

Fall 2018 Senior Design Project EnvoScholar 1.0

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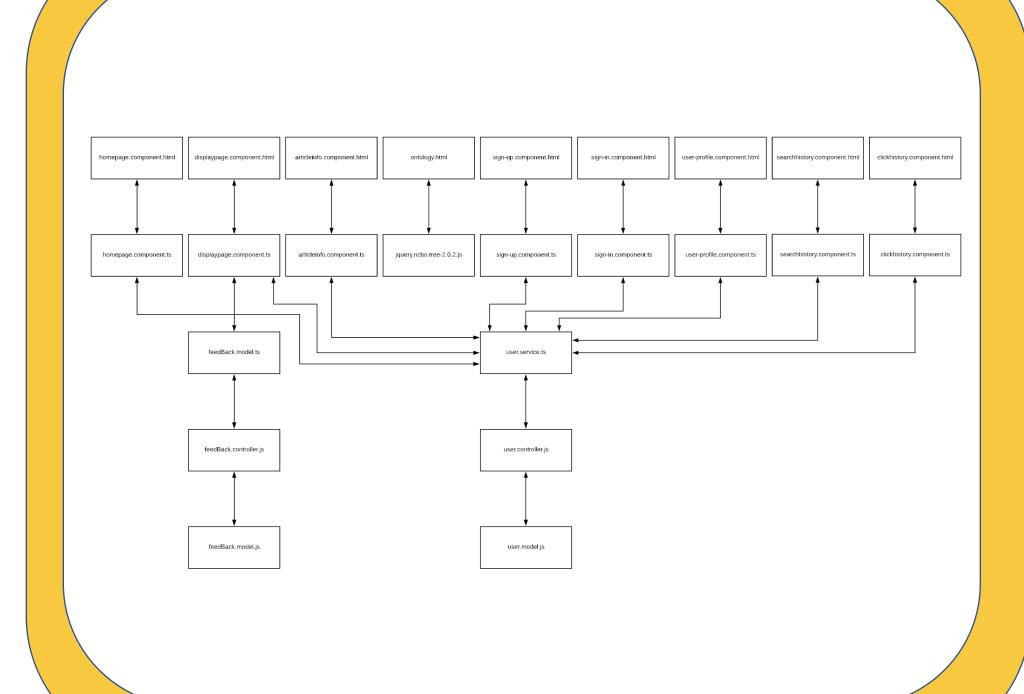
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Problem

Today, semantic search is a newer concept seeking to understand user's intents by adjusting searches based on the contextual meaning of words and terms. With the rise of websites such as Semantic Scholar, the surface of semantic search is being broken. Currently there is no platform to search via a semantic search for environmental scientific articles. EnvoScholar is here to change that.

Class Diagram



Implementation

Angular 6 was used to create the functionality of the front end.
HTML5, CSS, and Bootstrap Studio were used to style and edit the front end. Elasticsearch was used to enhance the GET requests to the PostgreSQL database containing the articles. NodeJS and Express were used to create the server that connects to the Mongo Database containing the users.

Verification

Example for Sort and Filter

Test case ID: NVOS-7 Sort and Filter Description/Summary of Test: Sort by recency and filter given date ranges

Pre-condition: Displayed results list given a query Expected Results: Successful sorting and filtering Actual Result: Successful sorting and filtering

