NALAIYA THIRAN - IBM PROJECT REPORT

(19CS406T Professional Readiness for Innovation, Employability and Entrepreneurship)

ON

CLOUD BASED NEWS TRACKER APPLICATION

Submitted by

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in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

VELAMMAL ENGINEERING COLLEGE,CHENNAI-66.

(An Autonomous Institution, Affiliated to Anna University, Chennai)

2022-2023

VELAMMAL ENGINEERING COLLEGE
CHENNAI -66

(An Autonomous Institution, Affiliated to Anna University, Chennai)

BONAFIDE CERTIFICATE

Certified that this NALAIYA THIRAN – IBM PROJECT REPORT **"CLOUD BASED NEWS TRACKER APPLICATION"** is the Bonafidework of "ALBIN A (113219031007), ASHKAR ALI A (113219031018), DHANUSH P (113219031035), and MANIKANDAN N (113219031085)" carried out in "PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP (NALAIYA THIRAN-IBM PROJECT)**"** during the Academic Year 2022-2023.

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1.INTRODUCTION

1.1 **Project Overview**

NewsTracker is a fullstack 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 Newcatcher API and Cricbuzz 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 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	(PDF) Topic Detection and Tracking in News Articles (researchgate.net)

				Model 5. Topic tracking	
3	An End-to-end Weaklysupervised 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	An End-to-end Weakly-supervised News Aggregation Framework | Request PDF (researchgate.net)

				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	
				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 personalisati on	Marios Constantinid es ,John Dowell , David Johson, Sylvain Malacria	August, 2015	1. Identificati on of newsreader types 2. Interaction logging andclassifica tion study 3. Deployment and datacollecti on 4. Predicting News readertypes 5. Adaptive UI	(PDF) Exploring mobile news reading interaction s for news app personalisa tion (researchga te.net)

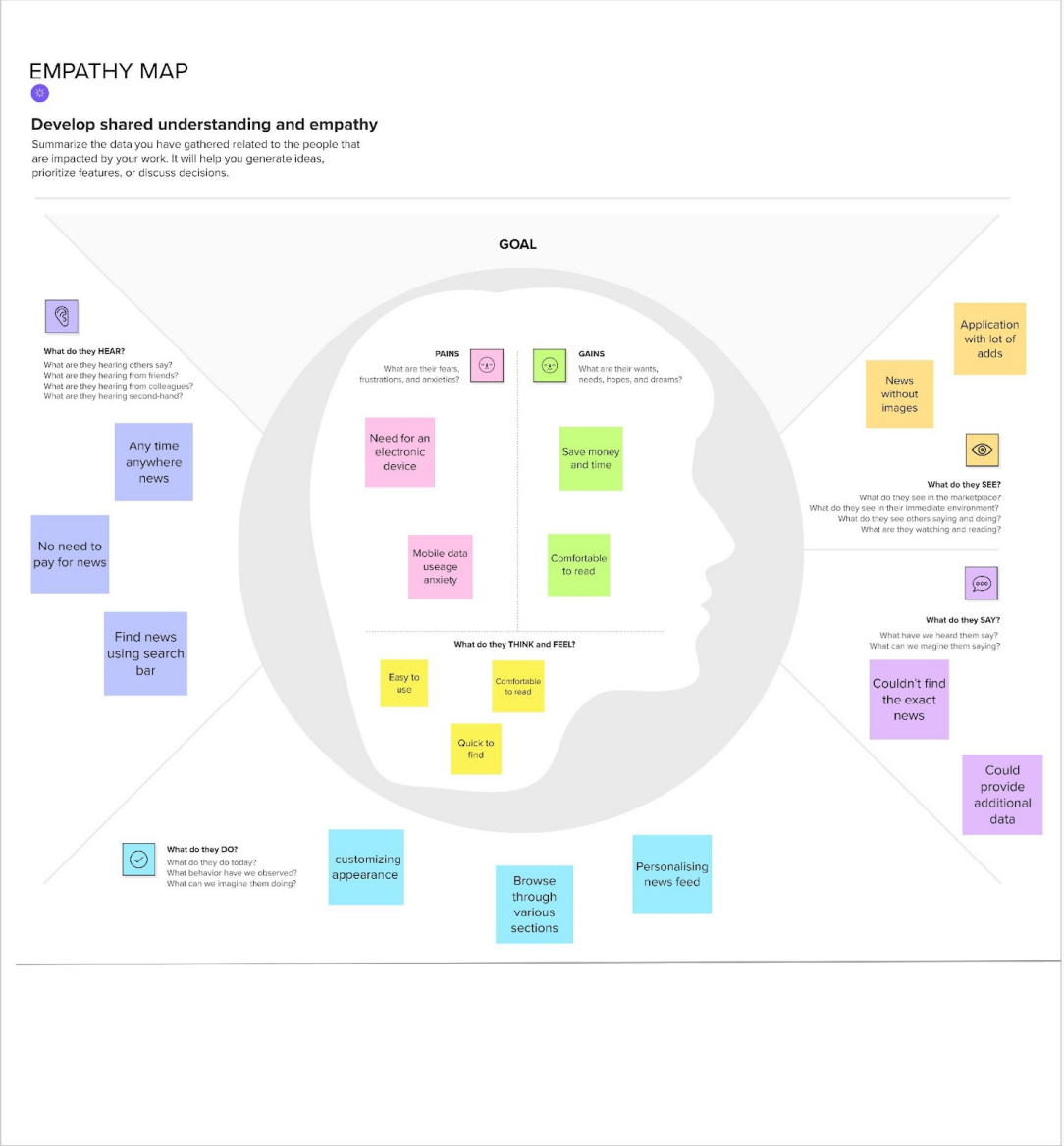
5	Innovative Application For News Tracker	Dr.C.K.Gomathy, Dr.V.Geetha, Peddireddy Abhiram, Marios Constantinides	September , 2020	This paper aimed at developing an online news management system that is of information to either a college. Online news management system provides a simple interface for maintenance 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

