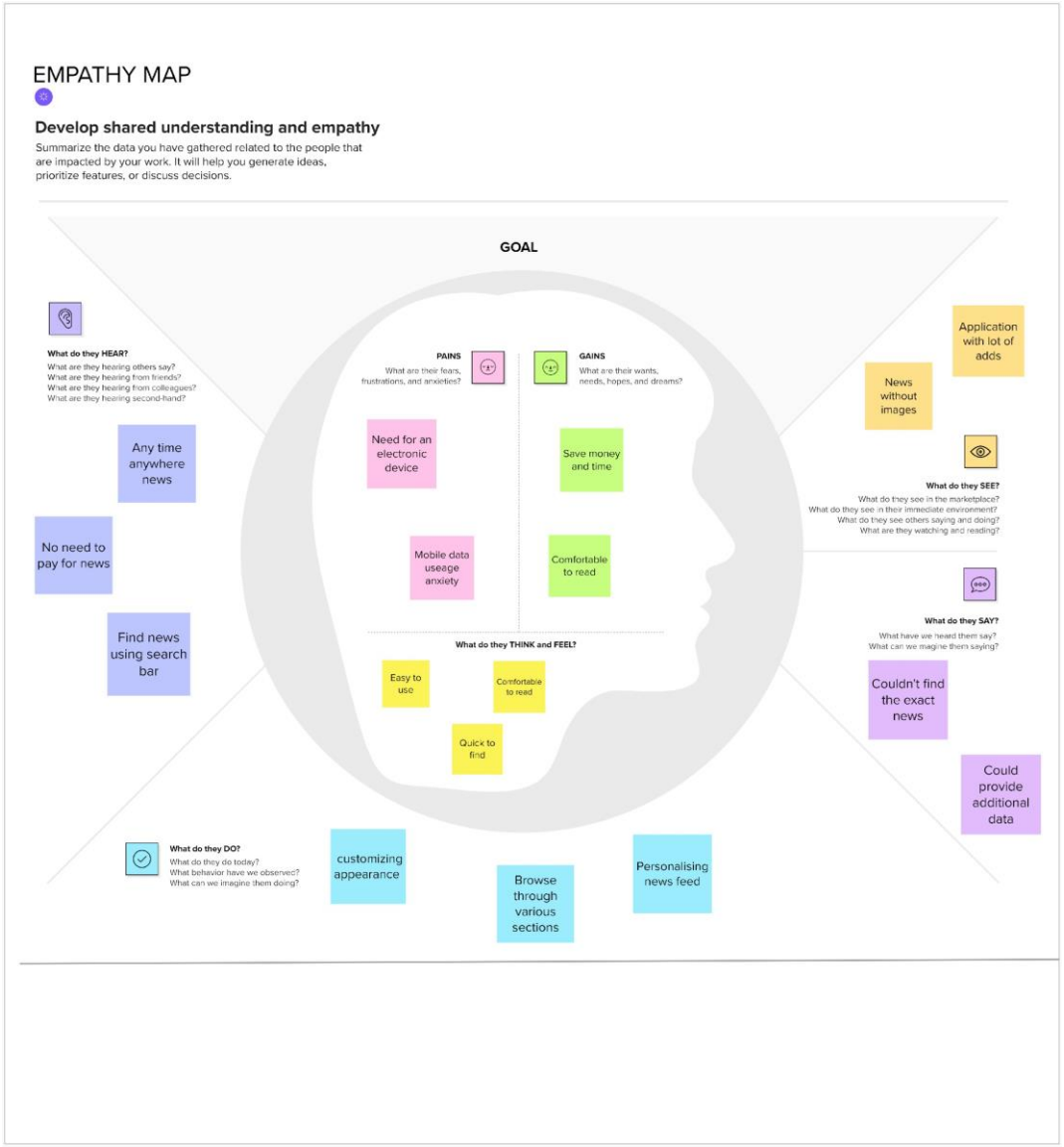
				obtain the signal value of each topic based on the topic signal detection function. Finally, we establish the temporal topic relationships and get the visualized results of news aggregation.	
4	Exploring mobile news reading interactions for news app personalisation	Marios Constantinides ,John Dowell , David Johson, Sylvain Malacria	August, 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	(PDF) Exploring mobile news reading interactions for news app personalisation (researchgate.net)
5	Innovative Application For News Tracker	Dr.C.K.Gomathy, Dr.V.Geetha, Peddireddy Abhiram, Marios Constantinides	September , 2020	This paper aimed at developing an online news management system that is of information to either a college. Online news management system provides a simple interface for maintenance of college information. The creation management of accurate,up-to-date information regarding to college.The main objective for developing this project is provide all the functionality related to latest news and it tracks.	(PDF) The Innovative Application for News Management System (researchgate.net)

2.3 Problem Statement Definition

Newspaper contains limited , non user/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.

