Professional Readiness For Innovative, Employability And Entrepreneurship HX 8001

Project Name: News Tracker Application

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CONTENT

INTRODUCTION

Mobile app ecosystems are transforming patterns of news consumption. Until quite recently, reading the news was a niche use for smartphones, mostly for when users were ‘on the go’ now however, two in every three users of mobile devices in the US regularly access news and as many as one in five read in-depth news articles daily a similar picture is found in the UK. This growth in mobile news access continues the migration of news consumers to the Internet.

Mobile news access perfectly complements the continuously updating, 24-hour nature of digital news services. But if users are now never out of range of the news, they need more than ever for that access to be adaptive and personalized.

Personalized news services are already able to help people find news that is relevant to them, to recommend the right news to the right users, and to help users keep abreast of news by aggregation over multiple sources. This adaptivity is achieved through several methods [5] including: news content personalization by pushing filtered articles predicted to match the user’s interests; adaptive news browsing by changing the order of news categories; contextual news access by offering users access to additional information related to the news they are reading; and news aggregation, by automatically identifying main news topics emerging from multiple sources.

1.1 PROJECT OVERVIEW:

News Tracker Application

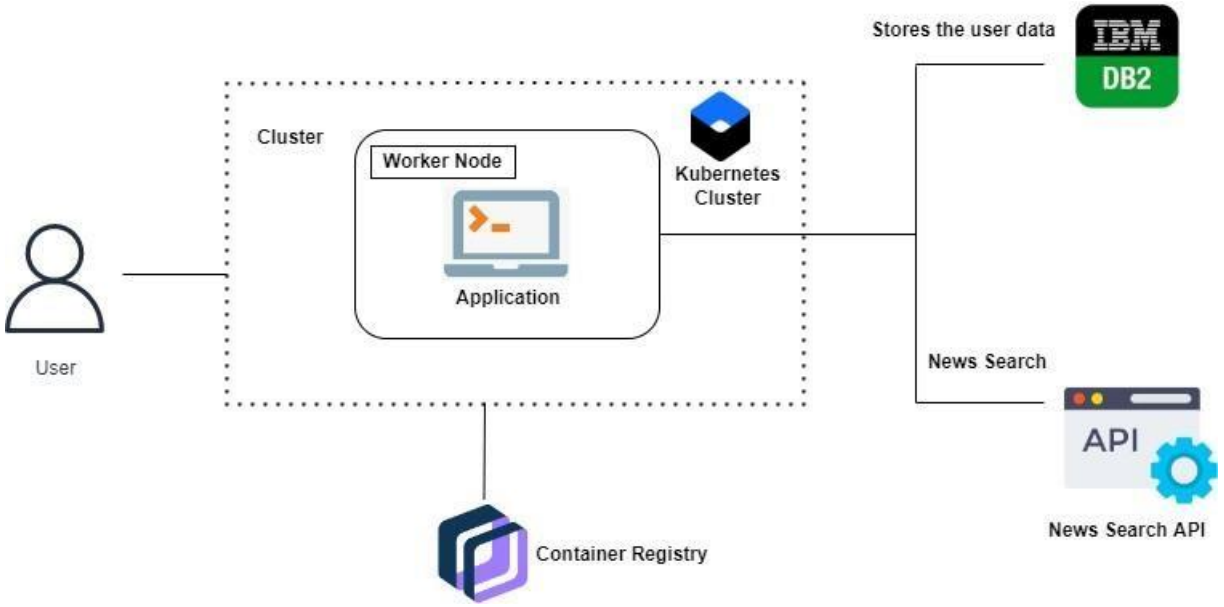
As our lives are very busy these days, we often feel we need more than 24 hrs. a day to cope up with everything we have in our schedule. Well, that's not possible but reducing the time by changing the conventional method of reading news can help. Just tell us what market news you're interested in and get a quick

peek for the day. Only read what you feel is relevant and save your time. This app helps you to query for all information about Indices, Commodities, Currencies, Future Rates, Bonds, etc.… as on official websites.

Project Workflow:

- The user interacts with the application.
- Registers by giving the details.
- Integrate the application with news APIs and store the data in the database.
- The database will have all the details and the user can search the news by using a search bar

Technical Architecture:



1.2 PURPOSE

This will help the users to share news on various platforms such as twitter and Facebook this will not only give an amazing user experience and also increase the views.

- Own Your Channels
- Better User Experience

- Higher Engagement
- Push Notifications
- Revenue Opportunities
- App Store Presence

2. LITERATURE SURVEY

Abstract:

As news is increasingly accessed on smartphones and tablets, the need for personalizing news app interactions is apparent. We report a series of three studies addressing key issues in the development of adaptive news app interfaces. We first surveyed users' news reading preferences and behaviors; analysis revealed three primary types of reader. We then implemented and deployed an Android news app that logs users' interactions with the app. We used the logs to train a classifier and showed that it is able to reliably recognize a user according to their reader type. Finally, we evaluated alternative, adaptive user interfaces for each reader type. The evaluation demonstrates the differential benefit of the adaptation for different users of the news app and the feasibility of adaptive interfaces for news apps.

Literature Survey:

According to our recent research we found out that there are various news web applications that are restricted for single language and also, they all provide news from a single source. Examples are BBC, CNN or other local news channels like AajTak, TV9 Telugu etc. provide news in their regional languages or by default English language. These articles cannot be read by users of other countries. As per InternetWorldStats, there is a huge ratio of people accessing the internet in other languages which increases the need for content to be available in different languages.

Review of literature:

The presence of new media is a challenge to conventional media, especially the printed newspaper. As per the research US newspaper industry is through what could be its worst crisis since the great depression due to new media. Print media seem to be losing young readers simply because they want news on demand, and to control and customize content, time and the medium itself. In India print media are flourishing. Reading behavior of online news readers from print media: Reading a newspaper is something they do with pleasure and sometime during breakfast, in a break Dier lunch, on the train or in the subway. In contrast, reading an online newspaper is something you do in much shorter breaks, perhaps between two emails, usually in the early morning, or during lunch.

Online readers make brief visits to the news sites several times a day with the expectation of obtaining a quick overview over the latest events. As per the study Westlund and Fardigh online news has acquired a stronger position among users over time, gender has the strongest complementing as men are distinguished users of both print and online news. In some research, researchers discussed the newspaper and the online news site being complementing and displacing when they serve needs. One research shows that youths feel, news sites serve the same needs as newspapers. A study suggests that old patterns of news still prevail and that the best predictors of frequency and sophisticated use of the Internet are young age, high income, and high level of education. In a recent study, "Is Print Really Dying. The State of Print Media Use in Europe" finds that print media is still an important media in the new communications environment among European audiences. His research attempts to investigate the online newspapers popularity, frequency of the Internet usage for online news and what kind of news readers prefer. He gap is a considerable issue for the betterment of the online media. Why do online news readers are growing. His is the main purpose of this research project.

As per the previous studies online news readers are growing rapidly. Questionnaires were distributed through the internet, using erecourses (e-mail, Facebook, Twitter, and blog) without knowing the gender of respondents. He Table 1 shows the displacement of online newspapers is very low in India. Only 10 percent of the respondents have stopped reading the traditional media (newspapers). While majority (90 percent) of online news consumers is using traditional media for the news, interestingly women respondents are reading both the medium higher (4 percent) than men respondent.

2.1 EXISTING PROBLEM:

Most of the people get the information about the world news through the internet, which is fast accessible and reliable. People have no time to be updated through Newspaper or watching news in the television, so different web applications have introduced to provide news across the world. English is a global language the most commonly spoken language in the world – used in every sector from business to social media, from sciences to the arts, from sports to international trades. So, most of the news applications from all over the world serve the live news to the users in English language only. Few applications serve the news from single source & websites are restricted to provide news in local language.

