

NEWSWISE APPLICATION

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PROBLEM STATEMENT: NEWS SOURCE APPLICATION

In today's fast-paced digital world, users need quick access to summarized, relevant, and personalized news. However, existing solutions often fail to provide an experience that integrates news fetching, summarization and personalized recommendations in a scalable manner.





PROBLEM DEFINITION

The challenge is to develop a microservices-based NewsSource Application that:

- Fetches news from various sources and generates concise summaries.
- Integrates with API's to allow users to query news-related information.
- Manages user (create users, read user entry, update user specific details, delete user).
- Provides a recommendation system based on user preferences.



ARCHITECTURE & DESIGN PATTERN

Tech Stack:

Backend: Java (Spring Boot, Spring Cloud)

Database: MySQL for structured data

Inter-Service Communication: REST API

(RestTemplate/WebClient/OpenFeign)

Service Discovery: Eureka Server for dynamic service registry

API Gateway: Spring Cloud Gateway for request routing

Deployment & Scalability: Docker, Kubernetes



MYSQL QUERY

SQL Query: CREATE DATABASE userdb

SELECT * FROM userdb.*;

	id	email	interest	password	username
▶	1	newmail@example.com	Space Science	newPassword456	dhruvi_updated
	3	dhruvi@example.com	Reinforcement Learning	securePass123	dhruvi123
	NULL	NULL	NULL	NULL	NULL



OUTPUT

The screenshot shows the Postman application interface. At the top, there are two tabs: "Overview" and "POST http://localhost:8081/". Below these are two requests:

- POST http://localhost:8081/users/register**: A POST request to register a user. The body is raw JSON:

```
1 {  
2   "username": "newswise",  
3   "email": "newswise@gmail.com",  
4   "interest": "Technology, AI",  
5   "password": "12"  
6 }
```
- GET http://localhost:8090/recommendations/feed/6**: A GET request to retrieve a feed of recommendations. The body is raw JSON:

```
1 [ {  
2     "articleId": "101",  
3     "category": "Technology|AI",  
4     "content": "New advancements in AI and machine learning."  
5 }, {  
6     "articleId": "105",  
7     "category": "Technology|Programming",  
8     "content": "Best programming languages to learn in 2025."  
9 }, {  
10    "articleId": "107",  
11    "category": "Space|Astronomy",  
12    "content": "NASA's latest Mars rover mission update."  
13 } ]
```

The bottom section of the interface shows the workspace history and environment settings.

The screenshot shows the Postman application interface. At the top, there are two tabs: "Overview" and "GET http://localhost:8090/recommendations/feed/1". Below these is a single request:

- GET http://localhost:8090/recommendations/feed/1**: A GET request to retrieve a feed of recommendations. The body is raw JSON:

```
1 [ {  
2     "articleId": "101",  
3     "category": "Technology|AI",  
4     "content": "New advancements in AI and machine learning."  
5 }, {  
6     "articleId": "105",  
7     "category": "Technology|Programming",  
8     "content": "Best programming languages to learn in 2025."  
9 }, {  
10    "articleId": "107",  
11    "category": "Space|Astronomy",  
12    "content": "NASA's latest Mars rover mission update."  
13 } ]
```