3. IDEATION & PROPOSED SOLUTION

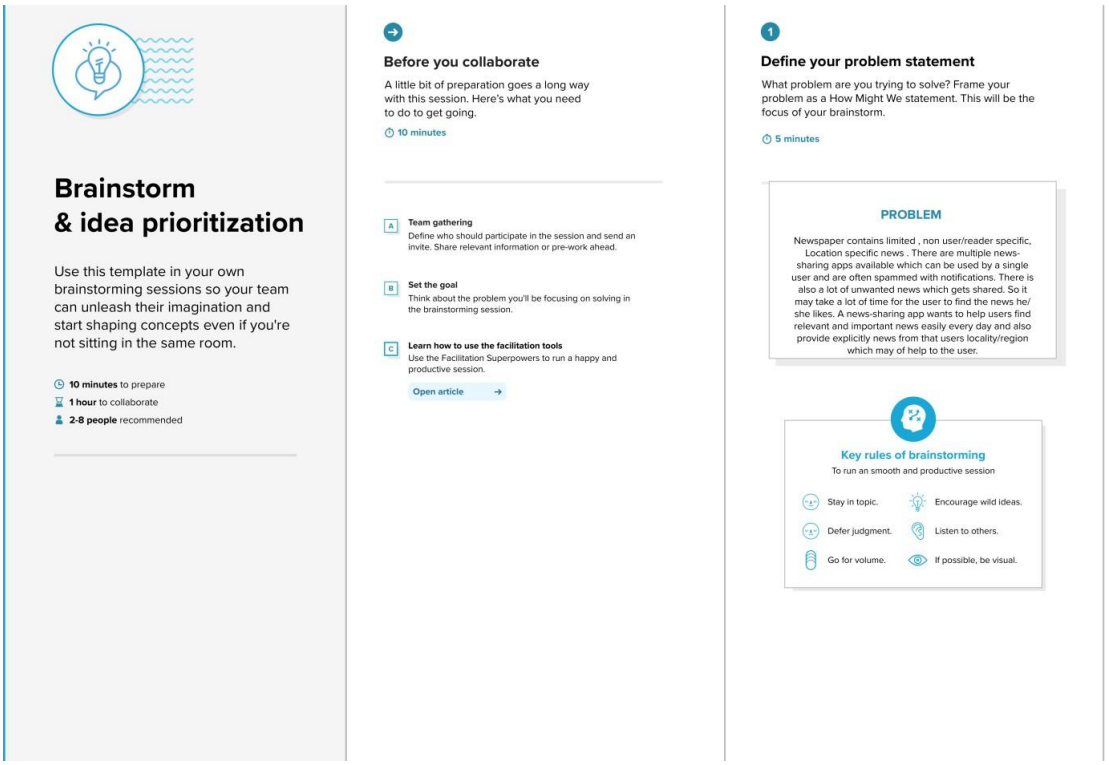
3.1 Empathy Map Canvas



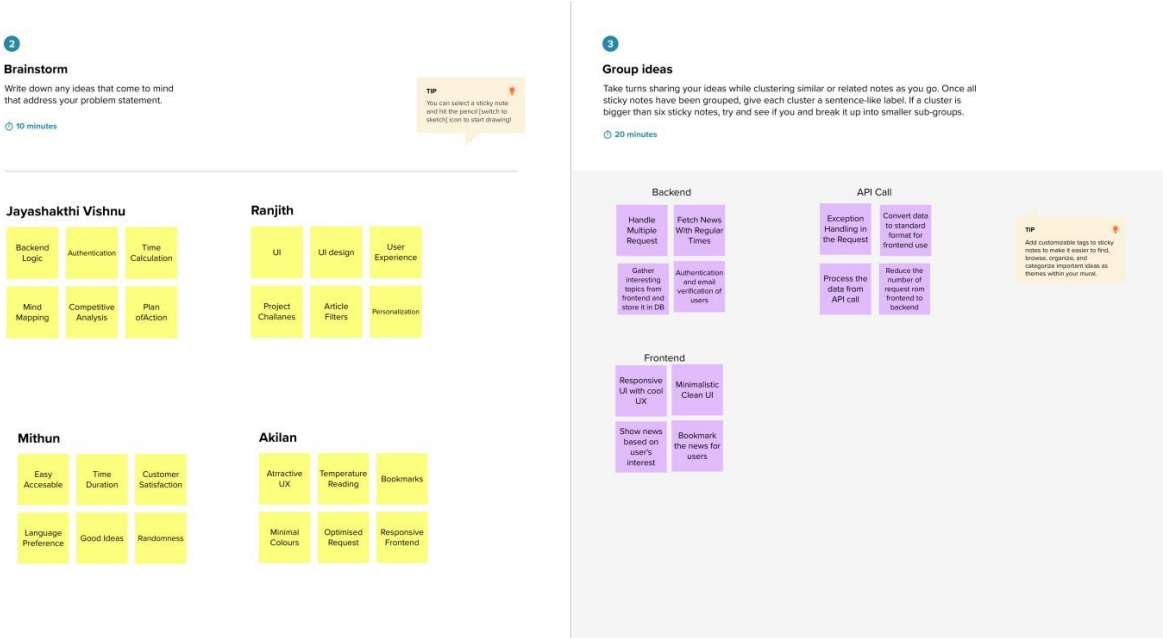
3.2 Ideation & Brainstorming

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