PrivateRecSys

D2. Searx Integration

3rd September, 2022

Introduction

This deliverable presents the architecture of the PrivateRecsys and Searx System integration.

The integration of Privacy Recsys is achieved by introducing a “**login**” to privacy recsys from the Searx Interface, filtering the results received by the engines and adding a new category on searx, to make available the results of the Integration.

In the future, when all items are used for recommendations, and all results will be filtered by PrivateRecsys before they are presented to the user, this category will not be needed.

This guide can be useful to anyone interested in extending the PrivateRecSys project or building other integrations for the Searx system.

RecSys Searx System Architecture

System Diagram

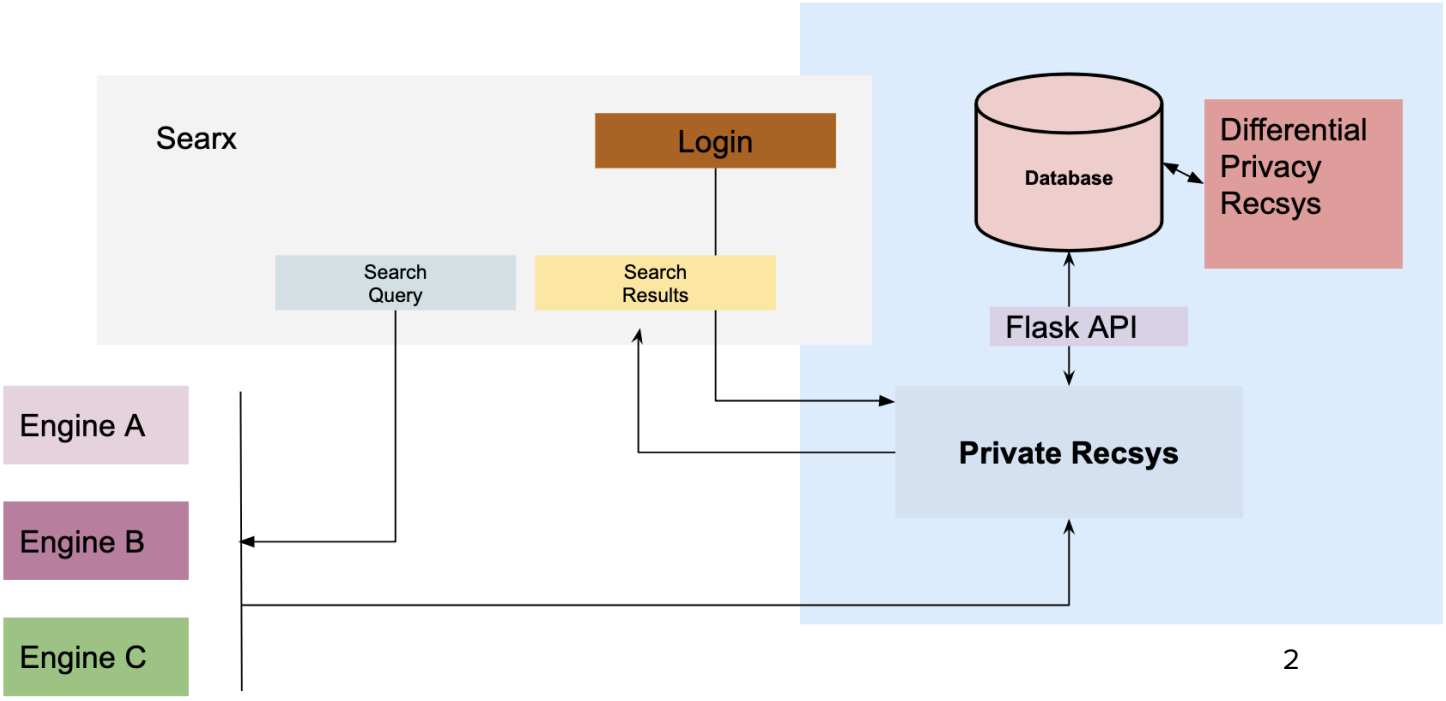
The following diagram demonstrates the system architecture of the Integrated PrivateRecys -Searx System.