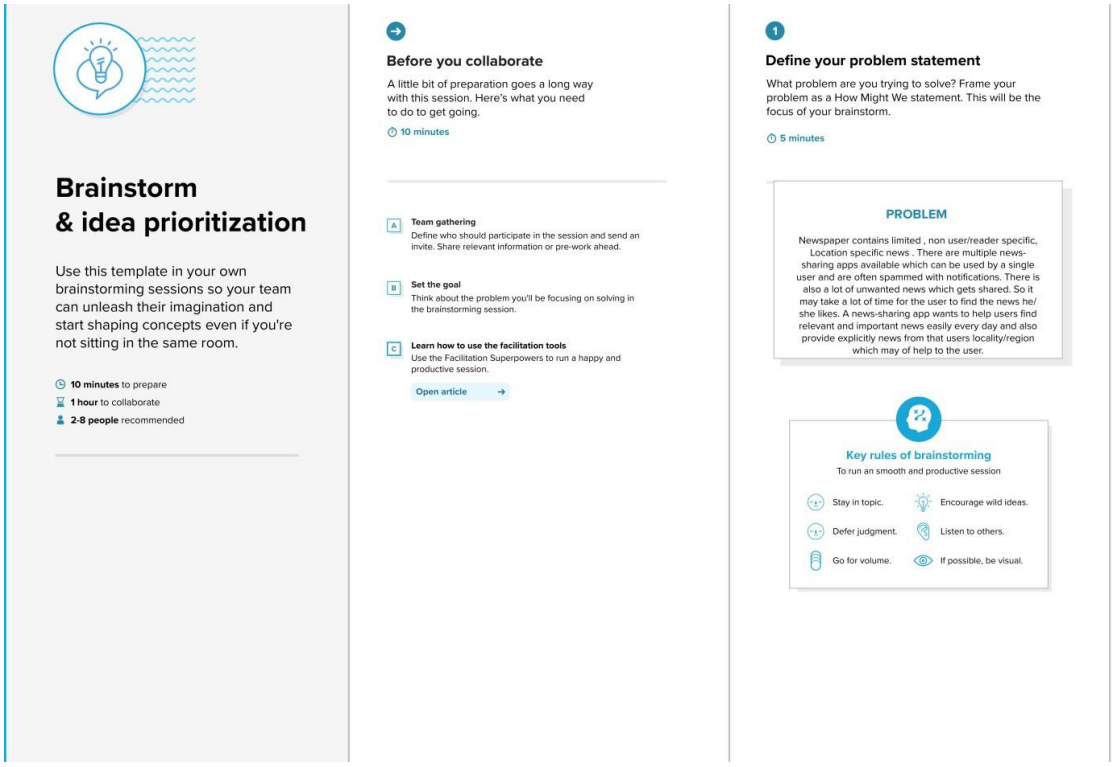
3.1 Empathy Map Canvas



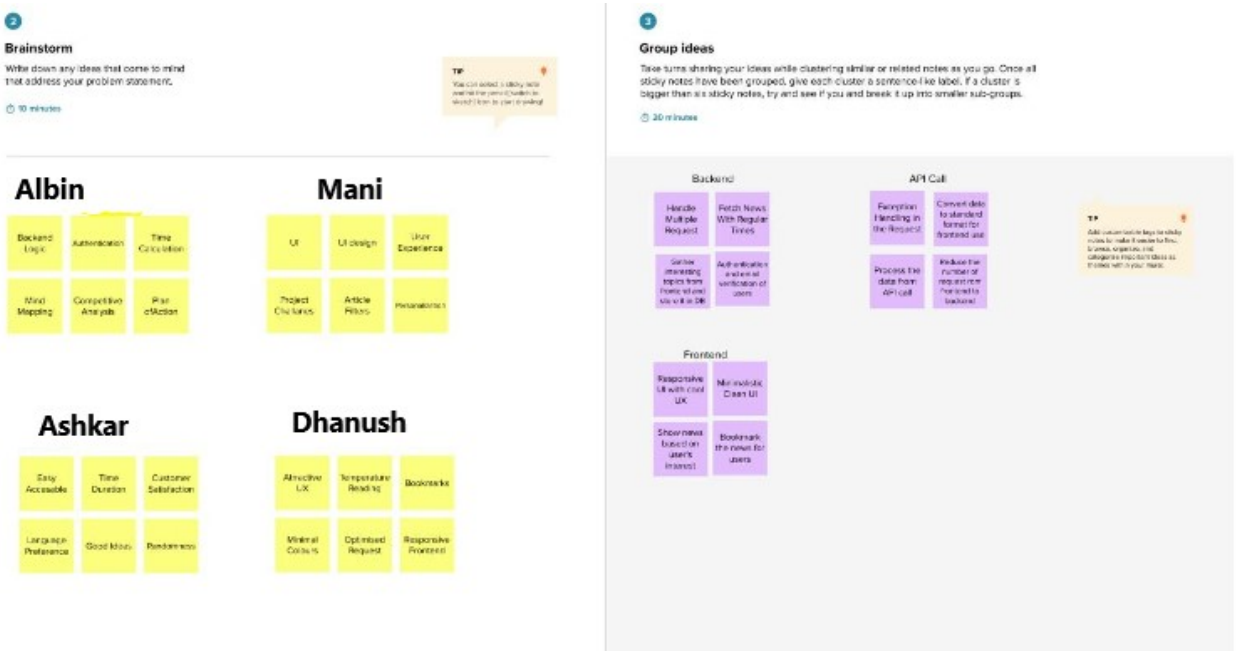
3.2 Ideation & Brainstorming

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. 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.