. Prioritizingvolume 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.

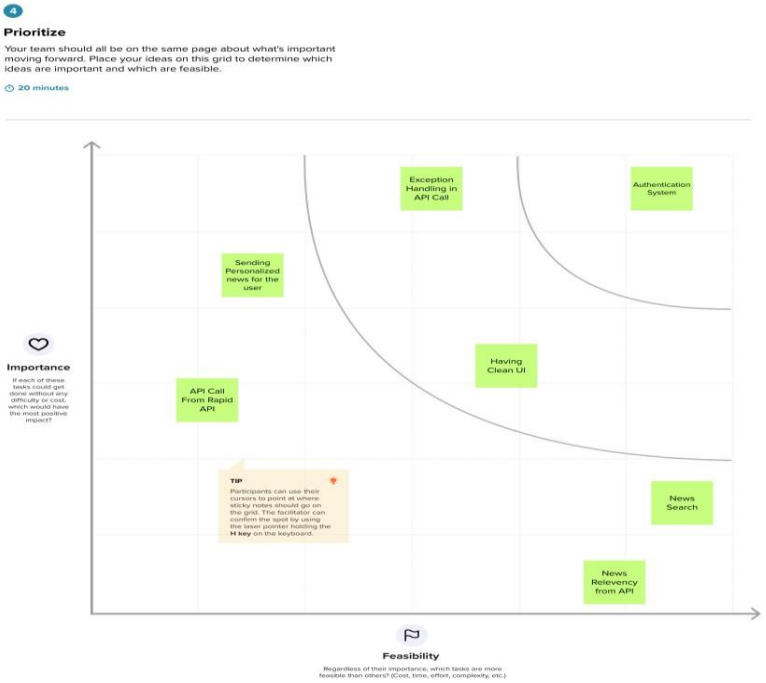
Step-1: Team Gathering, Collaboration and Select the Problem Statement



