

Text Extractions from Documents into Elasticsearch

Team: sddec22-19

Client: Buildertrend

Advisor: Goce Trajcevski

Team Members: Bruce Bitwayiki, Jared Hayashi,
Rushal Sohal, Tiffany Mayberry

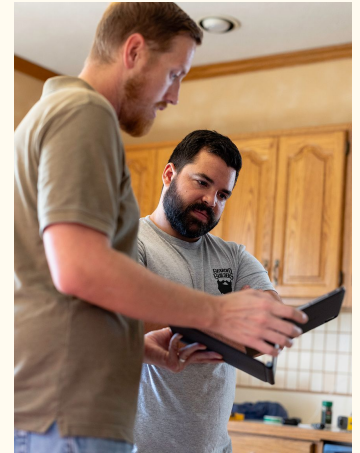
<http://sddec22-19.sd.ece.iastate.edu/>

Overview



The Client

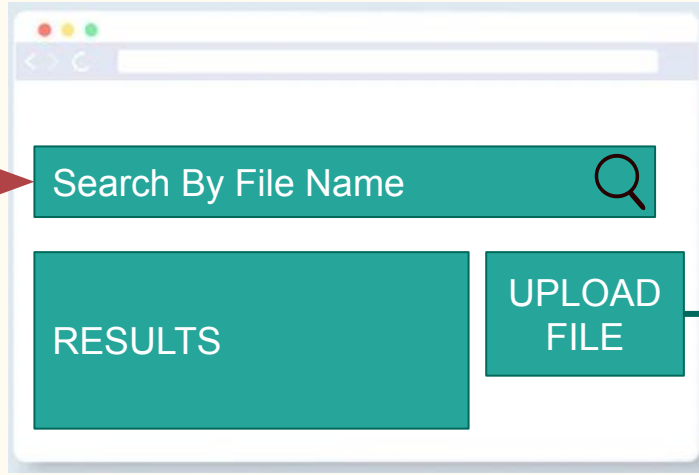
- Industry-Leader in Construction Management Software
- An all-in-one platform: set a budget, communicate with clients, schedule work and keep tabs on job site progress
 - Presales, Project Management, Financial Tools, Customer Management
- 27,000+ construction companies use Buildertrend