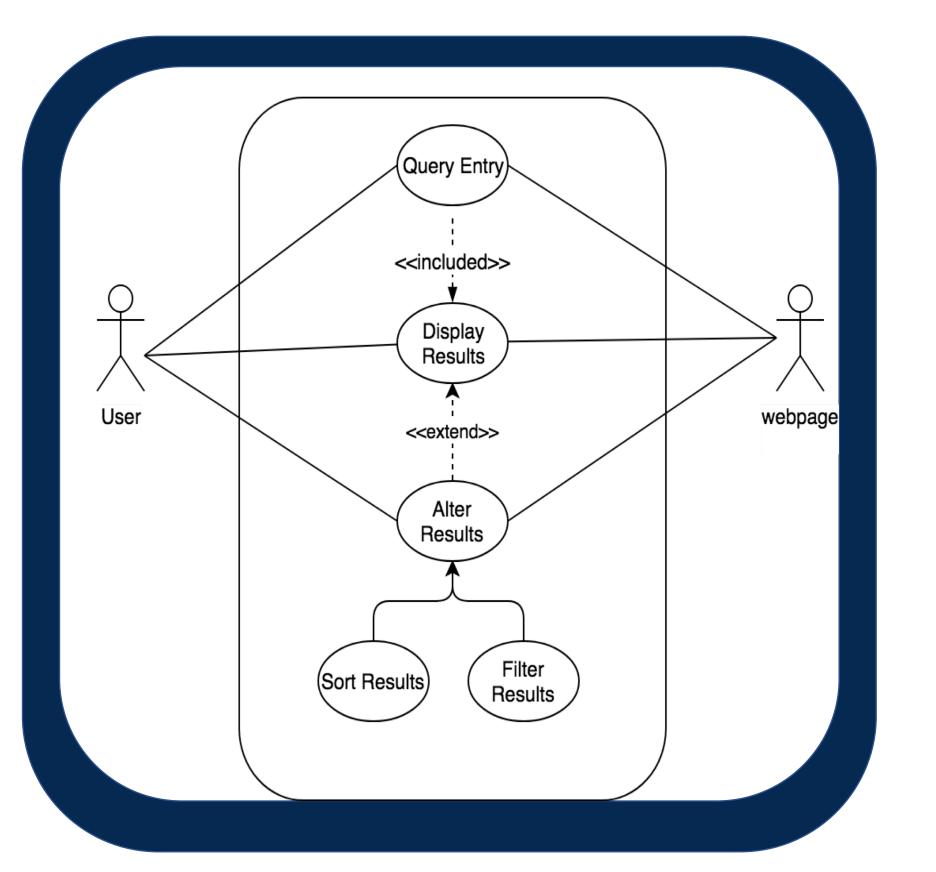
Status (Fail/Pass): Pass

Current System

Once navigated to the EnvoScholar homepage a user enter a query which will be sent to the backend and provide results on a new page. Here the user can manipulate the results via sorting and filtering (specifically by date range). Crosscompare their search results via Microsoft Academic or Semantic Scholar, while applying the filter. The filtering is done after the JSON file is returned via the front-end. The user may also choose to leave feedback for the website which is stored in the MongoDB database.

Object Design

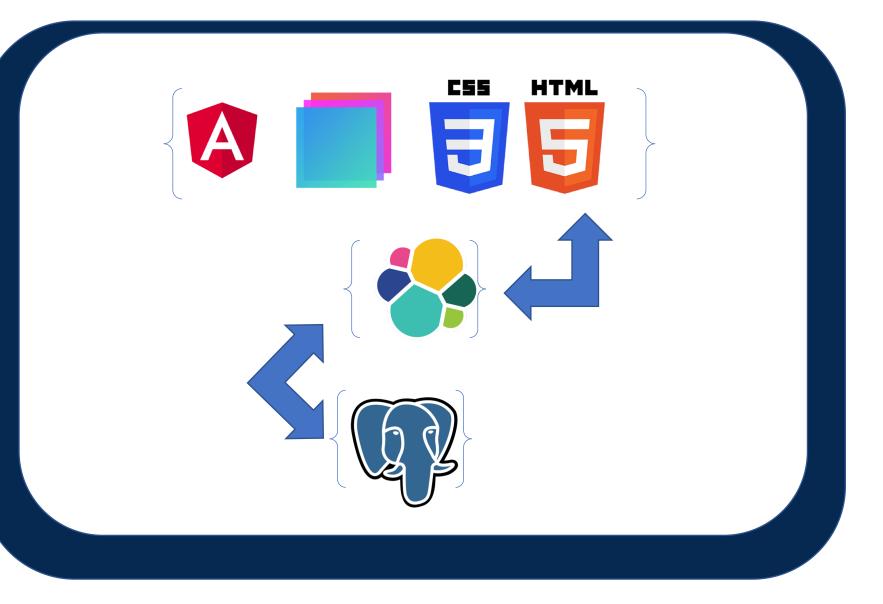
Example Use Case Diagram: Sort and Filter