Step-2: Brainstorm, Idea Listing and Grouping



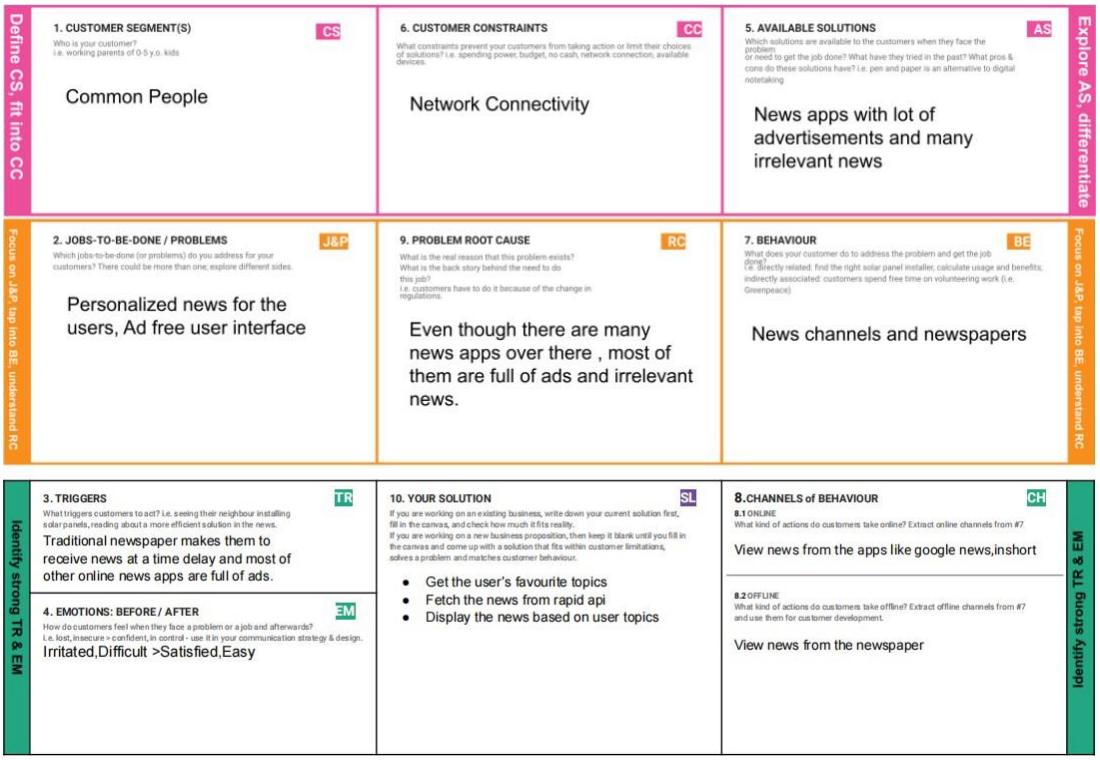
Step-3: Idea Prioritization



3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Most people don't like to carry a newspaper with them. Some people want them to be updated only in the area they are interested in
2.	Idea / Solution description	An application needs to be developed in which users can read news whenever they want and they will be able to customize their area of interest. So that they will be notified, if any new news is updated in their interested areas.
3.	Novelty / Uniqueness	A user can read news only from their interested fields rather than reading all the news. This application provides users with a trusted and secured ecosystem. News shared through the application is original and spam free.
4.	Social Impact / Customer Satisfaction	This application encourages its users to provide feedback. Based on that feedback, developments were made eventually.
5.	Business Model (Revenue Model)	Add advertisements to the application, so that we can get revenue from those advertisement-sponsored organizations. More advertisements may irritate the user. Add premium subscription, users who subscribe for premium won't get advertisements.
6.	Scalability of the Solution	As it was an application-based project, correct ideation and execution can develop an application with no bugs and errors, so that the user might like our application and some might suggest and share it to their surroundings, resulting in an increase in our application insights.

3.4 Problem Solution fit



4. REQUIREMENT ANALYSIS

4.1 Functional requirement

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Email
FR-2	User Confirmation	Confirmation via Email using Sendgrid
FR-3	User Preffered Topics	Collecting user's favourite topics
FR-4	Collecting News	Collecting news from rapid API at regular Intervals
FR-5	Bookmark	Bookmarking Favourite news for the user
FR-6	Login	Loging in the user using the registered email and password
FR-7	News Feed	Showing the news fetched from the API to the user