Buildertrends Current Solution

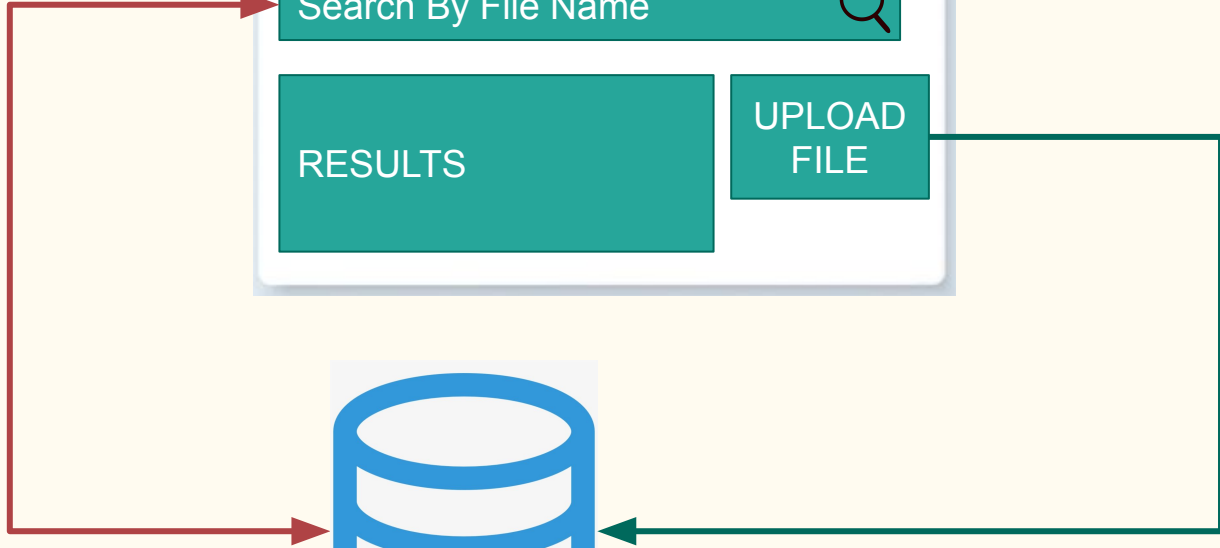
Fetch & Return
Results



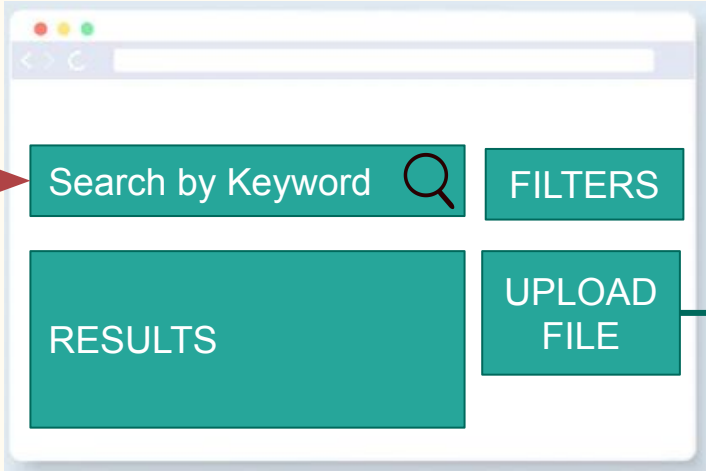
Upload
File



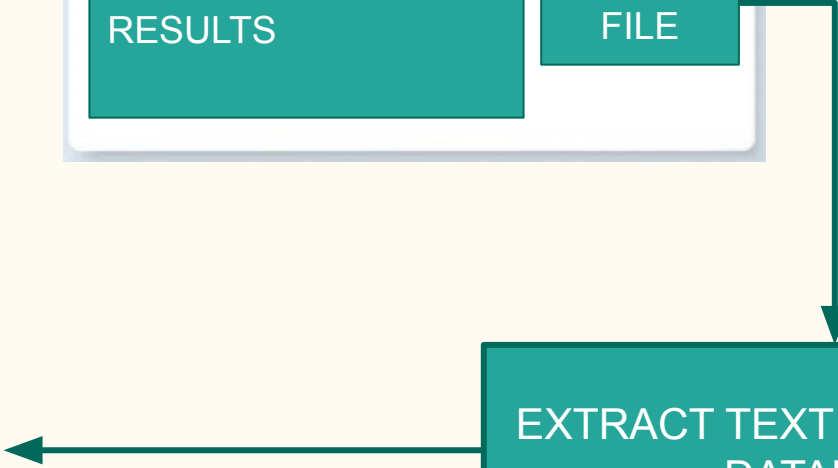
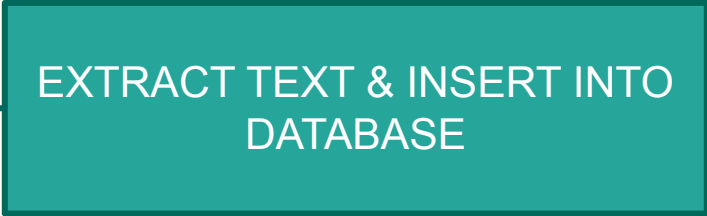
DATABASE



Basic Overview of Our Project



DATABASE



Task Responsibility

FRONT-END

Tiffany Mayberry (SE)

Rushal Sohal (CPR E)

BACK-END

Jared Hayashi (SE)