OUTPUT

```
GET http://localhost:8090/recommendations/feed/6

Params Authorization Headers (9) Body Scripts Settings Cookies
Body Cookies Headers (5) Test Results 200 OK - 37.03 s - 4.94 KB ...
{} JSON D: Preview ⚡ Visualize ...
1.
2.
3. "title": "Denmark lost 52 soldiers fighting alongside the US. Now it feels threatened by Trump",
4. "description": "Danes, who have been loyal allies of Washington, are blindsided by Trump's insistence on taking over Greenland.",
5. "content": "Okay, I'm ready to analyze the news article. Please provide the full article text. Once you do, I will provide the following:\n\n**Title:** Trump's Interest in Greenland Acquisition\n\n**Potential Bias:** Anti-Trump. The phrase \"blindsiding supposed allies\" suggests a negative portrayal of Trump's actions and implies a lack of diplomatic sensitivity. The focus on his \"takeover\" interest also carries a negative connotation.\n\n**Summary of the article:** The article reports on President Trump's recurring interest in the United States acquiring Greenland. It mentions that he first discussed the possibility during his first term and has recently revisited the idea. The article also suggests that this pursuit may have surprised or upset allies.\n\n**Explanation of complex topics (if any):**\n\n**Alliances:** The article mentions \"allies.\" In international relations, an alliance is a formal agreement between two or more states for mutual support in case of a conflict. This can involve military, economic, or political cooperation.\n\nI need the full article to give you a complete and accurate analysis.\n",
6. "category": "Politics\n",
7. "bias": null,
8. "complexExplanation": null
9.
10.
11. "title": "Toronto shooting: 12 injured at Scarborough pub",
12. "description": "The extent of injuries is not known and the suspect remains at large after fleeing the scene said police.",
13. "content": "Okay, I'm ready to analyze the news article.\n\n**Title:** Toronto Pub Shooting Injures Twelve, Suspects at Large\n\n**Potential Bias:** At this stage, with the limited information, it's difficult to identify significant biases. The article appears to be a straightforward report of the event. However, the choice of language (e.g., \"shooting\") can subtly influence the reader's perception. Further reporting will need to be analyzed to detect any specific bias related to crime reporting, gun control, or community profiling. The article is also very brief, potentially creating a bias of omission by not including context.\n\n**Summary of the article:** A shooting at a Toronto pub at 10:39 PM local time on Friday has resulted in injuries to twelve people. Police are currently searching for three suspects who are still at large.\n\n**Explanation of complex topics (if any):** There are no complex topics to explain in this short news snippet. More context would be needed to explain the potential causes of the shooting and its effects on the Toronto community.\n",
14. "category": "Politics\n",
15. "bias": null,
16. "complexExplanation": null
17.
18.
19. "title": "Labour ministers yet to hold talks over Abramovich funds",
20. "description": "Funds worth £2.5bn - meant to help Ukrainians - remain frozen in a UK bank account over a row about how to use them.",
21. "content": "Okay, I'm ready. Please provide the news article. I will then analyze it and respond in the requested format.\n",
22. "category": "Politics\n",
23. "bias": null,
24. "complexExplanation": null
25.
26.
27. "title": "Is Trump reining in Musk after a cabinet showdown with secretaries?",
28. "description": "The president intervenes in a cost-cutting row after a reported showdown between his billionaire adviser and two top officials at the White House.",
29. "content": "Okay, I'm ready. Please provide the news article. I will analyze it and present my findings in the requested format.\n",
30. "category": "Politics\n",
31. "bias": null,
32. "complexExplanation": null
33.
34.
35. "title": "Trump says Ukraine 'more difficult' to deal with than Russia",
36. "description": "It may be 'easier dealing with' Moscow than Kyiv, the US president told reporters in the White House.",
37. "content": "Okay, I'm ready to analyze the news article. Please provide the full text of the article so I can give you a comprehensive analysis. Once you provide the full article, I will provide the information in the requested format.\n\n**Title:** (I will create a suitable title based on the article's content)\n\n**Potential Bias:**\n\n**Summary of the article:**\n\n**Explanation of complex topics (if any):**\n",
38. "category": "Politics\n",
39. "bias": null,
40. "complexExplanation": null
41.
```



OUTPUT

HTTP New Collection / http://localhost:8888/NewsSourceApplication/dev

GET http://localhost:8888/NewsSourceApplication/dev

Send

Params Auth Headers (6) Body Scripts Settings Cookies

Query Params

Key	Value	Description	...	Bulk Edit

Body 200 OK • 1.53 s • 579 B • Save Response

{ } JSON ▾ ▶ Preview ⚡ Visualize ▾

```
1 {  
2   "name": "NewsSourceApplication",  
3   "profiles": [  
4     "dev"  
5   ],  
6   "label": null,  
7   "version": "e46fde33e35c456f97c0861ac6a3784ab8558761",  
8   "state": "",  
9   "propertySources": [  
10    {  
11      "name": "https://github.com/VanshK7/NewsWise/NewsSourceApplication.",  
12        "properties",  
13        "source": {  
14          "server.port": "8082",  
15          "spring.application.name": "newssourceapplication",  
16          "custom.message": "Welcome to News Source Application!",  
17          "spring.cloud.config.uri": "http://localhost:8888"  
18        }  
19    }  
20  ]
```

Postbot Runner Start Proxy Cookies Vault Trash ?