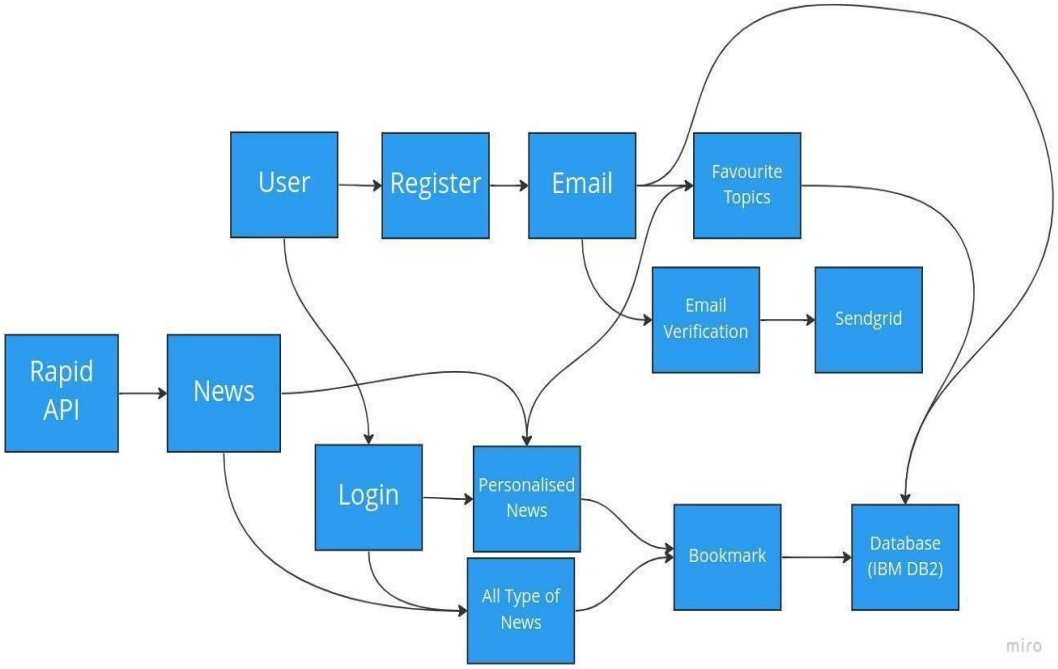
4.2 Non-Functional requirements

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The app should be able to used by all people
NFR-2	**Security**	The app should authenticate the legitimate users and should restrict bot attacks
NFR-3	**Reliability**	The app should show the news which are non fake and spam free
NFR-4	**Performance**	The app should be accessible in older devices too
NFR-5	**Availability**	The app should be available to all devices
NFR-6	**Scalability**	The app should handle multiple users and be designed in such a way for future upgrade

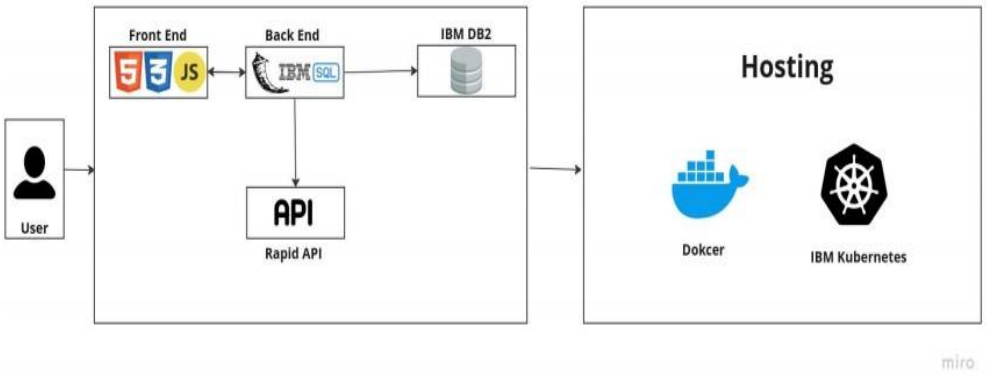
5. PROJECT DESIGN

5.1 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.