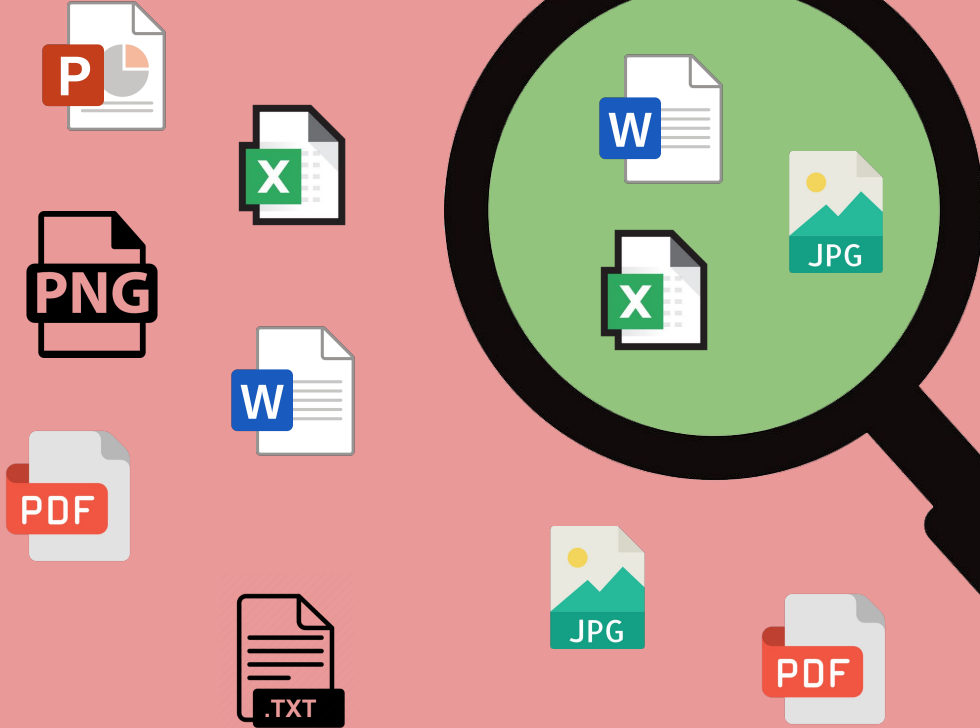
Bruce Bitwayiki (CPR E)

Requirements & Stuff

—

Functional Requirements

ElasticSearch



Upload

Extract File Content & Metadata

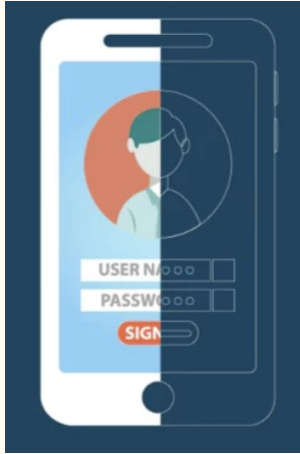


Search for Files Containing:
"5213 Pines Dr."

Filters:

Only search .docx,
.jpg, .xlsx files

Non-Functional Requirements



Easy to use UI



Return result within 10
seconds



Easily modifiable and
scalable for future
functionality

Constraints and Considerations



Frontend should be a
web or desktop
application



Use **Elasticsearch** to
store the metadata



Application should **limit**
the returned results

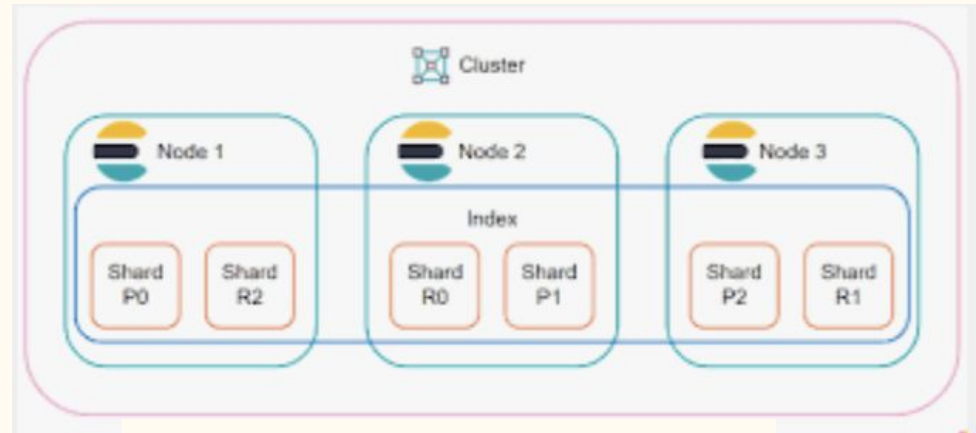
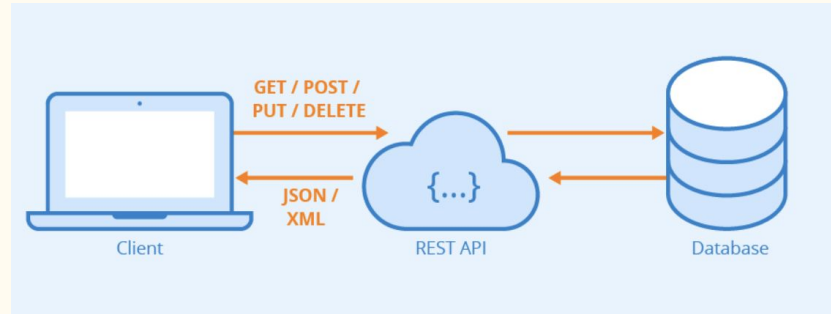
Elasticsearch