- These applications Fetch the news from single source
- Few applications publish articles only from one particular country & the language supported is only English.
- Foreigners who have difficulty reading English or who cannot understand English will not be aware of the current situations in the local country or around the world.
- It is difficult for the users to find required news updates in different languages from different sources in a single web application

Related Work:

Native news apps are expensive and difficult to maintain. Native Publishers like BBC News or NY Times uses their own writers to manage articles and manage it. Many native newspapers are divided because of this which causes in lack of resources from one side. Android structure provides great capability with frameworks, libraries and APIs, with the help of it we can provide better user experience and combine these sources at one place while maintaining integrity of its owner. “Newsapi” provides API that returns JSON (JavaScript Object Notation) metadata for headlines and articles live all around the world at any time. In this app we will be using this API for our better experience. Even after using this API, it is possible that we can’t reach maximum output of resources for that we can use Admin panel where admin or writers can add news of their own, manage and delete it. This contain will have separate database and access bar which will be labelled as “local news”. A module can be implemented where user will have different local news based on his location.

Use case Diagram:

Use Case Diagrams referred as behavior diagram which describes the commutation between actors or participations and set of actions. This is set of actions or use cases will be enclosedby system boundary and can also have relation with each other. Division among tupelos will based on the information gain computed for each attribute.

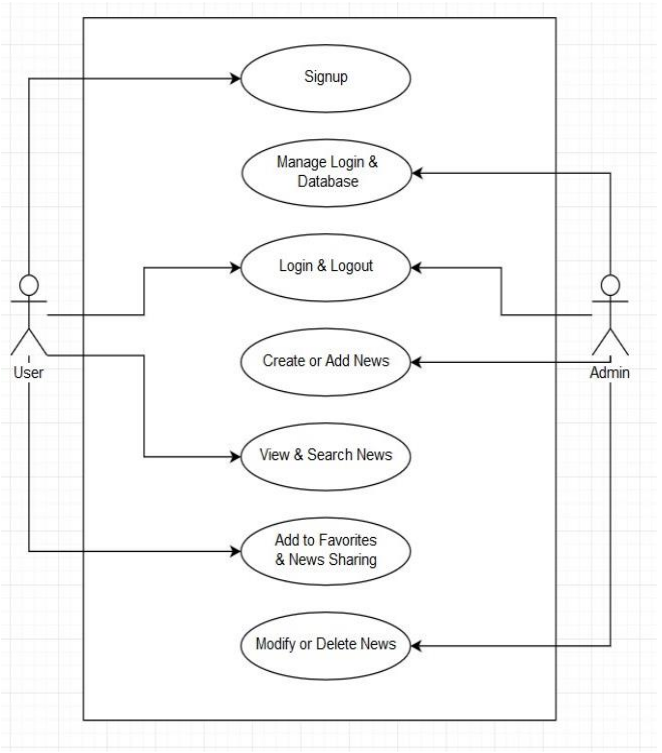


Figure : Use Case Diagram

Modules:

User Interface:

One of the factors in successful news app development is visualization of news and its feature with user. For the development of an android app material design is very useful and provides smooth experience with custom layout, views and animations. For this news app user should be able to select from different categories, countries and newspaper. Short News as list view with header, little description and image before showing full article can be helpful to user to determine what type of news they are looking for. View Holder can be used for this list view for better and fast experience. Library like Picasso can be used for better image handling.

This User interface will be connected to API and Admin Panel database which will give full article in form of web view of that article. Because of this structure the integrity of writer of that article will not be in harm.

API:

News API has been used for collecting different news sources at one spot. On sending request it will give response in JSON format which contains source id, title, description, image URL, article URL, author, time etc. We need to handle and parse this JSON into string format which is our required format.

Admin Panel:

This module of app controls the User and Writers logins from database. Writers can add news, update and delete from its database as per required. Writers will only has access to admin panel while Main Admin will has access to database as well.

User was allowed to use this application in his smartphone and screenshots were taken as a result for this study. First User need to Sign Up in order to access the application which provides security for this application. Also predicted user error handling with pop-up messaging was done before this experiment like entering invalid data in fields, not selecting a field before clicking on action button etc.
The result will be shown in form of screen shots below.

Figure 3: Main Dashboard page

Figure 4: News Display as in List and Web View

Available Features:

Global Support: Different type of newspaper will be available from all around the world in different languages with this user will be able to get news from all around the world.

Short News: News will be displayed in short format with title, image and little description in list view. It will help user to access required news faster.

Search Option: User will be able to search from not only one source but many different sources available within API.

Favourites / Offline Reading: News can be added as favorites which will automatically will be saved for offline reading.

Sharing: User will be able to share news easily on social media.

Experimental Study And Results:

User was allowed to use this application in his smartphone and screenshots were taken as a result for this study. First User needto Sign Up in order to access the application which provides security for this application. Also predicted user error handling with pop-up messaging was done before this experiment like entering invalid data in fields, not selecting a field before clicking on action button etc. The result will be shown in formof screen shots below.

2.2 REFERENCES:

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2.3 PROBLEM STATEMENT DEFINITION

New Tracker Application:

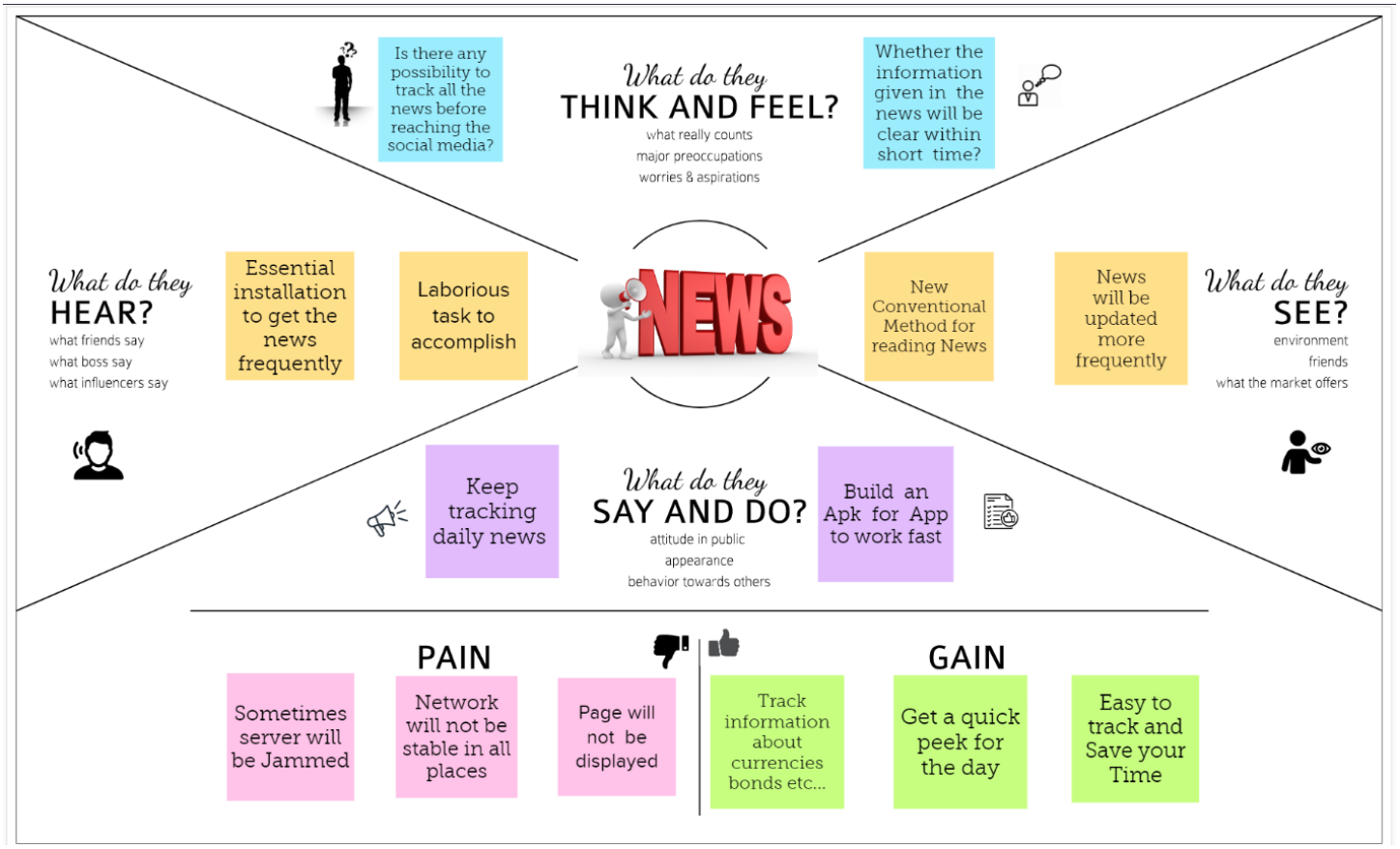
3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