5.2 Solution & Technical Architecture



5.3 User Stories

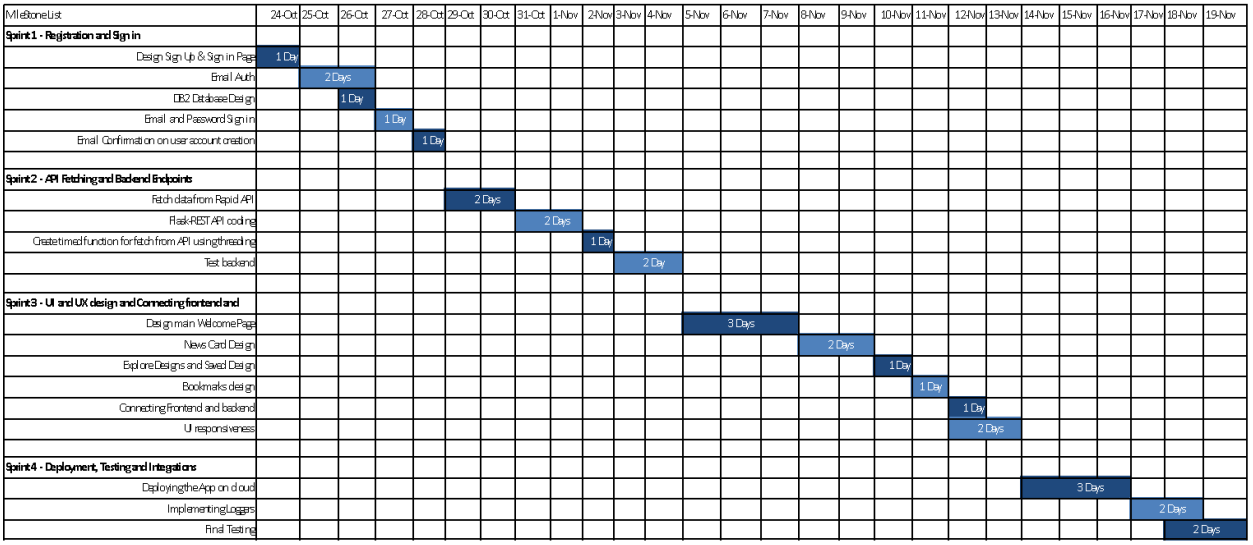
User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Normal User	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
	Email Verification	USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
	Favourite topics	USN-3	As a user, I can choose my favourite topics	I can see all my preferred news under for you category	Medium	Sprint-2
	Login	USN-4	As a user, I can login with the email and password into the app	I can access to all the news	High	Sprint-1
	Dashboard	USN-5	As a user, I can see all the news under specific tab	I can view all the news	Medium	Sprint-3
	Bookmark	USN-6	As a user, I can bookmark my favourite news topics	I can later view my bookmarked news	Low	Sprint-2
	Access	USN-7	As a user, I can access the site anywhere andeverywhere	I can view the site by typing the URL of the site	High	Sprint-4

6. PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registeration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	10	High	R Alwin mathew T Ganesh kumar
Sprint-1	Login	USN-2	As a user, I will receive confirmation email once I have registered for the application	5	High	Lokesh E Elanchezain S
Sprint-1	Email Verification	USN-3	As a user I can verify my email using the link sent to my mailid	5	High	Lokesh E Elanchezain S
Sprint-2	API Fetch	USN-4	Fetch News from Rapid API at regular interval	10	High	R Alwin mathew T Ganesh kumar
Sprint-2	REST Endpoints for backend	USN-5	Creating endpoints at the backend inorder to interact with frontend	10	Medium	Lokesh E Elanchezain S
Sprint-3	Designing Frontend	USN-6	Create a minimalisting design in figma to create frontend	2	Medium	R Alwin mathew T Ganesh kumar
Sprint-3	Creating Frontend	USN-7	Create the frontend webpage using the design	10	Low	R Alwin mathew T Ganesh kumar
Sprint-3	Connect frontend and backend	USN-8	Connect the frontend and backend and complete the application	8	High	, Lokesh E Elanchezain S
Sprint-4	Testing	USN-9	Testing the application before final release	10	High	R Alwin mathew T Ganesh kumar
Sprint-4	Deployment	USN-10	Deployment of the application	10	High	R Alwin mathew T Ganesh kumar