- **Free and open search and analytics engine**
- Based on the Lucene library
- Elastic Stack
- **At core - process JSON requests and return JSON data**
- **Index based searching**
- Structure based on documents
- Netflix, Ebay, Walmart, etc.



Risk Management & Mitigation

- Project Planning
- UI Integration
- REST API
- Elasticsearch Node reliability
- Text Extraction handler
- Testing



(⤴ Elasticsearch Structure)

Resource and Cost Estimate



ETG Server

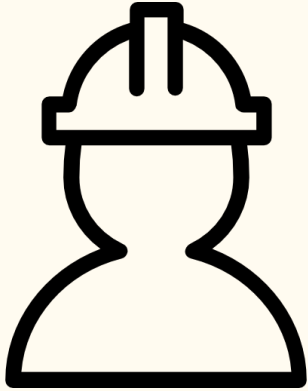


Open Source Packages

System Design



Users & Needs



Builders / Contractors
Access to
measurements, designs,
orders

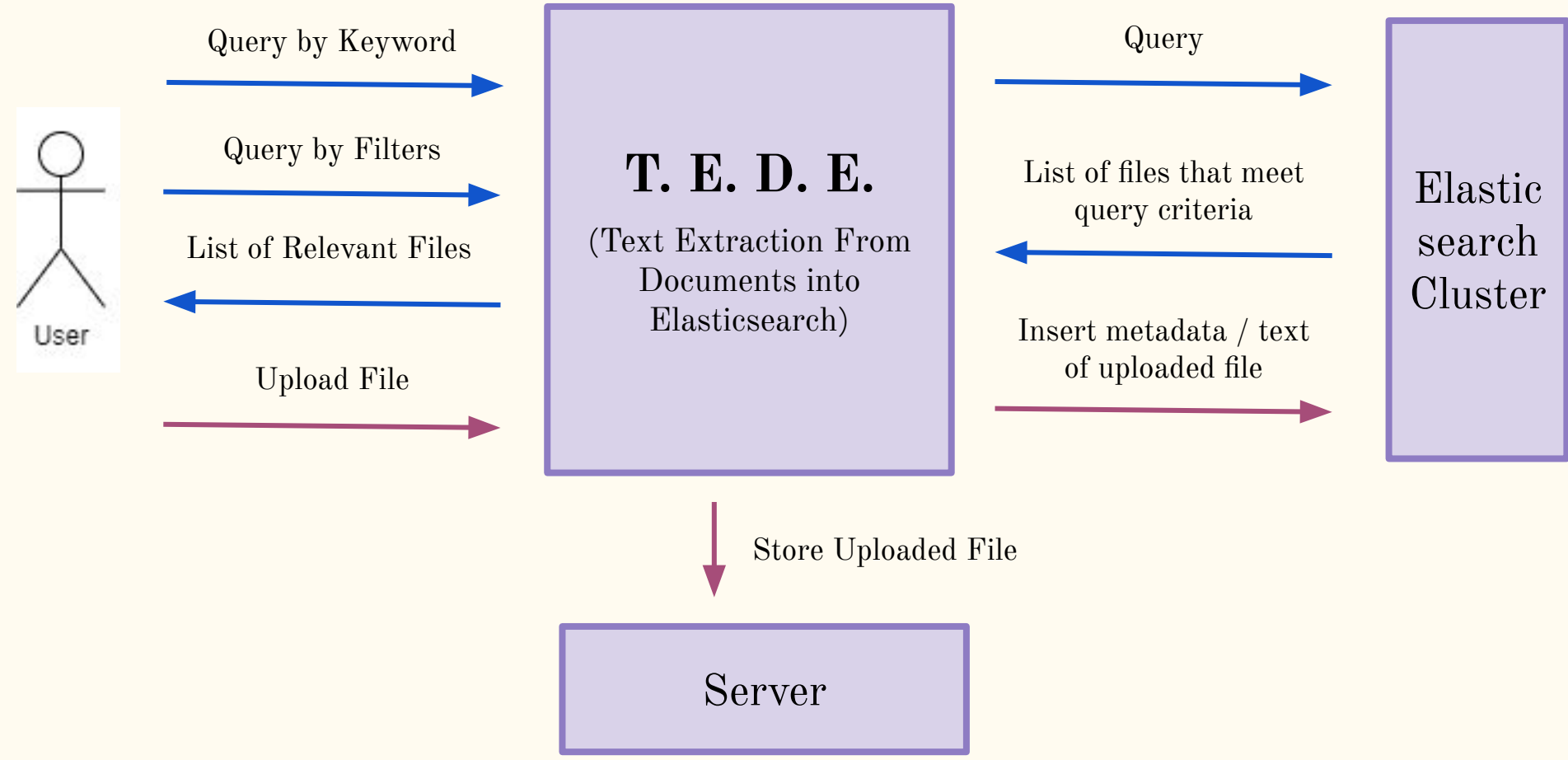


Homeowners
Contracts,
estimates/quotes,
specifications, notes

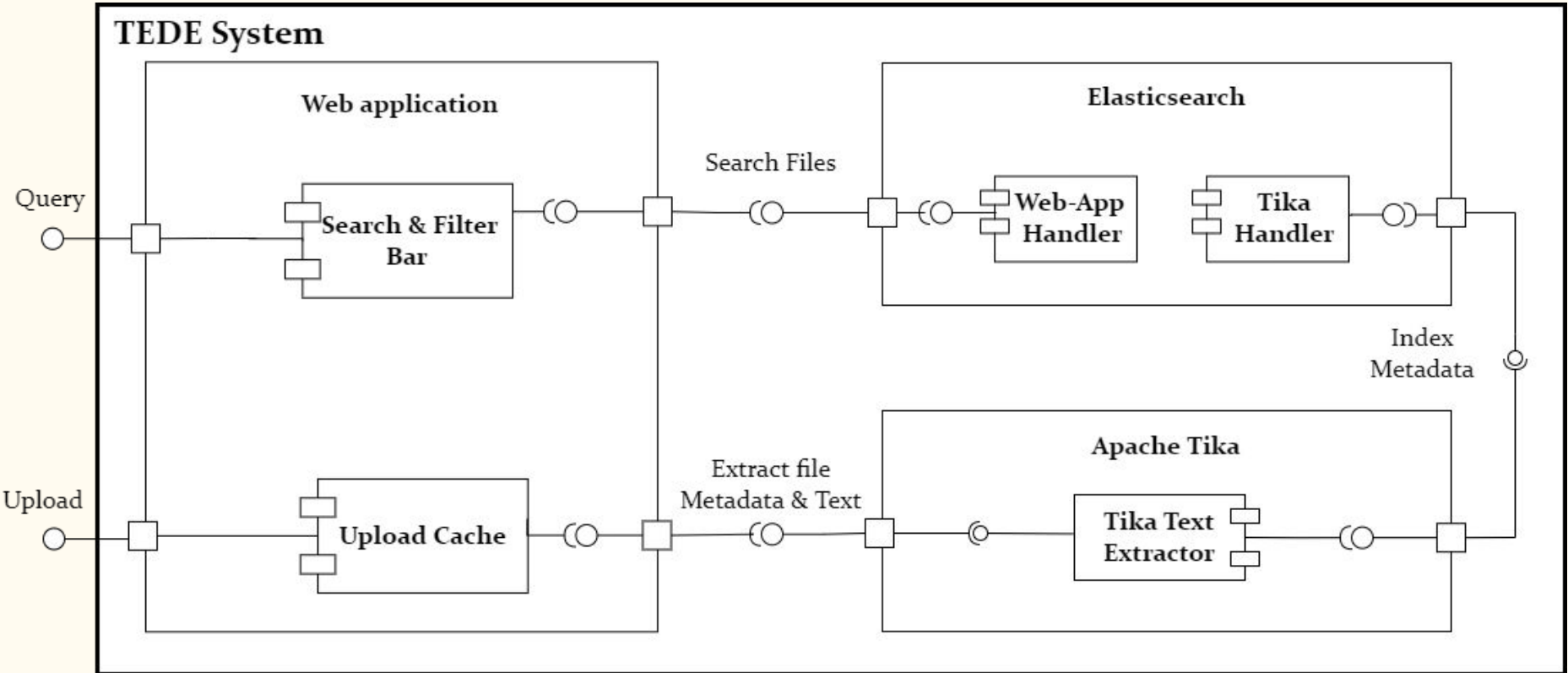


Buildertrend Staff
Support







Context Diagram



Component Diagram



Technology Stack

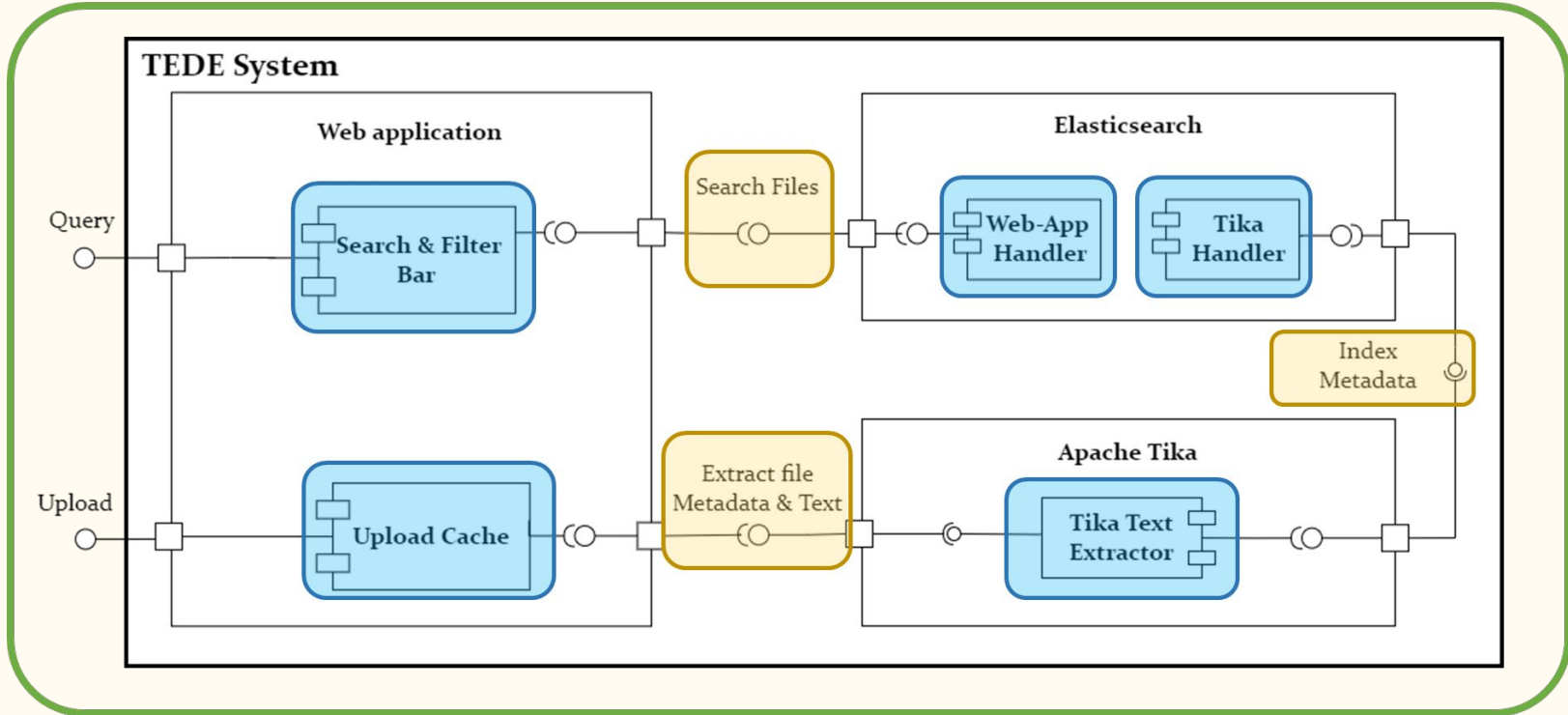
