

Project/Software Design Document

A Web App for Searching through STEM Abstracts and Theses

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Statement of Goals

The goal of this project is to create a web-based UI for improved searching through STEM thesis papers and abstracts from past Mass Academy students. This product will provide search functionality, filter functionality, group abstracts according to different parameters (category, methods used, etc.) Currently, the papers are tucked away in folders and the abstracts are in one long 200-page PDF that is hard to search through. This project will provide a better way for students to access and learn from past research which they can apply to their own STEM projects.

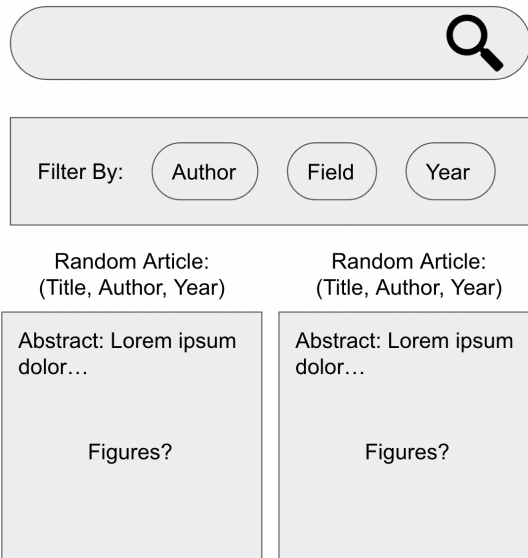
Functional Description – Minimum Viable Product (MVP)

1. Search bar that will search for keywords in the abstracts, titles, authors, and fields for each entry. This will allow users to search for papers in specific fields.
2. A series of filters that can be applied on the entire database instead of a keyword search (integration with keyword search will be a latter priority). There shall be filters for the field, subfield, authors, and year.
3. When an entry is clicked on from a search query, a full page overview of the abstract/thesis shall be displayed. This will include the following:
 - Authors
 - Title
 - Year
 - Field & subfield
 - Full PDF (if applicable)
 - Abstract

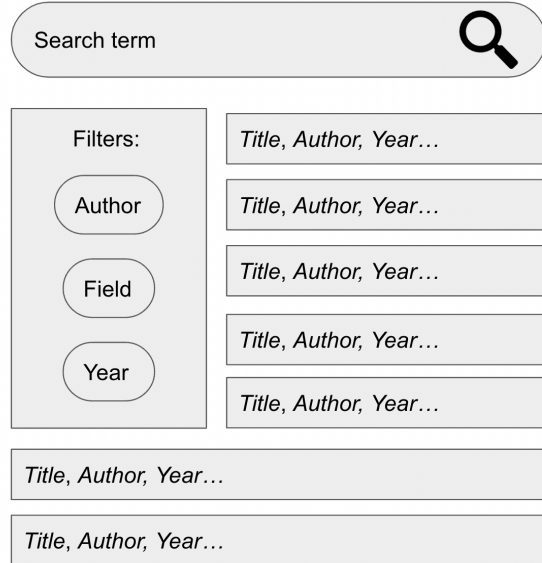
Technical and Data Feasibility

- Our project will utilize Google's Firebase framework to create a database for Mass Academy abstracts, theses and their respective data
- Our initial testing will utilize Dr. C's 200-page document of abstracts for initial database input. Future input will be configured after our minimal-viable product is achieved

User Interface

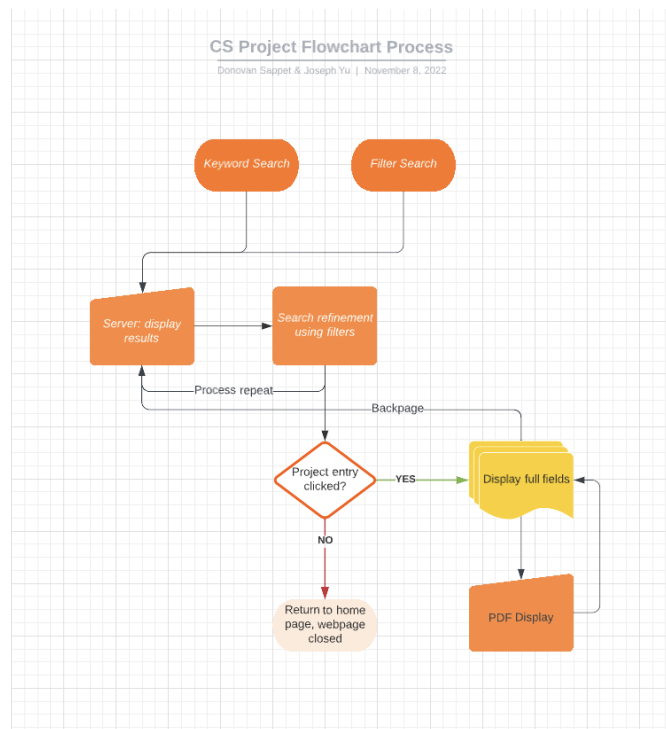


The main home page will consist of a search bar and filters in a similar fashion to Google. The filters will have dropdowns on a hover.



The results for a keyword search will be listed in rows, with a section for filters on the left as well.

Flow Chart and/or Structural Diagram



Persistent Storage

The application will store data on a Cloud Firestore database hosted on Google servers, this is a permanent solution. The web server will be hosted on the WPI network.