News Tracker app:

3.2 IDEATION & BRAINSTORMING

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



Brainstorm & idea prioritization

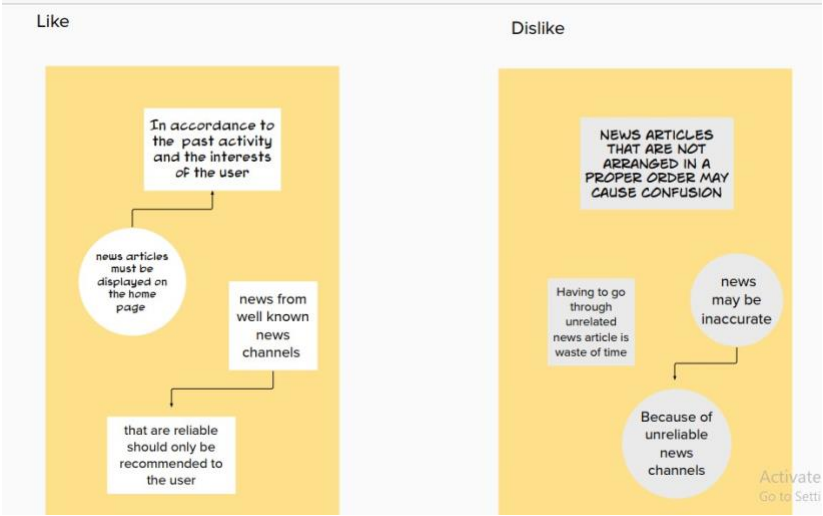
1

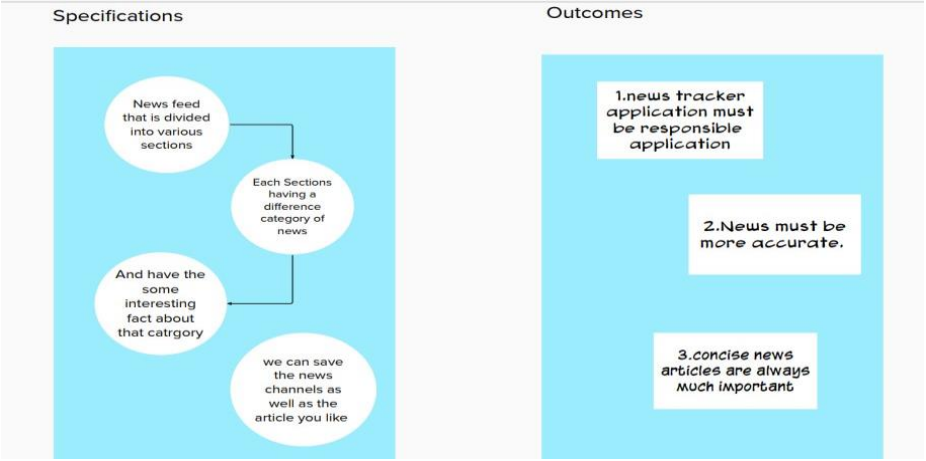
Define your problem statement

PROBLEM

How might we help people find an easy and efficient way to read personalized news anywhere?

Step-2: Brainstorm, Idea Listing and Grouping

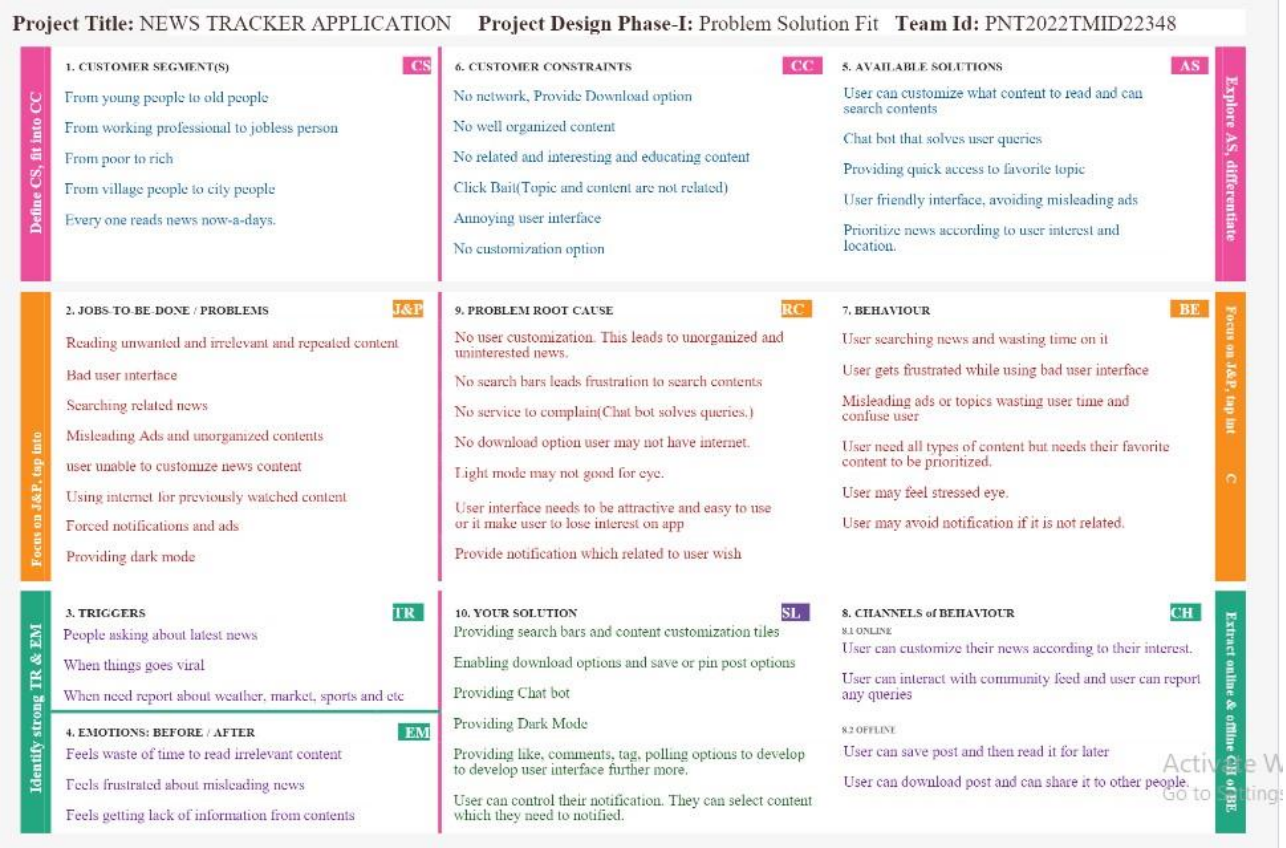




3.3 PROPOSED SOLUTION

SI. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	News plays a vital role in everyone's life. However, reading news everywhere at any time is not possible. As a result, a lot of people have to borrow time from other activities for either reading or watching the news. Hence, people need a reliable and easy way to read the news.
2.	Idea / Solution description	News website can be a good way to solve this issue as it can be accessed anywhere easily as long as you have internet access and doesn't require you to distract your hearing senses in the public.
3.	Novelty / Uniqueness	Can track news and also get notifications ifany update regarding the news appears.
4.	Social Impact / Customer Satisfaction	Significantly satisfied.
5.	Business Model (Revenue Model)	Revenue generated via ads and premium subscription(for obtaining news tracker feature).
6.	Scalability of the Solution	Since it is a website, it is extremely scalable.