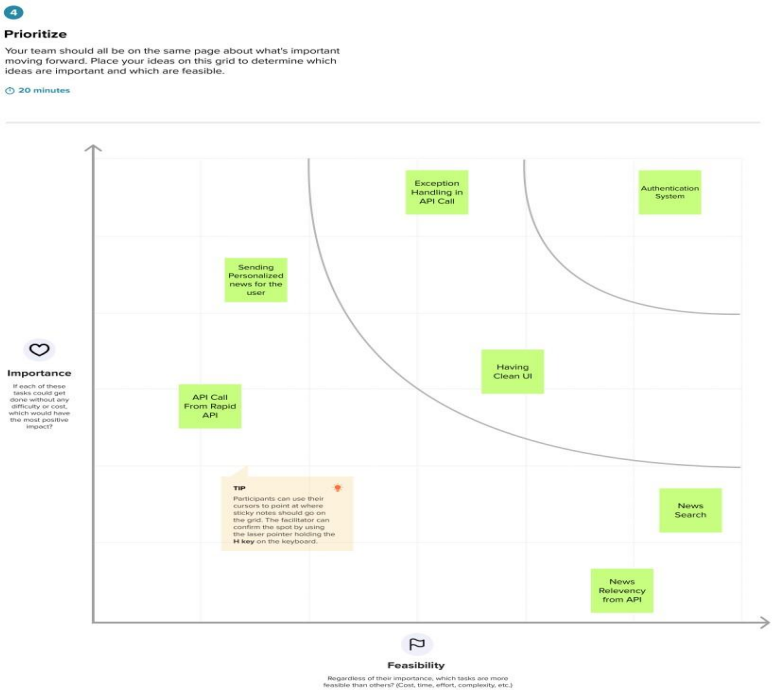
Step-1: Team Gathering, Collaboration and Select the Problem Statement



