Project Report :TopTalk, The News Aggregator Application

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Overview of the Project

TopTalk is a news aggregator application designed to provide users with a personalized and streamlined news consumption experience. The app aggregates news from various sources and categorizes them to suit user preferences.

Brief Description of the Problem the Application Addresses

In the age of information overload, it is challenging for users to keep up with the vast amount of news published daily. TopTalk solves this problem by filtering and categorizing news articles based on user preferences, making it easier for users to stay informed about topics that matter to them.

Purpose and Objectives of the Project

- **Purpose:** To create a user-friendly platform that delivers personalized news content to users.
- **Objectives:**
    - To aggregate news from multiple sources.
    - To allow users to select and manage their news categories.
    - To enable users to bookmark and manage their favorite articles.
    - To provide an admin interface for adding, updating, and deleting custom news articles.
    - To implement user authentication and authorization.

Project Scope

Definition of the Boundaries of the Project

TopTalk is designed to function as a web application accessible via modern web browsers. The project does not include mobile app development and integrations with third-party APIs beyond the NewsAPI for fetching news articles.

Key Features and Functionalities

- **User Authentication:** Sign up, login, and logout functionalities with JWT-based authentication.
- **News Aggregation:** Fetching news articles from NewsAPI and displaying them to users.
- **Personalized Experience:** Users can select their preferred news categories during sign-up and update them later.
- **Bookmarks:** Users can bookmark their favorite articles for later reference.
- **Admin Interface:** Admin users can add, update, and delete custom news articles.
- **Search Functionality:** Users can search for news articles using keywords.
- **Responsive Design:** The application is optimized for various screen sizes.

Functional Requirements

Detailed Description of the Features and Functionalities

User Authentication

- **Sign Up:** Users can create an account with a username, email, password, and preferred news categories.
- **Login:** Users can log in using their email and password.
- **Logout:** Users can log out of their account.

News Aggregation

- **Fetch News:** The application fetches news articles from NewsAPI based on user-selected categories.
- **Display News:** News articles are displayed on the homepage, with images and brief descriptions.

Personalized Experience

- **Category Selection:** Users can select their preferred news categories during sign-up.
- **Update Categories:** Users can update their preferred categories from their profile settings.

Bookmarks

- **Add Bookmark:** Users can bookmark articles they find interesting.
- **View Bookmarks:** Users can view their bookmarked articles from the bookmarks page.

Admin Interface

- **Add News:** Admins can add custom news articles.
- **Update News:** Admins can update existing custom news articles.
- **Delete News:** Admins can delete custom news articles.