3.4 PROBLEM SOLUTION FIT



4. REQUIREMENT ANALYSIS

4.1 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 Email Registration through Phone
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Profile Completion	Get personal details like name, news reading plan, phone number, gender, etc.
FR-4	Display news	Integrate Rapid api and display the headline news

FR-5	Search news	User can search their favorite catergory of news

4.2 NON-FUNCTIONAL REQUIREMENTS:

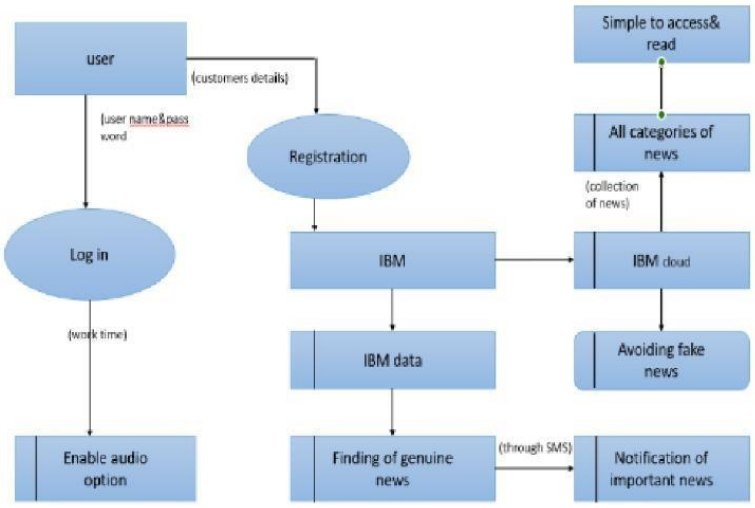
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Provide user friendly UI Simple and intuitive design
NFR-2	**Security**	Comprehensive authorization and authentication scheme for each system actor
NFR-3	**Reliability**	The system must perform without failure in 95 percent of use cases
NFR-4	**Performance**	The landing page supporting several users must provide 5 second or less response time
NFR-5	**Availability**	Uninterrupted services must be available all time except the time of server updation.
NFR-6	**Scalability**	Provide horizontal or vertical scaling for higher workloads.

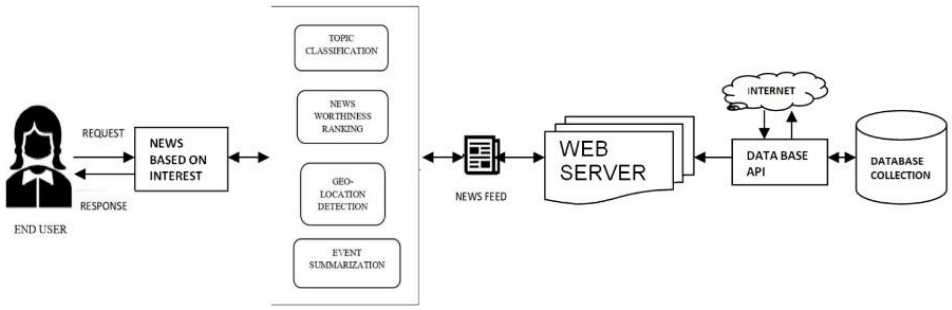
5. PROJECT DESIGN

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.



Flow Diagrams:



NEWS TRACKER APPLICATION

Guidelines:

1. flask app -using python library
2. first - Homepage with login and register
3. In Homepage showing general news
4. Login page- login and confirmation message
5. register page- register an confirm using otp or email
6. after Login-dashboard showing more news and can search specific news
7. Login and register database are stored in IBM DB2

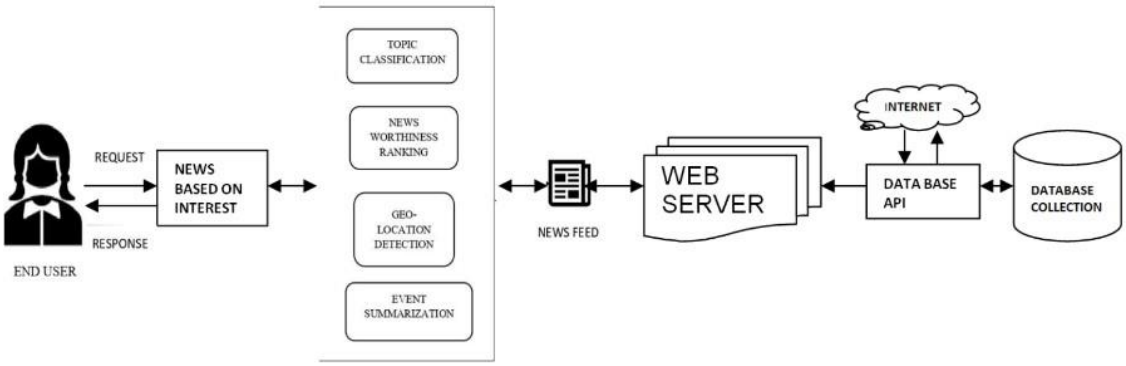
10.OTP Messages are sent through Send grid