Step-2: Brainstorm, Idea Listing and Grouping



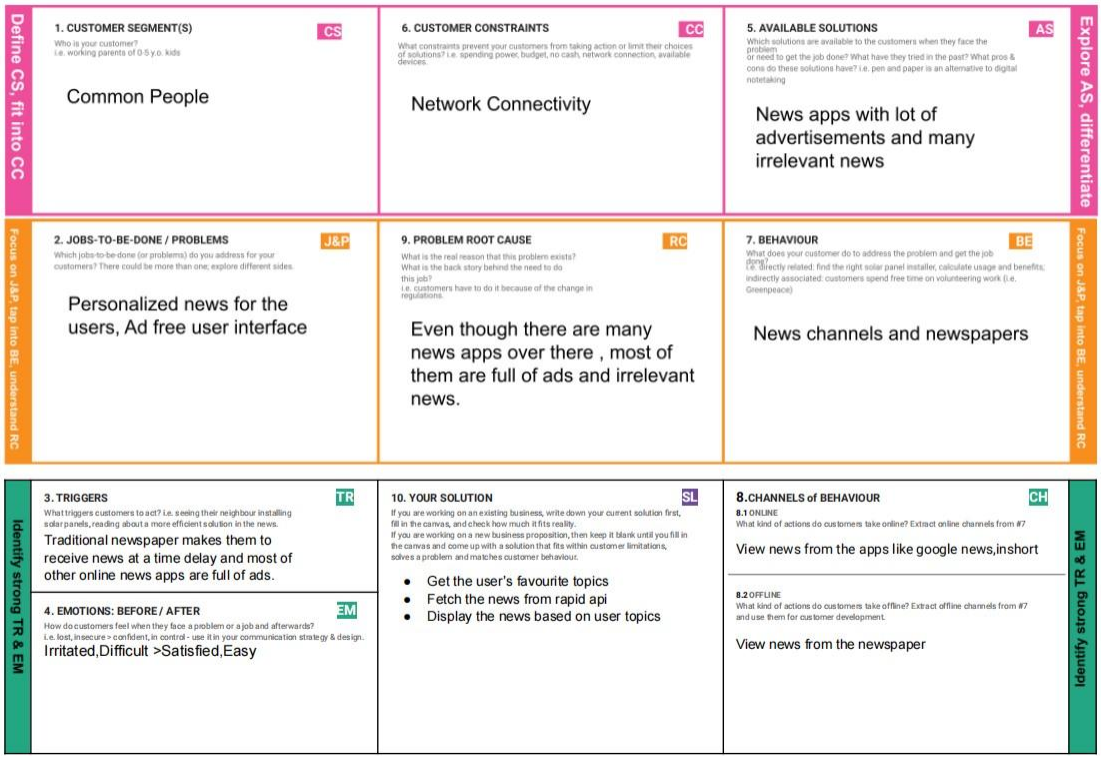
Step-3: Idea Prioritization



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

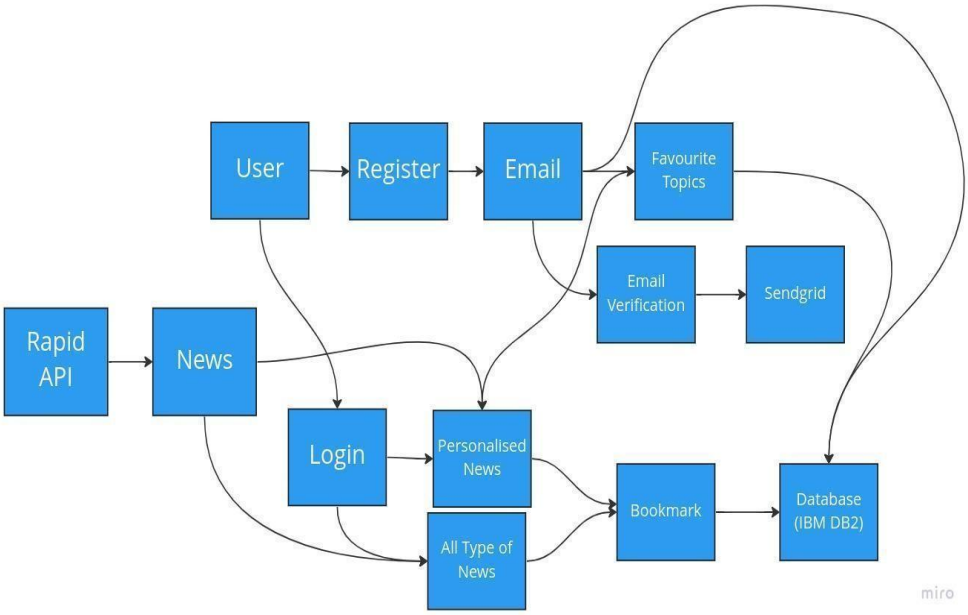
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The app should be able to used by all people
NFR-2	**Security**	The app should authenticate the legitimate users and should restrict bot attacks
NFR-3	**Reliability**	The app should show the news which are non fake and spam free
NFR-4	**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

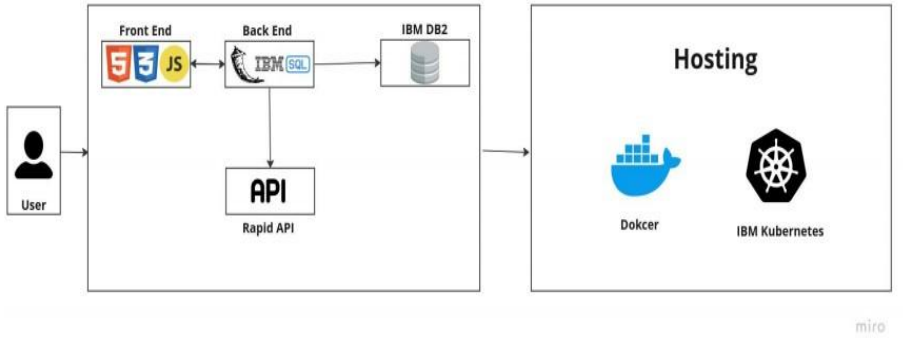
5.PROJECT DESIGN

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.	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	can receive confirmation email & click confirm	High	Sprint-1
	Favourite topics	USN-3	As a user, m I can y choose favourite topics	can see all my preferred news under for you category	Medi um	Sprint-2
	Login	USN-4	As a t user, I he can login t with he email and password into app	can access to all the news	High	Sprint-1

	Dashboard	USN-5	As a user, t I can see he all news under specific tab	can view all the news	Medi um	Sprint-3
	Bookmark	USN-6	As a user, my I can bookmark favourite news topics	can later view my bookmark ed news	Low	Sprint-2
	Access	USN-7	As a user, I can access the site anywhere and everywhere	can view the site by typing the URL of the site	High	Sprint-4

