

CS 4320 Final Project: Requirements Analysis & Software Design

OCDX Engine

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Requirements Analysis

User Descriptions

Rogers/Pudotha

- **Data Scientist**
 - Uploads and downloads data
 - Conducts sophisticated and systematic analyses of data
 - Extracts insights from large data sets
- **System Admin**
 - Review the uploaded data
 - Manage users

Use Cases

Skinner/Hofer

- User can Browse by keyword for Manifest
- User can Contribute to Existing Dataset

- User can Download Info
- User can Generate or Upload Manifest
- User can Save
- User can Search on Manifest
- User can Upload Data Set

Functional Requirements

Hofer/Raza

- **Database Backend**
 - The system will be able to perform efficient searches, using keywords.
 - The system should be able to upload and update manifests.
- **Business Logic**
 - Process search, upload, and update requests, both into and out of Database Layer
- **Front-End Framework**
 - Accept and serve search, upload, and update requests

Non-Functional Requirements

Raza/Pudotha

- **Space Requirements**
 - The system must have enough physical space to handle extremely large data-sets.
 - We may need to implement a distributed system using clusters for efficiency.

- **Reliability Requirements**

- If the system crashes, the data and any manipulations/analytics must be preserved.

- **Privacy Requirements**

- The data access must be limited to authorized users only.
- The system must enable secure data transfer over the internet

User Requirements

Zhang/Rogers

- User will be able to upload Manifest.
- Manifest can be reviewed by others.
- User can edit or delete their Manifest.
- User can search for Manifest they wish to view or test.
- user will be able to include special comments or suggestions on manifest
- user should be able to notify the changes or suggestions that improves manifest to other users

System Requirements

Hofer/Rogers/Skinner

- **Web Server**

- Web Server must provide reliable service for the appropriate amount of traffic that will be sent and received from the system.

- **Database Backend**

- Database must be able to convert data into easily storable format,

and return in original format.

- **Storage Array**
 - System must create intermediate backups and update logging to revert to earlier states if needed
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Software Design

Sketches

Skinner/Rogers

- User can Browse by keyword for Manifest
- User can Contribute to Existing Dataset
- User can Download Info
- User can Search on Manifest

Browse

 search☐ Title ☐ Author ☐ Date ☐ Description

Title	Author	Date Created	Date Modified	Description	edit	view
Dataset 1	First Last	10-12-16			edit	view
Data set 2	First Last	10-11-16			edit	view
Data set 3	First Last	10-10-16			edit	view

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Dataset 1

Search this Manifest ...

Search

DOWNLOAD

ADD +

Information:

Files:

Contributors

- User can Generate or Upload Manifest
- User can Save
- User can Upload Data Set

OCDX

BROWSE UPLOAD

Logout

Upload

Title:

Description:

Availability: ☐ Public ☐ Private

Files:

Browse your computer
or
Drag and drop files
into the box

UPLOAD

Data

Zhang/Hofer

- **Members**
 - ID
 - name
- **OCDX_manifest**

- author
- date
- size
- category
- version
- modify_request

- **Users**

- ID
- name
- email
- phone

- **Login_attempts**

- userID
- date
- attempts

Change Log

- Version 1.0: Pre-Implementation Design *10-16-2016*