Screenshots

Filter		Sort	
Impact of litter quality on mineralization processes in managed and abandoned pasture soils in Southern Ecuador Shiliang Liu - Shiliang Liu - 2010-01-31 Tropical regions are currently undergoing remarkable rates of land use change accompanied by altered litter inputs to soil. In vast areas of Southern Ecuador forests are clear cut and converted for us View PDF 95 Cite Save & Share	Sort Recency Relevance	ppact of a pesticide cocktail (fenhexamid, folpel, deltamethrin) on the nundance of Glomeromycota in two agricultural soils Sort Date Range	Filter Date Range ClearFilters
Leaching of glyphosate and AMPA under two soil management practices in Burgundy vineyards (Vosne-Romanée, 21-France) Jian-Xun Qin -2005-11-30 Some drinking water reservoirs under the vineyards of Burgundy are contaminated with herbicides. Thus the effectiveness of alternative soil management practices, such as grass cover, for reducing the		Greenhouse gas fluxes from a grazed grassland soil after slurry injections and mineral fertilizer applications under the Atlantic climatic conditions of NW Spain Jian-Xun Qin -2016-12-15 The number of studies that investigate how agricultural practices on dairy farms in the North West (NW) of Spain affect greenhouse gas (GHG) fluxes from soils is limited. Thus, the objective of this s	Recency
Niew PDF 99 Cite Save <\$ Share Florida seagrass habitat evaluation: A comparative survey for chemical quality I Maiz -2007-03-31 Contaminant concentrations were determined for media associated with 13 Florida seagrass beds. Concentrations of 10 trace metals were more commonly detected in surface water, sediment and two seagrass View PDF 99 Cite Save <\$ Share		© View PDF 95 Cite © Save <\$ Share Chloride accumulation vs chloride excretion: Phytoextraction potential of three halophytic grass species growing in a salinized landfill 1 Maiz -2016-12-01 Phragmites australis, Puccinnellia nuttalliana (salt accumulators), and Spartina pectinata (salt excretor) were investigated based on their relative abilities to phytoextract chloride from a cement ki	
Effects of Bauxsol™ and biosolids on soil conditions of acid-generating mine spoil for plant growth Ute Hamer -2004-01-31 Pot trials were conducted to examine the effects of Bauxsol™ and biosolids on mine soil conditions for plant growth. Sole application of biosolids did not significantly enhance the growth of the plant ② View PDF ③ Cite ② Save 《 Share		Diview PDF \$5 Cite Save < Share 150 years of macronutrient change in unfertilized UK ecosystems: Observations vs simulations Ute Hamer -2016-12-01 Understanding changes in plant-soil C, N and P using data alone is difficult due to the linkages between carbon, nitrogen and phosphorus cycles (C, N and P), and multiple changing long-term drivers (e	

System Design

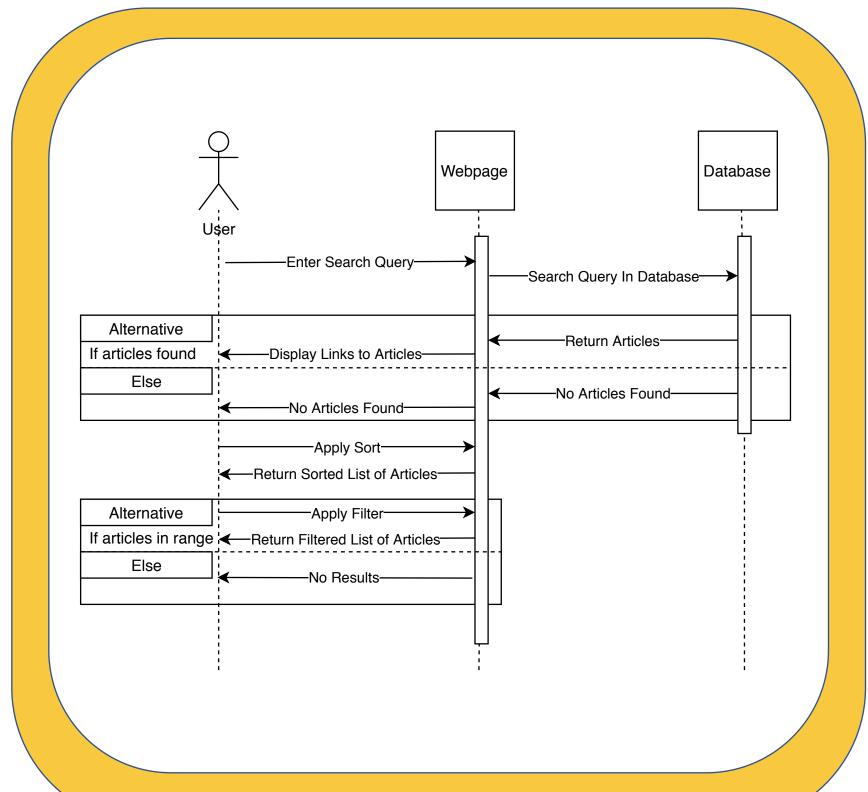


Requirements

The UI must be web-based, cross-browser, cross-platform, and interactive. Contain a log-in feature that users can view and interact with their accounts. In turn it will contain their information as well as their search history, include a search feature that interacts with the existing backend search. Users can also view search results backend by database query of indexed articles.

Contains a view of concepts returned by a query analysis algorithm, and enables users to sort and filter results.

Example Sequence Diagram: Sort and Filter



Summary

In EnvoScholar 1.0 my partner and I successfully implemented basic functionality creation of a personalized profile, searching, manipulating results and providing the users with the most desired articles. Version 1.0 is just the beginning for EnvoScholar, my partner and I came from knowing very little web development and project management to absolutely thriving in both fields with true passion. EnvoScholar has a long way to go but we believe a successful project always starts with a great foundation.