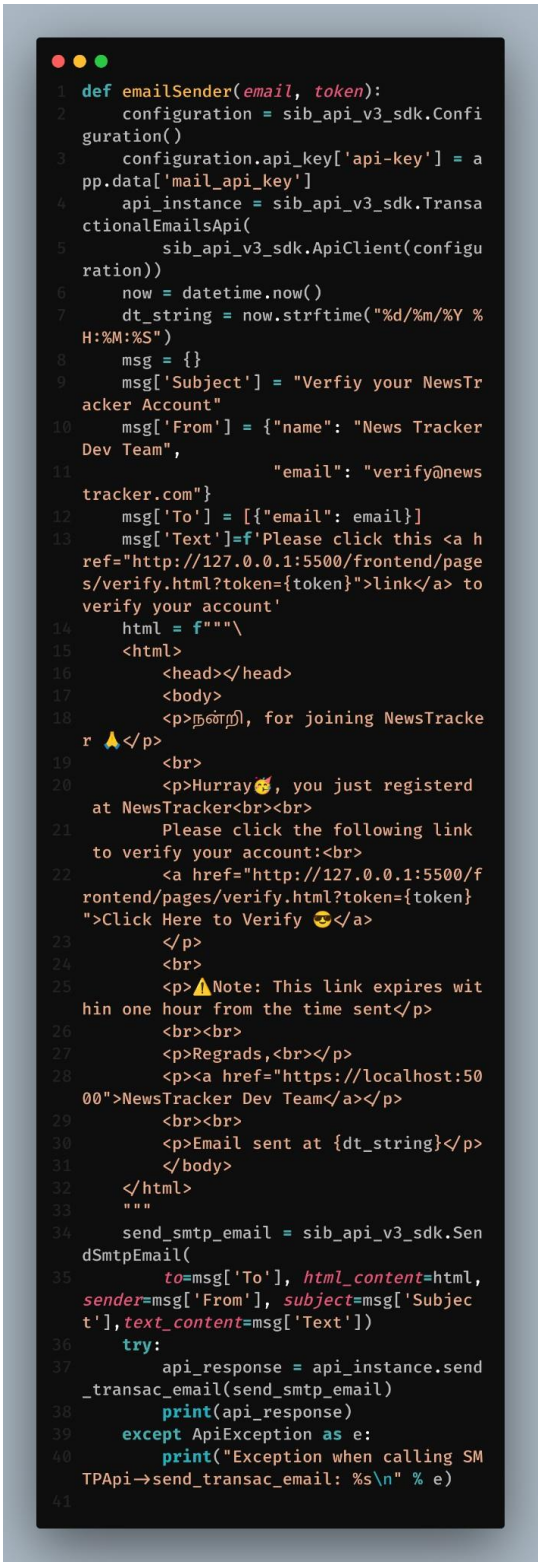
6.2 Sprint Delivery Schedule



7. CODING & SOLUTIONING (Explain the features added in the project along with code)

7.1 Feature 1

Verification email Sender

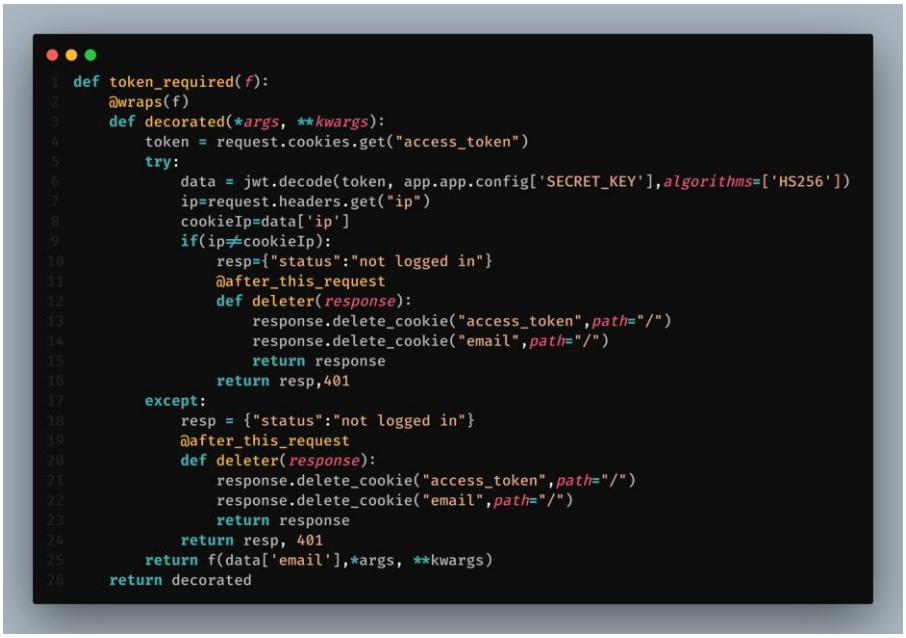


```
def emailSender(email, token):
    configuration = sib_api_v3_sdk.Configuration()
    configuration.api_key['api-key'] = app.data['mail_api_key']
    api_instance = sib_api_v3_sdk.TransactionalEmailsApi(
        sib_api_v3_sdk.ApiClient(configuration))
    now = datetime.now()
    dt_string = now.strftime("%d/%m/%Y %H:%M:%S")
    msg = {}
    msg['Subject'] = "Verfiy your NewsTracker Account"
    msg['From'] = {"name": "News Tracker Dev Team",
                   "email": "verify@newstracker.com"}
    msg['To'] = [{"email": email}]
    msg['Text']=f'Please click this <a href="http://127.0.0.1:5500/frontend/pages/verify.html?token={token}">link</a> to verify your account'
    html = f"""\
    <html>
        <head></head>
        <body>
        <p>நன்றி, for joining NewsTracker 🙏</p>
        <br>
        <p>Hurray🥳, you just registerd at NewsTracker<br><br>
        Please click the following link to verify your account:<br>
        <a href="http://127.0.0.1:5500/frontend/pages/verify.html?token={token}">Click Here to Verify 😎</a>
        </p>
        <br>
        <p>⚠️Note: This link expires within one hour from the time sent</p>
        <br><br>
        <p>Regrads,<br></p>
        <p><a href="https://localhost:5000">NewsTracker Dev Team</a></p>
        <br><br>
        <p>Email sent at {dt_string}</p>
        </body>
    </html>
    """
    send_smtp_email = sib_api_v3_sdk.SendSmtpEmail(
        to=msg['To'], html_content=html, sender=msg['From'], subject=msg['Subject'],text_content=msg['Text'])
    try:
        api_response = api_instance.send_transac_email(send_smtp_email)
        print(api_response)
    except ApiException as e:
        print("Exception when calling SMTPApi->send_transac_email: %s\n" % e)
```