6. PROJECT PLANNING & SCHEDULING

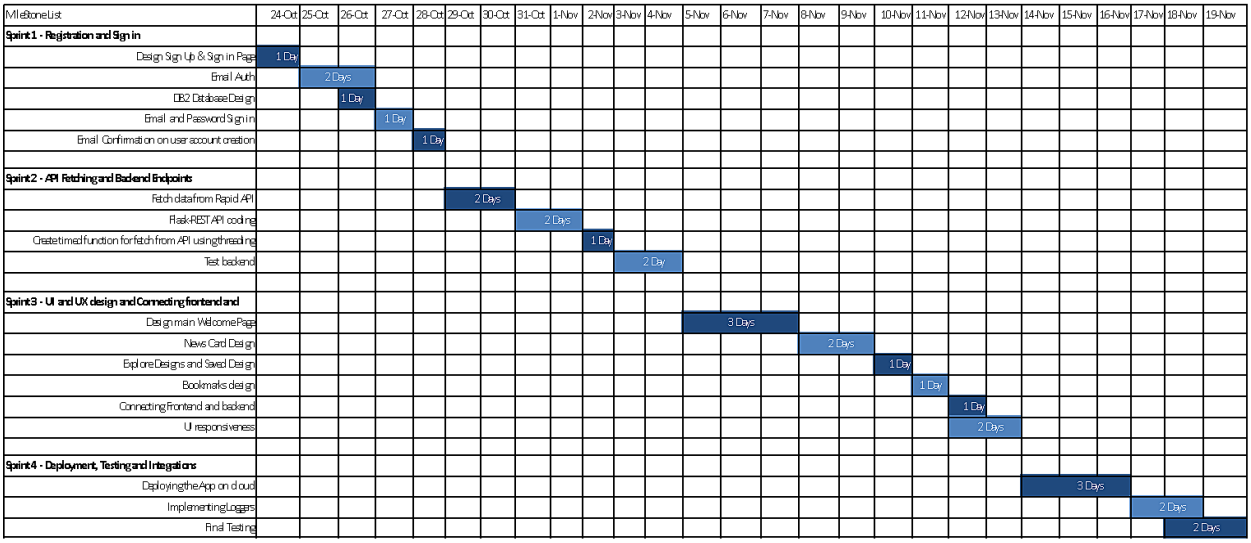
6.1 Sprint Planning & Estimation

Spri nt	Functional Requireme nt (Epic)	User Story Numb	User Story / Task	Story Poin ts	Priori ty	Team Membe rs

		er				
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	Albin, Mani
Sprint-1	Login	USN-2	As a user, I will receive confirmation email once I have registered for the application	5	High	Albin, Mani
Sprint-1	Email Verification	USN-3	As a user I can verify my email using the link sent to my mailid	5	High	Albin, Mani
Sprint-2	API Fetch	USN-4	Fetch News from Rapid API at regular interval	10	High	Dhanush, Ashkar

Sprint-2	REST Endpoints for backend	USN-5	Creating endpoints at the backend inorder to interact with frontend	10	Medium	Dhanush, Ashkar
Sprint-3	Designing Frontend	USN-6	Create a minimalisting design in figma to create frontend	2	Medium	Albin
Sprint-3	Creating Frontend	USN-7	Create the frontend webpage using the design	10	Low	Albin, Mani
Sprint-3	Connect frontend and backend	USN-8	Connect the frontend and backend and complete the application	8	High	Albin, Mani, Dhanush, Ashkar
Sprint-4	Testing	USN-9	Testing the application before final release	10	High	Albin, Mani, Dhanush, Ashkar
Sprint-4	Deployment	USN-10	Deployment of the application	10	High	Albin, Mani, Dhanush, Ashkar

6.2 Sprint Delivery Schedule



7.CODING & SOLUTIONING

7.1 Feature 1

Python

- Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

- Python is dynamically-typed and garbage-collected.
- It supports multiple programming paradigms, including structured (particularly procedural), object-oriented and functional programming.
- It is often described as a "batteries included" language due to its comprehensive standard library.
- Guido van Rossum began working on Python in the late 1980s as a successor to the ABC programming language and first released it in 1991 as Python 0.9.0.
- Python 2.0 was released in 2000 and introduced new features such as list comprehensions, cycle-detecting garbage collection, reference counting, and Unicode support.
- Python 3.0, released in 2008, was a major revision that is not completely backward-compatible with earlier versions.
- Python consistently ranks as one of the most popular programming languages

7.2 Feature 2 :

Flask

- Flask is a micro web framework written in Python.
- It is classified as a microframework because it does not require particular tools or libraries.
- It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.
- However, Flask supports extensions that can add application features as if they were implemented in Flask itself.
- Extensions exist for object-relational mappers, form validation, upload handling, various open authentication technologies and several common framework related tools.
- Applications that use the Flask framework include Pinterest and LinkedIn.
- Flask has become popular among Python enthusiasts. As of October 2020, it has second most stars on GitHub among Python web-development frameworks, only slightly behind Django,[14] and was voted the most popular web framework in the Python Developers Survey 2018, 2019, 2020 and 2021.

7.3 Database scheme :

IBM DB2

- Db2 is a family of data management products, including database servers, developed by IBM.
- It initially supported the relational model, but was extended to support object–relational features and non-relational structures like JSON and XML.
- The brand name was originally styled as DB/2, then DB2 until 2017 and finally changed to its present form.
- Unlike other database vendors, IBM previously produced a platform-specific Db2 product for each of its major operating systems.
- However, in the 1990s IBM changed track and produced a Db2 common product, designed with a mostly common code base for L-U-W (Linux-Unix-Windows); DB2 for System z and DB2 for IBM i are different. As a result, they use different drivers.

Kubernetes

- Kubernetes is an open-source container orchestration system for automating software deployment, scaling, and management.
- Google originally designed Kubernetes, but the Cloud Native Computing Foundation now maintains the project.
- Kubernetes works with Docker, Containerd, and CRI-O.
- Originally, it interfaced exclusively with the Docker runtime through a "Dockershim"; however, from November 2020 up to April 2022, Kubernetes has deprecated the shim in favor of directly interfacing with the container through Containerd, or replacing Docker with a runtime that is compliant with the Container Runtime Interface (CRI).
- With the release of v1.24 in May 2022, "Dockershim" has been removed entirely.