11.Rapid api is connected to display news and to search news

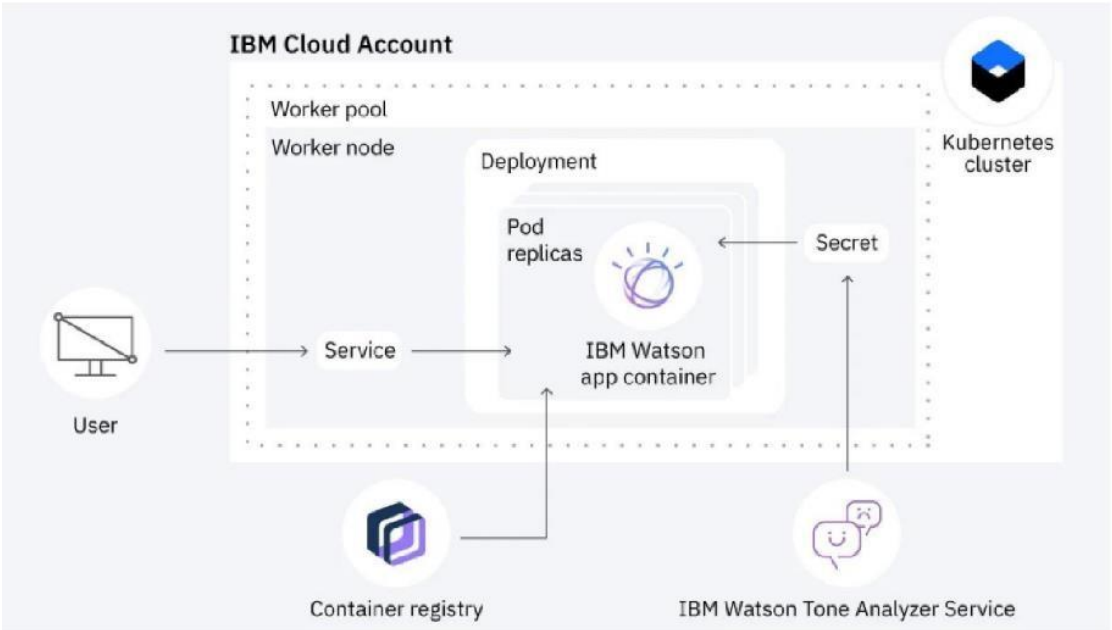
12.Files can be stored in IBM Storage

13. Services are received from IBM Cloud account
14.chat bot is implemented using IBM Watson Assistant

5.2 SOLUTION & TECHNICAL ARCHITECTURE



NEWS TRACKER APPLICATION



5.3 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer	Registration	USN-1	As a user, I can register for the application by entering my name, age, gender, email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation emailonce I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
	Profile updation	USN-3	As a user, I have to enter my Login Credentials To watch daily news	I can update these information on dashboard	High	Sprint-1
	Login	USN-4	As a user, I can log into the application by entering email & password	I can access my account / dashboard	High	Sprint-1
	Dashboard	USN-5	As a user, I can search news	I can get search results	High	Sprint-2
		USN-6	As a user, I can watch and read news based on category	I can access my account / dashboard	Medium	Sprint-3
Administrator	Maintain the applications	USN-7	Containerizing the application and Maintaining details for users	I can access database	High	Sprint-4

PROJECT PLANNING & SCHEDULING

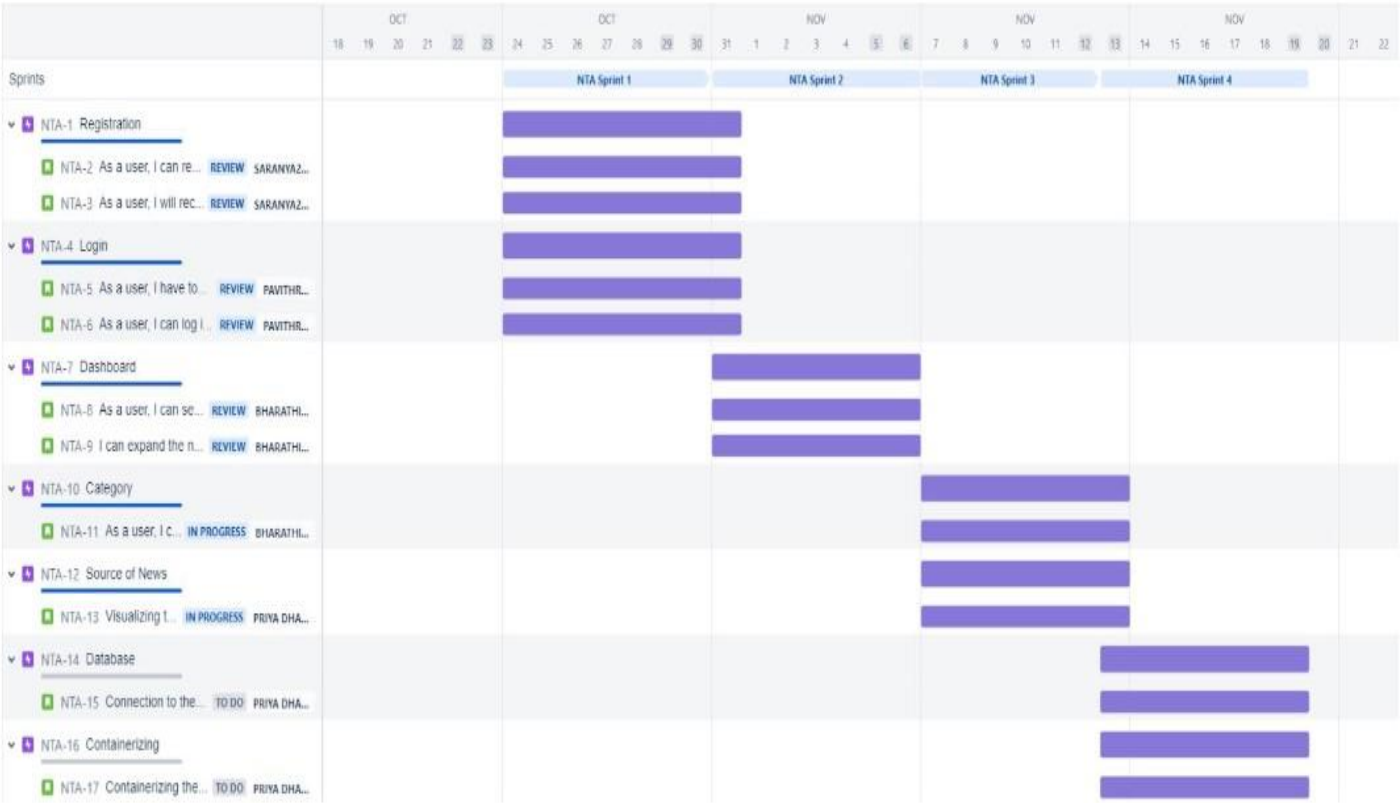
5.4 SPRINT PLANNING & ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority
Sprint-1	Registration	NTA-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High
Sprint-1	Registration	NTA-2	As a user, I will receive confirmation email once I have registered for the application	3	High
Sprint-1	Login	NTA-3	As a user, I have to enter my Login CredentialsTo watch daily news	1	High
Sprint-1	Login	NTA-4	As a user, I can log into the application by entering email & password	5	Medium
Sprint-2	Dashboard	NTA-5	As a user, I can search news	2	High
Sprint-2	Dashboard	NTA-6	I can expand the news to read briefly that what searched at the search box	5	High
Sprint-3	Category	NTA-7	As a user, I can watch and read news based on category	3	Medium
Sprint-3	Source of News	NTA-8	Visualizing the the news source such as BBC,CNN	2	Medium
Sprint-4	Database	NTA-9	Connection to the database for maintaining the user details	3	High
Sprint-4	Containerizing	NTA-10	Containerizing the application	5	High

5.5 SPRINT DELIVERY SCHEDULE

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	11	6 Days	24 Oct 2022	29 Oct 2022	11	29 Oct 2022
Sprint-2	7	6 Days	31 Oct 2022	05 Nov 2022	7	05 Nov 2022
Sprint-3	5	6 Days	07 Nov 2022	12 Nov 2022	5	12 Nov 2022
Sprint-4	8	6 Days	14 Nov 2022	19 Nov 2022	8	19 Nov 2022

5.6 REPORTS FROM JIRA



6. CODING & SOLUTIONING

6.1 FEATURE 1

Cloud Features:

1. **Self-service On-Demand**

This is one of the most essential and significant characteristics of cloud computing. This means that cloud computing enables clients to regularly monitor the abilities, allotted network storage, and server uptime. Therefore, it is one of the most fundamental features of cloud computing that helps clients control various computing abilities as per their requirements.

2. **Resources Pooling**

This is also a fundamental characteristic of cloud computing. Pooling resources means that a cloud service provider can distribute resources for more than one client and provide them with different services according to their needs. Resource Pooling is a multi-client plan useful for data storing, bandwidth services and data processing services. The provider administers the data stored in real-time without conflicting with the client's need for data.

3. **Easy Maintenance**

This is one of the best cloud characteristics. Cloud servers are easy to maintain with low to almost zero downtime. Cloud Computing powered resources undergo several updates frequently to optimise their capabilities and potential. The updates are more viable with the devices and perform quicker than the previous versions.

4. **Economical**

This kind of service is economical as it efficiently reduces IT costs and data storage expenditure. Moreover, most cloud computing services are free. Even if there are paid plans, it's only to expand storage capacity, and these costs are often very nominal. This is a massive advantage of using cloud computing services.