The Private Recsys system, demonstrated on the right side of the screen is an independent system that consists of a **database** that stores user's data including their profile, the items they have rated, as well as the available item. The private Recsys system also included **Differential Privacy Recsys, a library** of algorithms for producing privacy preserving recommendations and an **API** (implement)ed via Flask) that enables users to register users, rate items, run recommendations and serve the recommendations to the users.

Searx allows the addition of engines to receive results. For producing effective recommendations the results from the search **engines** must be filtered before they are presented to the user.

A **Login** functionality must be implemented on Search to assist in the integration of the PrivateRecsys into Rec, and various UIs must be implemented to present the information.

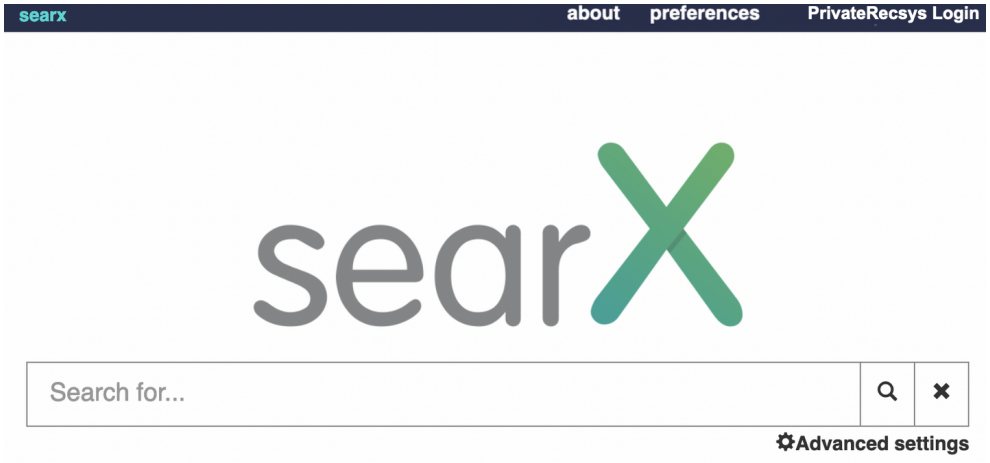
Example designs of the UIs are presented in the next section,



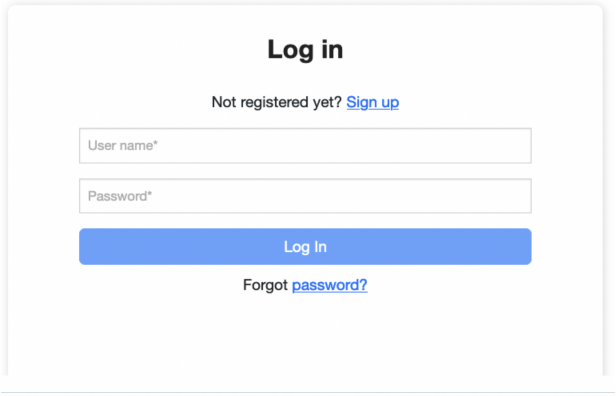
User Interface Prototype Design

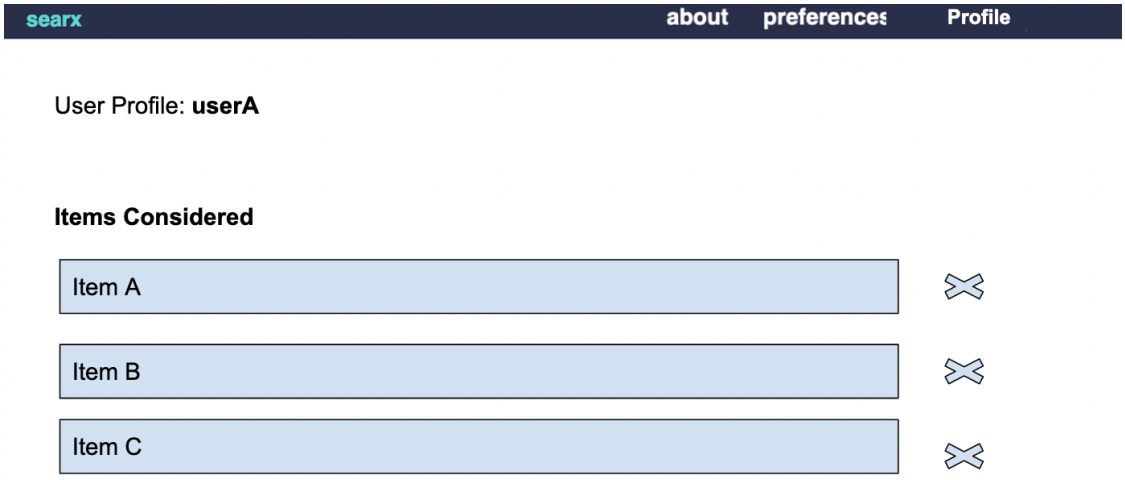
Login:

The user shall be able to login to the PrivateRecsys from the Seax system. A button on the top right of the screen, will guide the user to login, and redirected to the user profile.

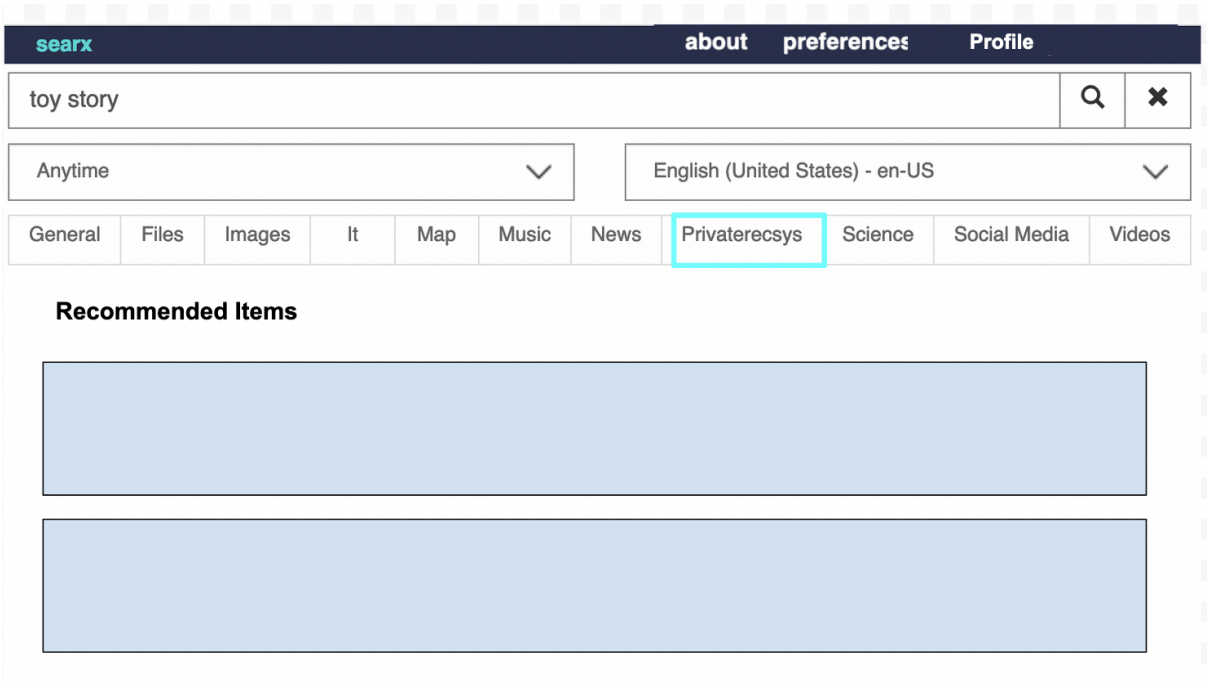


By clicking on the profile button the user must be able to see what items. (previously rated items or items the user has interacted with) are considered for these recommendations. The user must be able to remove items from the user profile and from being used for recommendation. In this way, the user has control over what data are stored.





The user will be able to see recommended items in the PrivateRecsys card of the searx engine.



In the future, the system can be further expanded so all items are considered and all categories are filtered / ranked by the private recsys .

Conclusion

In this deliverable the system architecture of the integrated PrivateRecsys - Searx system is presented.

This document will be updated after the development of the system, to include the components analysis as well as a sequence diagram. This will provide a better understanding of how the system works and how one can extend and modify it.