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. TESTING

TEST CASE

Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation[Y/N]	BUG ID	Executed By
LoginPage_TC_001	Functional	Home Page	Verify user is able to see the Login/Signup popup when user clicked on My account button		1.Enter URL and click go 2.Click on My Account dropdown button 3.Verify login/Singup popup displayed or not	https://shopenzer.com/	Login/Signup popup should display	Working as expected	Pass				Karuppiah
LoginPage_TC_002	UI	Home Page	Verify the UI elements in Login/Signup popup		1.Enter URL and click go 2.Click on My Account drop-down button 3.Verify login/Singup popup with below UI elements: a.email text box b.password text box c.Login button d.New customer? Create account link e.Last password? Recovery password link	https://shopenzer.com/	Application should show below UI elements: a.email text box b.password text box c.Login button with orange colour d.New customer? Create account link e.Lost password? Recovery password link	Working as expected	Fail	Steps are not clear to follow		BUG-1234	Kaushik Srinivas
LoginPage_TC_003	Functional	Home page	Verify user is able to log into application with Valid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: chalam@gmail.com password: Testing123	User should navigate to user account homepage						Navaneeth
LoginPage_TC_004	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter InValid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: chalam@gmail password: Testing123	Application should show 'Incorrect email or password ' validation message.						Naveen Raju
LoginPage_TC_004	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter Invalid password in password text box 5.Click on login button	Username: chalam@gmail.com password: Testing123678685786876876	Application should show 'Incorrect email or password ' validation message.						Navaneeth
LoginPage_TC_005	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter InValid username/email in Email text box 4.Enter Invalid password in	Username: chalam password: Testing123678685786876876	Application should show 'Incorrect email or password ' validation message.						Naveen Raju

USER ACCEPTANCE TESTING:

1. Defect Analysis

This report shows the number of resolved or closed bugs each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	0	0	0	0	0
Duplicate	0	0	2	0	2
External	0	0	0	0	0
Fixed	0	0	0	3	0
Not Reproduced	0	0	0	1	1

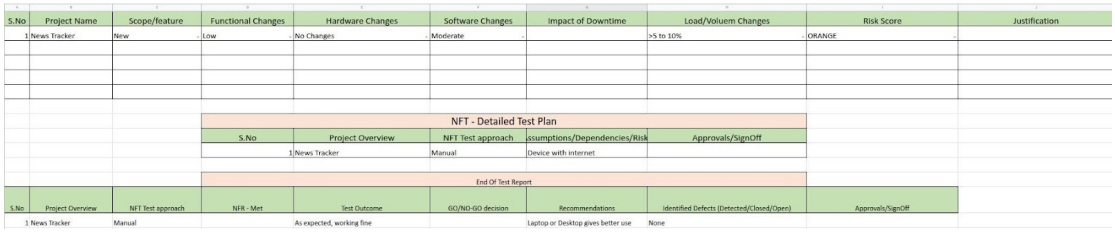
Skipped	0	0	0	0	0
Won't Fix	0	0	1	0	1
Totals	0	0	3	4	4

2. Test Case Analysis

This report shows the number of test cases that have passed, failed, and untested

Section	Total Cases	Not Tested	Fail	Pass
Login	4	0	0	4
Home	5	0	0	5
Bookmark	2	0	0	2
News	3	0	0	3
Logout	1	0	0	1

- **PERFORMANCE TESTING:**



S.No	Project Name	Scope/feature	Functional Changes	Hardware Changes	Software Changes	Impact of Downtime	Load/Voluem Changes	Risk Score	Justification
1	News Tracker	New	Low	No Changes	Moderate		>5 to 10%	ORANGE	

NFT - Detailed Test Plan

S.No	Project Overview	NFT Test approach	ssumptions/Dependencies/Risk	Approvals/SignOff
1	News Tracker	Manual	Device with internet	

End Of Test Report

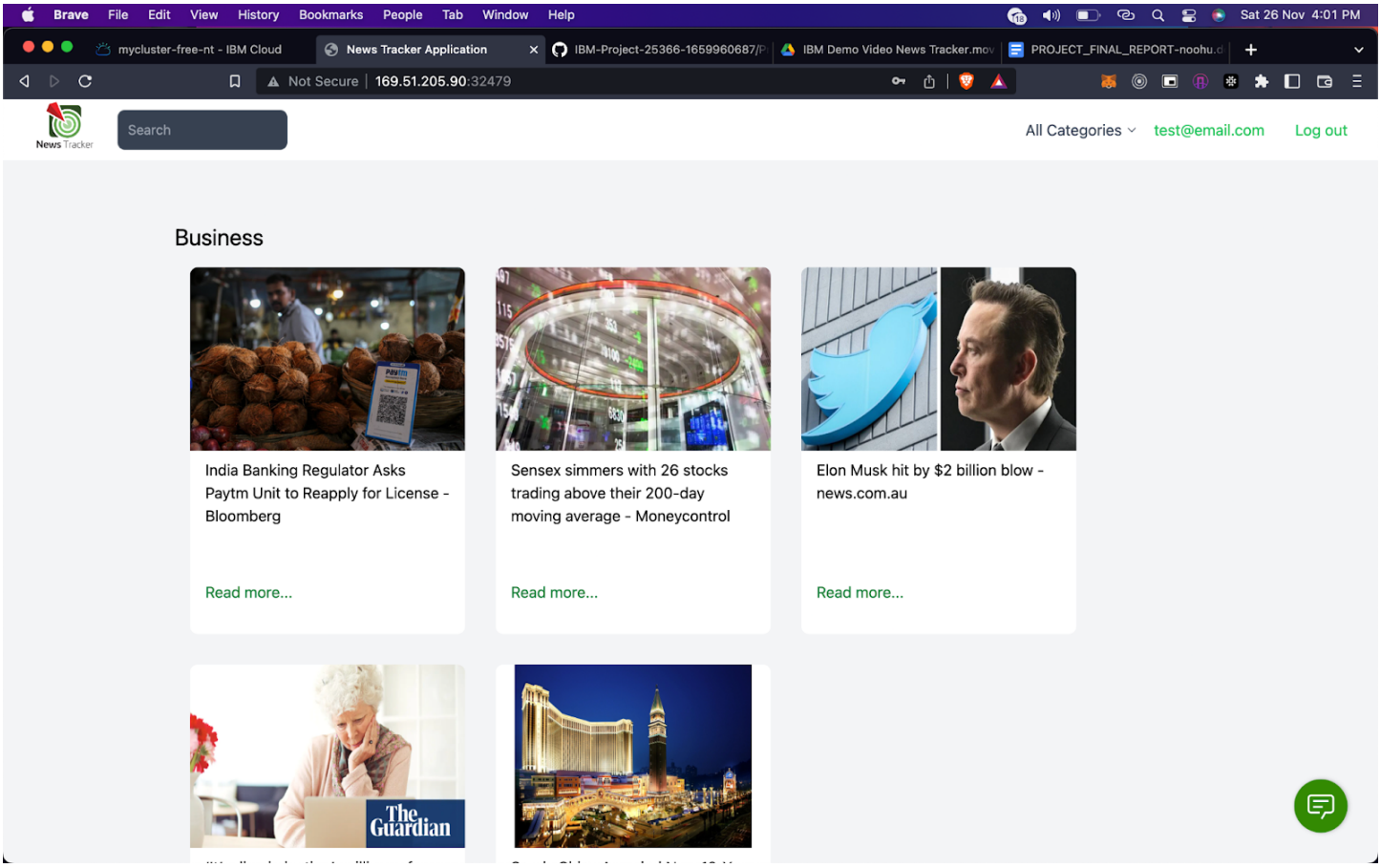
S.No	Project Overview	NFT Test approach	NFR - Met	Test Outcome	GO/NO-GO decision	Recommendations	identified Defects (Detected/Closed/Open)	Approvals/SignOff
1	News Tracker	Manual		As expected, working fine		Laptop or Desktop gives better use	None	