5. **Rapid Elasticity and Scalability**

The best part of using cloud storage is that it can easily handle all the workload and data load concerning storage. Furthermore, as it is fully automated, businesses and organisations can save heavily on manual labour and technical staffing as cloud services are elastic, scalable and automated. This is one of the significant advantages of using cloud services.

API Features:

1. HTTPS/SSL certificates

- Programming cheat sheets
- Try for free: Red Hat Learning Subscription
- eBook: An introduction to programming with Bash
- Bash Shell Scripting Cheat Sheet
- eBook: Modernizing Enterprise Java

The gold standard for the web is HTTPS using SSL certificates, and Let's Encrypt can help you achieve this. It is a free, automated, and open certificate authority from the non-profit Internet Security Research Group (ISRG).

2. Cross-origin resource sharing

CORS is a browser-specific security policy preflight check. If your API server is not in the same domain as the requesting client's domain, you will need to deal with CORS. For example, if your server is running on **api.domain-a.com** and gets a client request from **domain-b.com**, CORS sends an HTTP precheck request to see if your API service will accept client-side requests from the client's domain.

3. Authentication and JSON Web Tokens

There are several approaches to validate an authenticated user in your API, but one of the best ways is to use JSON Web Tokens (JWT). These tokens are signed using various types of well-known cryptographic libraries.

When a client logs in, an identity-management service provides the client with a JWT. The client can then use this token to make requests to the API. The API has access to a public key or a secret that it uses to verify the token.

There are several libraries available to help verify tokens, including jsonwebtoken. For more information about JWT and the libraries that support it in every language, check out JWT.io.

```
import jwt from 'jsonwebtoken'
 export default function (req, res, next) {
// req.headers.authorization Bearer token
const token = extractToken(req)
    jwt.verify(token, SECRET, { algorithms: ['HS256'] },
(err, decoded) => { if (err) {
        next(err) }
        req.session = decoded
        next()
    }) }
```

4. Authorizations and scopes

Authentication (or identity verification) is important, but so is authorization, i.e., *does the verified client have the privilege to execute this request?* This is where **scopes** are valuable. When the client authenticates with the identity management server and a JWT token is created, having the identity management service provide the scopes for the given authenticated client can enable the API service to determine if this verified client request can be performed without having to perform an additional costly lookup to an access control list.

6.2 FEATURE 2

Docker Features:

1. **Faster and Easier configuration:**

It is one of the key features of Docker that helps you in configuring the system in a faster and easier manner. Due to this feature, codes can be deployed in less time and with fewer efforts. The infrastructure is not linked with the environment of the application as Docker is used with a wide variety of environments.

2. **Application isolation:**

Docker provides containers that are used to run applications in an isolated environment. Since each container is independent, Docker can execute any kind of application.

3. **Increase in productivity:**

It helps in increasing productivity by easing up the technical configuration and rapidly deploying applications. Moreover, it not only provides an isolated environment to execute applications, but it reduces the resources as well.

4. **Swarm:**

Swarm is a clustering and scheduling tool for Docker containers. At the front end, it uses the Docker API, which helps us to use various tools to control it. It is a self-organizing group of engines that enables pluggable backends.

5. **Services:**

Services is a list of tasks that specifies the state of a container inside a cluster. Each task in the Services lists one instance of a container that should be running, while Swarm schedules them across the nodes.

Kubernetes Features:

1. **Auto-scaling**. Automatically scale containerized applications and their resources up or down based on usage

2. **Lifecycle management**. Automate deployments and updates with the ability to:
    a. Rollback to previous versions
    b. Pause and continue a deployment

3. **Declarative model**. Declare the desired state, and K8s works in the background to maintain that state and recover from any failures.
4. **Resilience and self-healing**. Auto placement, auto restart, auto replication and auto scaling provide application self-healing

5. **Persistent storage**. Ability to mount and add storage dynamically

6. **Load balancing**. Kubernetes supports a variety of internal and external load balancing options to address diverse needs.

7. **DevSecOps support**. DevSecOps is an advanced approach to security that simplifies and automates container operations across clouds, integrates security throughout the container lifecycle, and enables teams to deliver

secure, high-quality software more quickly. Combining DevSecOps practices and Kubernetes improves developer productivity.

6.3 DATABASE SCHEMA

Username: Varchar (32)

Email: Varchar (32)

Phone Number: Varchar (32)

Password: Varchar (32)

Pin: Varchar (32)

8. TESTING

8.1 TEST CASES

1. Verify that after registration users are navigated to login page
2. Verify the UI elements in Login/Signup popup
3. Verify user is able to log into application with Valid credentials
4. Verify that categories of news are shown in homepage
5. Verify that news is displayed in homepage
6. Verify that when clicked on news it is redirected to correct page

8.2 USER ACCEPTANCE TESTING

Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the News Tracker Application project at the time of the release to User Acceptance Testing (UAT).

1. Defect Analysis

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

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	3	2	2	1	8
Duplicate	1	0	3	0	4

External	2	0	0	1	3
Fixed	5	2	4	7	18
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	11	9	13	11	44

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
Print Engine	7	0	0	7
Client Application	4	0	0	4
Security	3	0	0	3
Outsource Shipping	7	0	0	7
Exception Reporting	6	0	0	6
Final Report Output	3	0	0	3
Version Control	2	0	0	2

3. Test Case Analysis

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

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	4	0	0	4
Security	3	0	0	3
Outsource Shipping	7	0	0	7
Exception Reporting	6	0	0	6
Final Report Output	3	0	0	3