HTTP New Collection / http://localhost:8888/NewsSourceApplication/dev

GET http://localhost:9090/N • GET http://localhost:8888/N

Save Share

GET http://localhost:8889/context-service/default

Send

Params Auth Headers (6) Body Scripts Settings Cookies

Query Params

Key	Value	Description	...	Bulk Edit

Body 200 OK • 771 ms • 556 B • Save Response

{ } JSON ▾ ▶ Preview ⚡ Visualize ▾

```
1 {  
2   "name": "context-service",  
3   "profiles": [  
4     "default"  
5   ],  
6   "label": null,  
7   "version": "1139d7d16ecc861974623b3150c83e37e5577af",  
8   "state": "",  
9   "propertySources": [  
10    {  
11      "name": "https://github.com/VanshK7/NewsWise/context-service.",  
12        "properties",  
13        "source": {  
14          "server.port": "8081",  
15          "spring.application.name": "contextservice",  
16          "custom.message": "Welcome to Context Service!",  
17          "spring.cloud.config.uri": "http://localhost:8888"  
18        }  
19    }  
20  ]
```



OUTPUT

The image displays three separate Postman collection windows, each showing a sequence of API requests and their responses.

Left Window: A POST request to `http://localhost:8080/api/context/generate` with the body:

```
1 is AI going to take over humans?
```

The response is a 200 OK status with a large JSON object containing a multi-line string of text about AI's impact on humanity.

Middle Window: A GET request to `http://localhost:8889/context-service/default`. The response is a 200 OK status with a JSON object representing a context service profile:

```
1 {
  2   "name": "context-service",
  3   "profiles": [
  4     "default"
  5   ],
  6   "label": null,
  7   "version": "1139d7d16ecc861974623b3150c83e37e5577af",
  8   "state": "",
  9   "propertySources": [
 10     {
 11       "name": "https://github.com/VanshK7/NewsWise/context-service.properties",
 12       "source": {
 13         "server.port": "8081",
 14         "spring.application.name": "contextservice",
 15         "custom.message": "Welcome to Context Service!",
 16         "spring.cloud.config.uri": "http://localhost:8888"
 17       }
 18     }
 19   ]
 20 }
```

Right Window: A GET request to `http://localhost:8888/NewsSourceApplication/dev`. The response is a 200 OK status with a JSON object representing a news source application configuration:

```
1 {
  2   "name": "NewsSourceApplication",
  3   "profiles": [
  4     "dev"
  5   ],
  6   "label": null,
  7   "version": "e46fde33e35c456f97c0861ac6a3784ab8558761",
  8   "state": "",
  9   "propertySources": [
 10     {
 11       "name": "https://github.com/VanshK7/NewsWise/NewsSourceApplication.properties",
 12       "source": {
 13         "server.port": "8082",
 14         "spring.application.name": "newssourceapplication",
 15         "custom.message": "Welcome to News Source Application!",
 16         "spring.cloud.config.uri": "http://localhost:8888"
 17       }
 18     }
 19   ]
 20 }
```



OUTPUT

DS Replicas

localhost

Instances currently registered with Eureka

Application	AMIs	Availability Zones	Status
CONTEXT-SERVICE	n/a (1)	(1)	UP (1) - 67146ec67a7b:context-service:8089
GATEWAY	n/a (1)	(1)	UP (1) - 845d9f4688d1:gateway:8080
NEWSOURCEAPPLICATION	n/a (1)	(1)	UP (1) - 90862bdd00a9:NewsSourceApplication:9090
RECOMMENDATION-SERVICE	n/a (1)	(1)	UP (1) - b45bdd32534a:recommendation-service:8090
USERSERVICE	n/a (1)	(1)	UP (1) - 9ccb2be48f0c:userservice:8081

General Info

Ask Gordon BETA

Containers Give feedback

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Container CPU usage i
4.92% / 800% (8 CPUs available)

Container memory usage i
2.22GB / 7.49GB

Show charts

Search Only show running containers

Name	Container ID	Image	Port(s)	CPU (%)	Last start	Actions
ma_newwise_el -	-	-	-	4.92%	12 minut	⋮ trash
context-servic 4609907c1cd0	ma_newwise_8089:8089	ma_newwise_8089:8089	8089:8089	0.3%	28 minut	⋮ trash
news-service d311a3f95c26	ma_newwise_9090:9090	ma_newwise_9090:9090	9090:9090	0.26%	28 minut	⋮ trash
reccomendat 16b9f27940d7	ma_newwise_8090:8090	ma_newwise_8090:8090	8090:8090	0.46%	28 minut	⋮ trash
api-gateway 16417257a5b2	ma_newwise_8080:8080	ma_newwise_8080:8080	8080:8080	0.31%	28 minut	⋮ trash
eureka-server bbd932ec3a78	ma_newwise_8761:8761	ma_newwise_8761:8761	8761:8761	1.92%	29 minut	⋮ trash
mysql-db 3af9339f5da9	mysql:8.0	mysql:8.0	3307:3306	1.24%	28 minut	⋮ trash