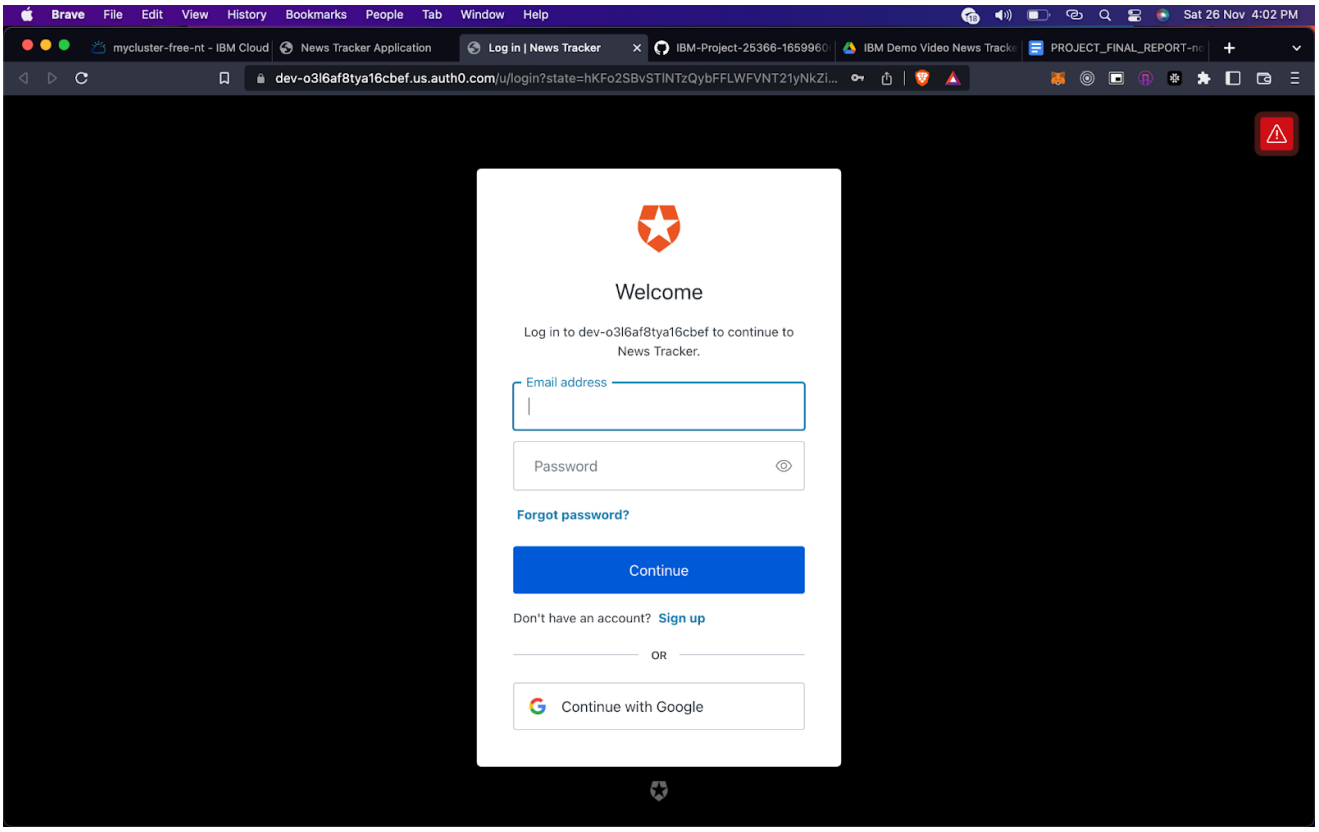
10 Results :