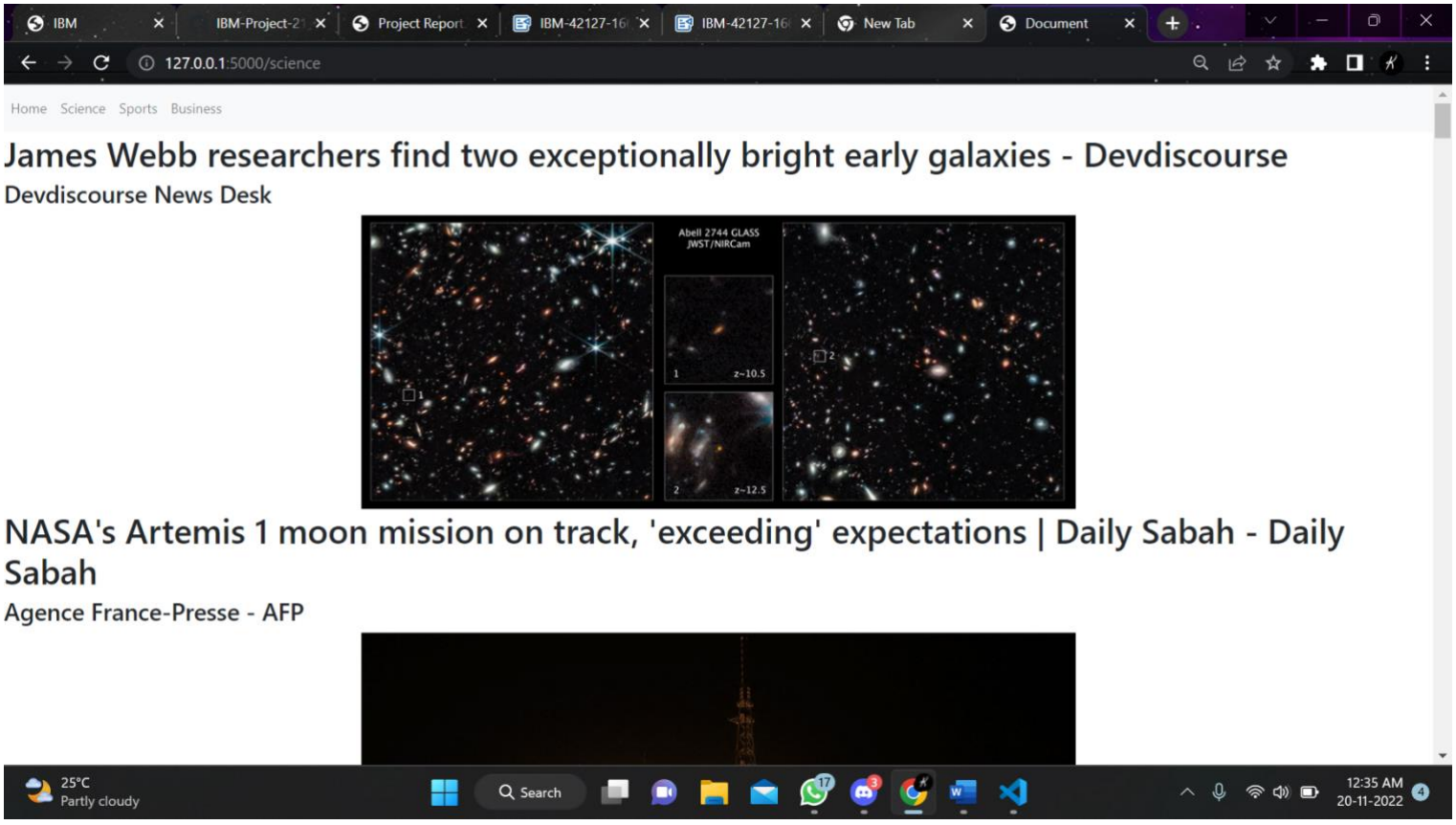
Version Control	2	0	0	2

9. RESULTS

9.1 PERFORMANCE METRICS

The application performance index, or Apdex score, has become an industry standard for tracking the relative performance of an application. It works by specifying a goal for how long a specific web request or transaction should take. Those transactions are then bucketed into satisfied (fast), tolerating (sluggish), too slow, and failed requests. A simple math formula is then applied to provide a score from 0 to 1.

Screenshots:



Hamilton says brake problems and 'bouncing' cost Mercedes after third row showing in Abu Dhabi qualifying - Formula 1

F1

F2: Lawson dominates in red flagged final Sprint Race at Abu Dhabi - Formula 1

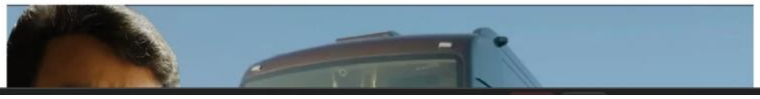
F1

Steel industry welcomes duty cut on steel exports - Economic Times

Nehal Chaliawala

Video shows actor Mohanlal's new luxurious vanity van inside out - CarToq.com

Ajeesh Kuttan



Crypto Analyst Who Accurately Called 2022 Bitcoin Crash Sets New Price Targets for BTC and Cardano - The Daily Hodl

Daily Hodl Staff

Jeep rescuing Tata Safari Storme is an example of how NOT to recover a stuck vehicle

Steel industry welcomes duty cut on steel exports - Economic Times

Nehal Chaliawala

Video shows actor Mohanlal's new luxurious vanity van inside out - CarToq.com

Ajeesh Kuttan

EasyMyTrip to declare bonus

Haldiram & Bikaji: Story of the brothers who control half of India's namkeen market - CNBCTV18

Shilpa Ranipeta

Watch: Dog Struggles To Stay Awake In The Morning, Internet Says Relatable - NDTV

None

ADVANTAGES & DISADVANTAGES

Advantages:

1. Own Your Channels

You do rely on Google and social media networks to decide when it makes the most sense to put it in front of your readers, but you've built a great and valuable asset you can count on, especially if users are registered, for the site or a newsletter. You've probably seen the impact of Facebook's 2016 changes to the newsfeed. Social traffic is drying up. Building a business on top of social networks is dangerous territory – you have to take advantage of social traffic and encourage sharing, of course, but you know you're on rented space. And the rent is going up.

Organic traffic is down to a trickle and the networks are clearly pushing their pay to play strategies, after all, that's their business. If you publish your own mobile app, you're in full control. It's your own property, you control your listing in the app store, and you have a direct relationship with your audience.

2. Better User Experience

Like all of us, your readers have come to expect a native app experience from all the brands they trust to consume content from.They want fast loading articles, offline use, no intrusive banners or popups, easy navigation designed for a thumb.

The average mobile site takes 15 seconds to load. Responsive sites are particularly terrible, as they're bloated with code trying to cater to desktop devices and mobile ones. Tracking and advertising code from the providers you use on your site are only making it worse.

3. Higher Engagement

"Unlike the mobile website, the app is where you serve a loyal, familiar audience. They know you, and they've come here thinking, 'Let's open up the app and see what you have for me today". A mobile app presents a great opportunity to connect with loyal readers.

With a presence on the user's home screen and regular touch points with push notifications, you have the tools to grow traffic and engagement.

Mobile web users have to do a lot more work to remember that your publication exists and then get inside it. They have to load up their browser, type in your web address, and then locate the stories that interest them.

4. Push notifications

With personalized push notifications from your news mobile app, you have a more effective means to communicate with readers and get stories in front of them when it counts. According to eMarketer research, only about 10% of news app users won't click on push notifications

5. Revenue Opportunities

A mobile app gives you more opportunities to generate revenue for your publication, including:

- Displaying banner ads throughout the app – and you don't have to worry about the loss of revenue from ad blockers.
- Displaying app-only ad formats like full screen ads, offer walls, native ads that fit well within your content and promote relevant (mobile specific) offers.
- Selling in-app subscriptions to loyal readers who want to access premium content or pay to remove ads from the app and continue supporting your work.
- Selling sponsorship for the app – you can get creative here, but it won't be hard for you to show your sponsor's logo in the app's splash screen or above every article.
- You can use a paywall that offers a number of free articles and then requires users to buy a subscription or just require a subscription to all users. Purchasing access to content is so easy in a mobile app when using in-app purchase.

Reader revenue turns on audience loyalty, and although the apps will likely not achieve the same scale as websites – they help to identify the most loyal and valuable audience members.

Disadvantages:

1. The Android applications are not so good.
2. The battery life of Android powered devices drains quickly.
3. Android applications contain virus.
4. Ads are displayed with most of the free applications either on the top or at bottom of the screen.

11. CONCLUSION

We explored the feasibility of recognising patterns of news reading interactions and evaluated three adaptive interface designs for different news reader types. We show that from their interaction log, a specific user can be recognised as one of three kinds. The reader types emerging from the online survey are well defined and distinct. The evaluation of the three variant interfaces suggests that different news reader types need different user interfaces. We have demonstrated a method for monitoring users' news reading behaviour and inferring news reader type from it.

12. FUTURE SCOPE

In the future we will further explore the design of adaptive interfaces, in order to be in a position to demonstrate a complete adaptive mobile news framework providing automatic personalisation of news apps.