Showing 8 items

Engine running | Kubernetes running RAM 6.43 GB CPU 5.59% Disk 9.14 GB used (limit 1006.85 GB) Terminal ✓ v4.39.0



OUTPUT

```
Login Succeeded
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker tag ma_newwise_docker_compose-final-eureka-server estrella1708/eureka-server:latest
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker tag ma_newwise_docker_compose-final-gateway estrella1708/gateway:latest
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker tag ma_newwise_docker_compose-final-contextservice estrella1708/context-service:latest
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker tag ma_newwise_docker_compose-final-newsservice estrella1708/news-service:latest
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker tag ma_newwise_docker_compose-final-userservice estrella1708/user-service:latest
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker tag ma_newwise_docker_compose-final-recommendationservice estrella1708/recommendation-service:latest
```

```
Structure Alt+7
T\MA_Newwise_Docker_compose - final> docker push estrella1708/news-service:latest
The push refers to repository [docker.io/estrella1708/news-service]
a6679a0c0d13: Preparing
13a10cb70f8e: Preparing
bbb4901568cb: Preparing
c04eebc51dcb: Preparing
a6679a0c0d13: Pushed
latest: digest: sha256:e9d1f27c7478f38d352f94c4f35e482ddd25755398920aa04ede29461b06a073 size: 1371
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker push estrella1708/user-service:latest
The push refers to repository [docker.io/estrella1708/user-service]
3a398b251aaa: Preparing
13a10cb70f8e: Preparing
bbb4901568cb: Preparing
c04eebc51dcb: Preparing
3a398b251aaa: Pushed
latest: digest: sha256:f7e8f4b90c53887ecb4dda0d5f0e7bbaa544a7501546dca5d3f3724247cc66ac size: 1371
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final> docker push estrella1708/recommendation-service:latest
The push refers to repository [docker.io/estrella1708/recommendation-service]
f8a5f93706ab: Preparing
13a10cb70f8e: Preparing
bbb4901568cb: Preparing
c04eebc51dcb: Preparing
f8a5f93706ab: Pushed
latest: digest: sha256:c7c435bd9c3eef237c064aa7c9564a5b5b68b3f75ba69fffad3c8a19c9d60f9a size: 1371
```



OUTPUT

```
Structure Alt+T\MA_Newwise_Docker_compose - final> cd k8s
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final\k8s> kubectl apply -f .
deployment.apps/news-service created
service/news-service created
deployment.apps/context-service created
service/context-service created
deployment.apps/eureka-server created
service/eureka-server created
deployment.apps/api-gateway created
service/gateway created
deployment.apps/mysql-deployment created
service/mysql-service created
deployment.apps/recommendation-service created
service/recommendation-service created
deployment.apps/user-service created
service/user-service created
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final\k8s> kubectl get pods
NAME                      READY   STATUS        RESTARTS   AGE
api-gateway-6c4bf54779-c2kgd   0/1    ContainerCreating   0          10s
context-service-5d98559654-4ztlb 0/1    ContainerCreating   0          10s
eureka-server-74cb6bb6d-hxrql   0/1    ContainerCreating   0          10s
mysql-deployment-5f85b686c5-pp5k2 0/1    ContainerCreating   0          10s
news-service-7c68698fdb-bq9dh   0/1    ContainerCreating   0          10s
recommendation-service-68b686-h6vvj 0/1    ContainerCreating   0          10s
user-service-5f7685f8bd-gh4v4    0/1    ContainerCreating   0          9s
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)
context-service	ClusterIP	10.96.222.62	<none>	8089/TCP
eureka-server	ClusterIP	10.96.189.0	<none>	8761/TCP
gateway	NodePort	10.96.181.117	<none>	8080:3000/TCP
kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP
mysql-service	ClusterIP	None	<none>	3306/TCP
news-service	ClusterIP	10.96.83.165	<none>	9090/TCP
recommendation-service	ClusterIP	10.96.43.221	<none>	8090/TCP
user-service	ClusterIP	10.96.54.51	<none>	8081/TCP