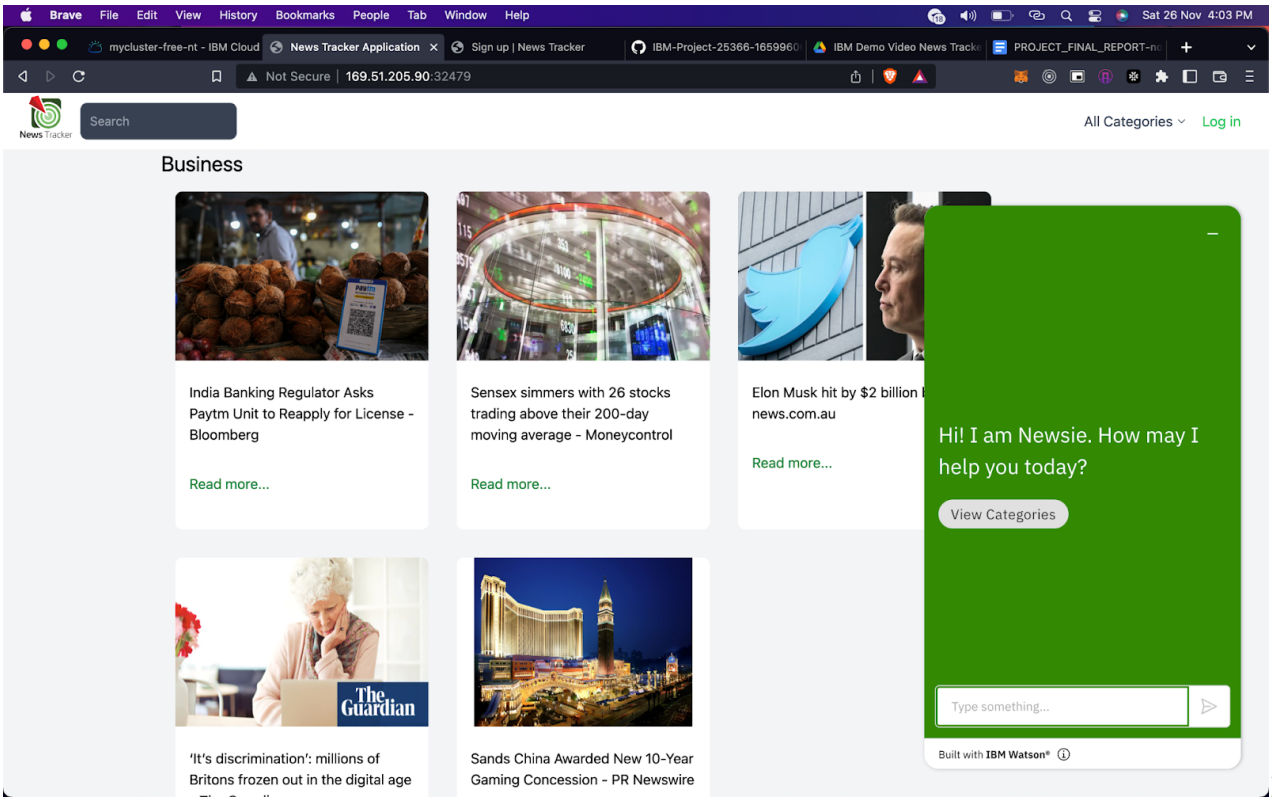
10.1 Performance Metrics :

- Project metrics are used to track the progress and performance of a project.
- Monitoring parts of a project like productivity, scheduling, and scopemake it easier for team leaders to see what's on track.
- As a project evolves, managers need access to changing deadlines or budgets to meet their client's expectations

Output Snapshots :




Brave File Edit View History Bookmarks People Tab Window Help
Sat 26 Nov 4:02 PM
mycluster-free-nt - IBM Cloud
News Tracker Application
Log in | News Tracker
IBM-Project-25366-1659960
IBM Demo Video News Tracke
PROJECT_FINAL_REPORT-nc
dev-o3l6af8tya16cbef.us.auth0.com/u/login?state=hKFo2SBvSTlNTzQybFFLWFVNT21yNkZi...
Welcome
Log in to dev-o3l6af8tya16cbef to continue to News Tracker.
Email address
Password
Forgot password?
Continue
Don't have an account? Sign up
OR
Continue with Google


Brave File Edit View History Bookmarks People Tab Window Help
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News Tracker Application
Sign up | News Tracker
IBM-Project-25366-1659960
IBM Demo Video News Tracke
PROJECT_FINAL_REPORT-nc
Not Secure | 169.51.205.90:32479
News Tracker
Search
All Categories
Log in
Business
India Banking Regulator Asks Paytm Unit to Reapply for License - Bloomberg
Read more...
Sensex simmers with 26 stocks trading above their 200-day moving average - Moneycontrol
Read more...
Elon Musk hit by $2 billion
news.com.au
Read more...
The Guardian
'It's discrimination': millions of Britons frozen out in the digital age
Sands China Awarded New 10-Year Gaming Concession - PR Newswire
Hi! I am Newsie. How may I help you today?
View Categories
Type something...
Built with IBM Watson®

10.

11.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.

12. 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.

13. APPENDIX

Source Code

Github

https://github.com/IBM-EPBL/IBM-Project-25366-1659960687

Demo video

https://drive.google.com/file/d/11W27uPUHuCTogSf9-vFWf_xo6uzo3mBw/view