Search Functionality

- **Search News:** Users can search for news articles using keywords.
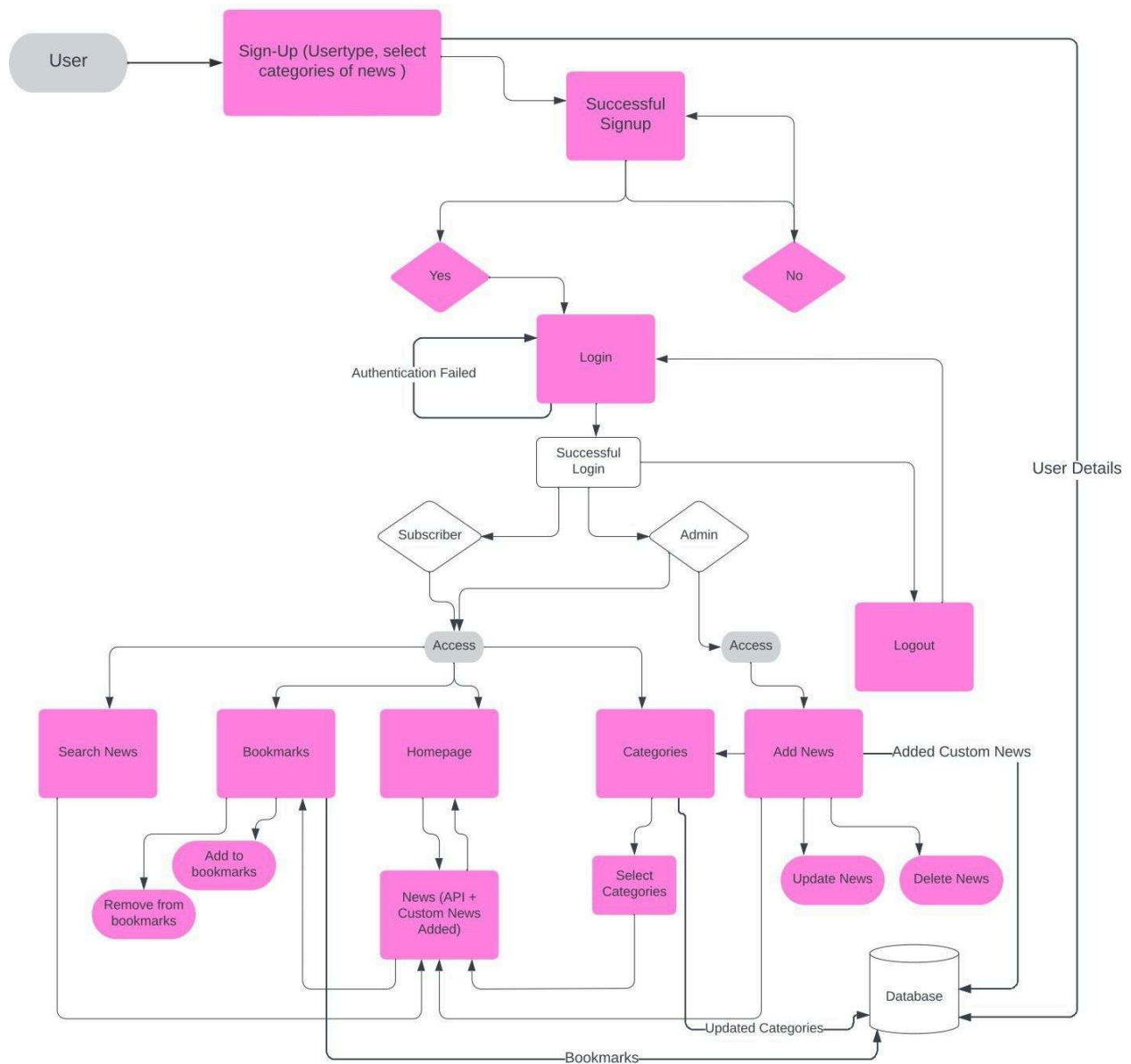
Use Cases and User Stories

1. **User Registration**
   - As a new user, I want to sign up with my email, password, and preferred categories, so I can personalize my news feed.
2. **User Login**
   - As a registered user, I want to log in using my email and password, so I can access my personalized news feed.
3. **View News**
   - As a user, I want to view news articles in my preferred categories on the homepage, so I can stay updated on topics I care about.
4. **Bookmark News**
   - As a user, I want to bookmark articles I find interesting, so I can read them later.
5. **Admin Management**
   - As an admin, I want to add, update, and delete custom news articles, so I can manage the content available on the platform.
6. **Search News**
   - As a user, I want to search for news articles using keywords, so I can find specific information quickly.

Conclusion

Summary of the Project Requirements and Objectives

TopTalk aims to provide a seamless and personalized news consumption experience by aggregating news from various sources and allowing users to customize their news feed based on their interests. Key features include user authentication, personalized news categories, bookmarks, and an admin interface for managing custom news articles. The project is designed to be a responsive web application accessible via modern web browsers.

News Aggregator Work flow diagram

User → **Sign-Up (Usertype, select categories of news)** → **Successful Signup**

Successful Signup
- **Yes**
- **No**

Yes → **Login**

Authentication Failed → **Login**

Login → **Successful Login**

Successful Login
- **Subscriber**
- **Admin**

Subscriber → **Access**

Admin → **Access**

Logout → **Login**

Access (Subscriber):
- **Search News**
- **Bookmarks**
- **Homepage**

Access (Admin):
- **Categories**
- **Add News**

Search News
- **Remove from bookmarks**

Bookmarks
- **Add to bookmarks**

Homepage → **News (API + Custom News Added)**

Categories → **Select Categories**

Add News ← **Added Custom News**
- **Update News**
- **Delete News**

Database

Updated Categories → **Database**

Bookmarks → **Database**

User Details → **Database**

Future Enhancements

Potential Future Enhancements for TopTalk

1. **Mobile Application:** Develop a mobile version of the application for iOS and Android platforms.
2. **Push Notifications:** Implement push notifications to alert users about breaking news in their selected categories.
3. **Social Sharing:** Allow users to share articles directly to social media platforms.
4. **Multi-language Support:** Add support for multiple languages to cater to a wider audience.
5. **AI-based Recommendations:** Use AI to recommend articles based on user reading habits and preferences.