```
PS E:\MA PROJECT\MA_Newwise_Docker_compose - final\k8s>
```



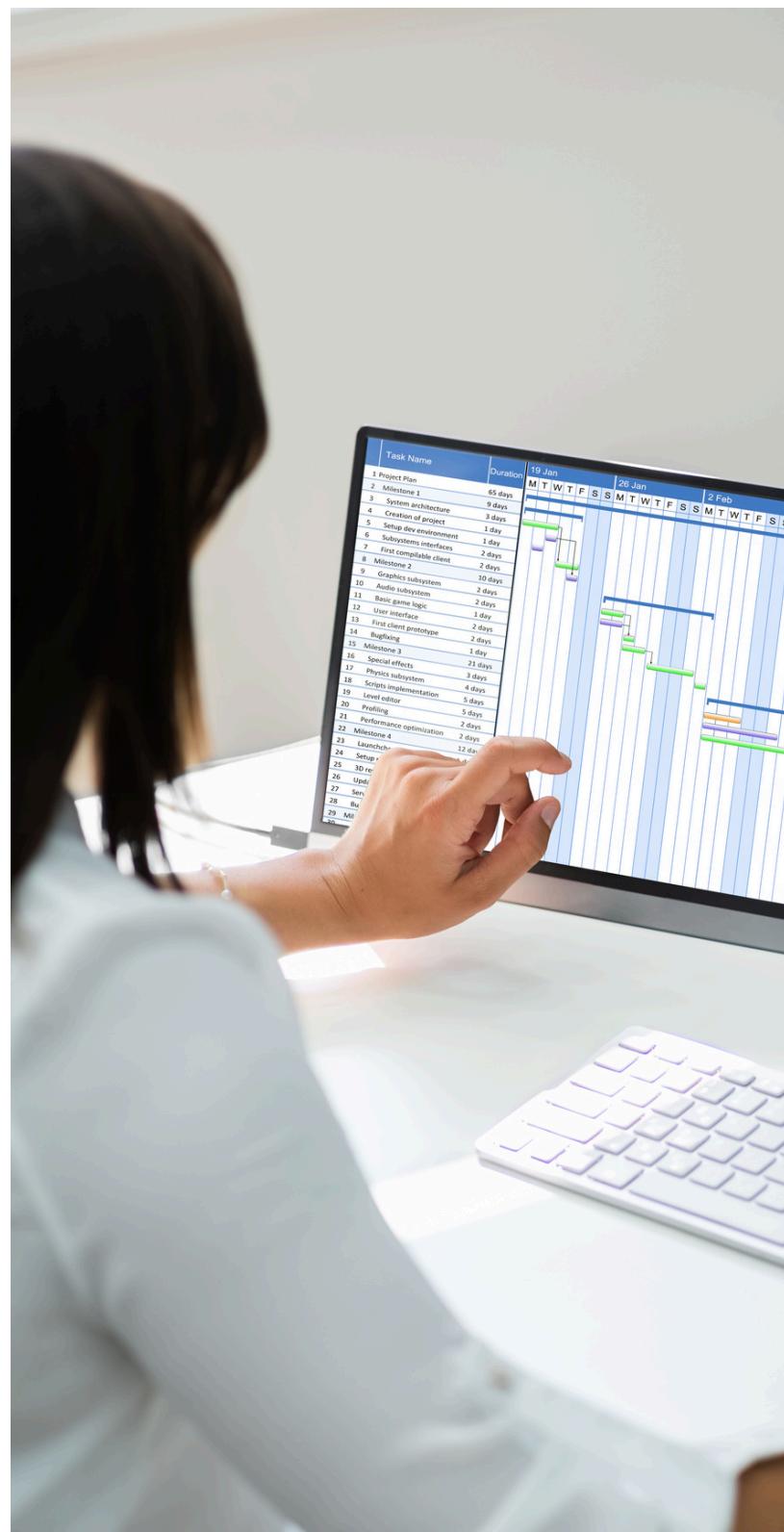
RELATED WORKS

- 1.<https://aicontentfy.com/en/blog/ai-generated-content-for-news-summarization>
- 2.<https://www.nylas.com/api-guide/api-integration/>
- 3.<https://www.baeldung.com/cs/authentication-web-apps>
- 4.<https://research.aimultiple.com/recommendation-system/>
- 5.<https://pmc.ncbi.nlm.nih.gov/articles/PMC10925703/>



CONCLUSION

The NewsSource Application utilizes a microservices-based architecture with API Gateway and Service Discovery to ensure a scalable, efficient, and personalized news consumption experience. By integrating news summarization, AI-based chat interaction, authentication, and recommendation systems, this platform aims to transform the way users access and interact with news content.





NEWS &



FORECAST

THANK YOU

BEST PRESENTATION TEMPLATE

Presentations are tools that can be used as lectures, speeches, reports, and more.
Presentations are tools that can be used.

HOME

SERVICE

END SLIDE