Web Application	Database	Text Extractor
 	 	 

Testing Plan

Interface Testing
Postman

Unit Testing
Junit, Jest, React Test Library

Integration & System Testing

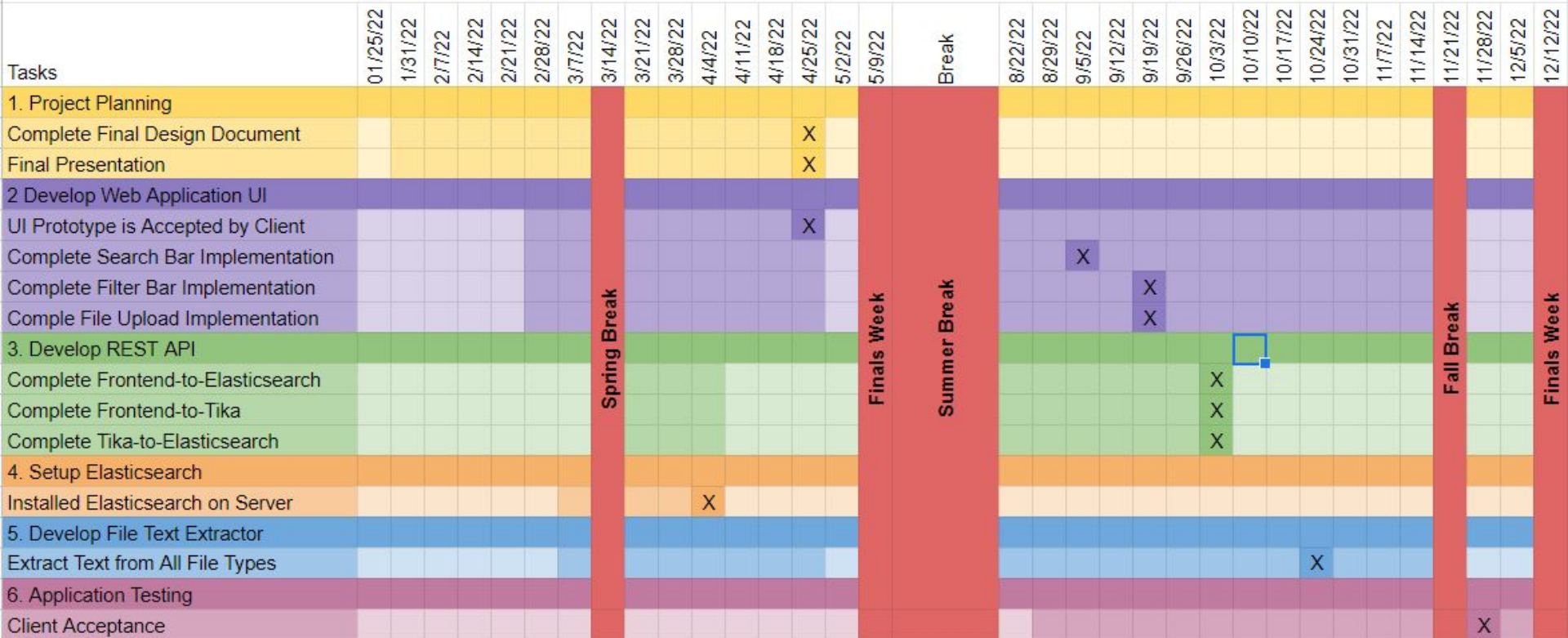


Project Plan



Project Milestones and Schedule

GOAL: Complete functionality before fall break



DEMO