13. APPENDIX

Source Code:

Style.css:

```
img {
  display: block;
  margin-left: auto;
  margin-right: auto;
  width: 200px;
  height: 300px;
  margin-bottom: 20px;
  position: relative;
}

h1 {
  font-family: "Lucida Sans", "Lucida Sans Regular", "Lucida Grande",
    "Lucida Sans Unicode", Geneva, Verdana, sans-serif;
  font-style: italic;
  text-shadow: 2px;
}
```

Home.html:

```
<!DOCTYPE html>
```

```
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta http-equiv="X-UA-Compatible" content="IE=edge">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>News Api</title>
   <link href="{{url_for('static',filename='styles.css')}}" rel="stylesheet">
   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi"
crossorigin="anonymous">
   <style>
     img {
       display: block;
       margin-left: auto;
       margin-right: auto;
       width: 50%;
     }
   </style>
</head>
<body>
   <nav class="navbar navbar-expand-lg bg-light">
        <div class="collapse navbar-collapse" id="navbarNav">
          <ul class="navbar-nav">
            <li class="nav-item">
              <a class="nav-link" href="{{url_for('home')}}">Home</a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="{{url_for('science')}}">Science</a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="{{url_for('technology')}}">Technology</a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="{{url_for('sports')}}">Sports</a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="{{url_for('business')}}">Business</a>
            </li>
          </ul>
```

```
        </div>
      </div>
    </nav>
  {%block content%}
  {% for auth,title,image,a in value%}
  <h1>{{title}}</h1>
  <h3>{{auth}}</h3>
  <a href="{{a}}"><img src="{{image}}" alt="no image"></a>
  {% endfor %}
  {%endblock content%}

</body>
</html>
```

Science.html :

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Document</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi"
crossorigin="anonymous">
    <style>
      img {
        display: block;
        margin-left: auto;
        margin-right: auto;
        width: 50%;
      }
    </style>
  </head>
  <body>
    <nav class="navbar navbar-expand-lg bg-light">
```

```
    <div class="collapse navbar-collapse" id="navbarNav">
      <ul class="navbar-nav">
        <li class="nav-item">
          <a class="nav-link" href="{{url_for('home')}}">Home</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="{{url_for('technology')}}">Technology</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="{{url_for('sports')}}">Sports</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="{{url_for('business')}}">Business</a>
        </li>
      </ul>
    </div>
  </div>
 </nav>

  {%block content%} {% for auth,title,image,a in value%}
  <h1>{{title}}</h1>
  <h3>{{auth}}</h3>
  <a href="{{a}}"><img src="{{image}}" alt="no image" /></a>
  {% endfor %} {%endblock content%}
 </body>
</html>
```

Business.html :

```
<!DOCTYPE html>
<html lang="en">
 <head>
  <meta charset="UTF-8" />
  <meta http-equiv="X-UA-Compatible" content="IE=edge" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0" />
  <title>Document</title>
```

```
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi"
crossorigin="anonymous">
    <style>
      img {
        display: block;
        margin-left: auto;
        margin-right: auto;
        width: 50%;
      }
    </style>
  </head>
  <body>
    <nav class="navbar navbar-expand-lg bg-light">
      <div class="collapse navbar-collapse" id="navbarNav">
        <ul class="navbar-nav">
          <li class="nav-item">
            <a class="nav-link" href="{{url_for('home')}}">Home</a>

          <li class="nav-item">
            <a class="nav-link" href="{{url_for('technology')}}">Technology</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="{{url_for('sports')}}">Sports</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="{{url_for('science')}}">Science</a>
          </li>
        </ul>
      </div>
```

```
    </div>
  </nav>
    {%block content%} {% for auth,title,image,a in value%}
    <h1>{{title}}</h1>
    <h3>{{auth}}</h3>
    <a href="{{a}}"><img src="{{image}}" alt="no image" /></a>
    {% endfor %} {%endblock content%}
  </body>
</html>
```

Sports.html :

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>News-Tracker-Sports</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi"
crossorigin="anonymous">


    <style>
      img {
        display: block;
        margin-left: auto;
        margin-right: auto;
        width: 50%;
      }
    </style>
  </head>
```

```
 <body>
  <nav class="navbar navbar-expand-lg bg-light">
   <div class="collapse navbar-collapse" id="navbarNav">
    <ul class="navbar-nav">
     <li class="nav-item">
      <a class="nav-link" href="{{url_for('home')}}">Home</a>
     </li>

     <li class="nav-item">
      <a class="nav-link" href="{{url_for('technology')}}">Technology</a>
     </li>
     <li class="nav-item">
      <a class="nav-link" href="{{url_for('science')}}">Science</a>
     </li>
     <li class="nav-item">
      <a class="nav-link" href="{{url_for('business')}}">Business</a>
     </li>
    </ul>
   </div>
  </div>
 </nav>
  {%block content%} {% for auth,title,image,a in value%}
  <h1>{{title}}</h1>
  <h3>{{auth}}</h3>
  <a href="{{a}}"><img src="{{image}}" alt="no image" /></a>
  {% endfor %} {%endblock content%}
 </body>
</html>
```

Docker File:

```
FROM python:3.6

WORKDIR /app

ADD . /app

COPY requirements.txt /app

RUN python3 -m pip install -r requirements.txt

RUN python3 -m pip install ibm_db

EXPOSE 5000

CMD ["python","app.py"]
```

App.py:

```
from flask import *
import newsapi


app = Flask(__name__)

apikey = '6156f335a1c84e7a806033df75904420'
@app.route('/')
@app.route('/home')
def home():
    nsap = newsapi.NewsApiClient(api_key=apikey)
    articles = nsap.get_top_headlines(country='in',page_size=25)
    article = articles['articles']
    author = []
    title = []
    img = []
    a=[]
    for i in range(len(article)):
        auth = article[i]
        author.append(auth['author'])
        title.append(auth['title'])
        img.append(auth['urlToImage'])
        a.append(auth['url'])
        values = zip(author,title,img,a)
    return render_template('home.html',value= values)
```

```
@app.route('/science')
def science():
    nsap = newsapi.NewsApiClient(api_key=apikey)
    articles = nsap.get_top_headlines(country='in',category='science',page_size=25)
    article = articles['articles']
    author = []
    title = []
    img = []
    a=[]
    for i in range(len(article)):
        auth = article[i]
        author.append(auth['author'])
        title.append(auth['title'])
        img.append(auth['urlToImage'])
        a.append(auth['url'])
        values = zip(author,title,img,a)
    return render_template('tech.html',value= values)


@app.route('/technology')
def technology():
    nsap = newsapi.NewsApiClient(api_key=apikey)
    articles = nsap.get_top_headlines(country='in',category='technology',page_size=25)
    article = articles['articles']
    author = []
    title = []
    img = []
    a=[]
    for i in range(len(article)):
        auth = article[i]
        author.append(auth['author'])
        title.append(auth['title'])
        img.append(auth['urlToImage'])
        a.append(auth['url'])
        values = zip(author,title,img,a)
    return render_template('tech.html',value= values)

@app.route('/business')
def business():
    nsap = newsapi.NewsApiClient(api_key=apikey)
```

```
    articles = nsap.get_top_headlines(country='in',category='business',page_size=25)
    article = articles['articles']
    author = []
    title = []
    img = []
    a=[]
    for i in range(len(article)):
        auth = article[i]
        author.append(auth['author'])
        title.append(auth['title'])
        img.append(auth['urlToImage'])
        a.append(auth['url'])
        values = zip(author,title,img,a)
    return render_template('business.html',value= values)

@app.route('/sports')
def sports():
    nsap = newsapi.NewsApiClient(api_key=apikey)
    articles = nsap.get_top_headlines(country='in',category='sports',page_size=25)
    article = articles['articles']
    author = []
    title = []
    img = []
    a=[]
    for i in range(len(article)):
        auth = article[i]
        author.append(auth['author'])
        title.append(auth['title'])
        img.append(auth['urlToImage'])
        a.append(auth['url'])
        values = zip(author,title,img,a)
    return render_template('sports.html',value= values)


if __name__=='__main__':
    app.run(debug=True)
```

Requirements.txt:

Flask ibm_db

newsapi-python

Service.yaml: apiVersion:

v1 kind: Service metadata:

name: flask-node-deployment

spec: ports:

- port: 5000

  targetPort: 5000

selector:

  app: flasknode

GitHub & Project Demo Link:

Github Link:

https://github.com/IBM-EPBL/IBM-Project-42127-1660650699.git

Demo Link:

https://drive.google.com/file/d/1dgn-2QpooGUnNMbA7GP3PEpS56rqxrgO/view?usp=share_link