The above function is used to sned the verification code to the desired email.

7.2 Feature 2

Cookie Checker



```python
def token_required(f):
    @wraps(f)
    def decorated(*args, **kwargs):
        token = request.cookies.get("access_token")
        try:
            data = jwt.decode(token, app.app.config['SECRET_KEY'],algorithms=['HS256'])
            ip=request.headers.get("ip")
            cookieIp=data['ip']
            if(ip≠cookieIp):
                resp={"status":"not logged in"}
                @after_this_request
                def deleter(response):
                    response.delete_cookie("access_token",path="/")
                    response.delete_cookie("email",path="/")
                    return response
                return resp,401
        except:
            resp = {"status":"not logged in"}
            @after_this_request
            def deleter(response):
                response.delete_cookie("access_token",path="/")
                response.delete_cookie("email",path="/")
                return response
            return resp, 401
        return f(data['email'],*args, **kwargs)
    return decorated
```

This code is used to check the cookie from the client side and checks wether the user is signed in or not.

7.3 Database Schema (if Applicable)

User Table

Table definition

USER

Approximate 2 rows (4.03 MB)
Updated on 2022-10-17 15:43:28

Name	Data type	Nullable	Length	Scale
ID	INTEGER	N		0
NAME	VARCHAR	N	255	0
EMAIL	VARCHAR	N	255	0
PASSWORD	VARCHAR	N	255	0
FAVOURITES	CLOB	Y	1048576	0
BOOKMARKS	CLOB	Y	1048576	0
VERIFIED	BOOLEAN	Y	1	0
RESEND_TIME	VARCHAR	N	255	0

Bookmarks Table:

Table definition

BOOKMARK

Approximate -1 rows (4.00 MB)
Updated on

Name	Data type	Nullable	Length	Scale
ID	INTEGER	N		0
DATA	CLOB	N	1048576	0

8. ADVANTAGES & DISADVANTAGES

- This app can be accessed anywhere and anytime, So that the user can view the news
- Its ad free
- The news is only based on the API
- 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)
- Live Page URL