Project Milestone 4

Revised List of Features

- **Ability to submit a webpage and analyze GUI Breakdown, Metadata** *(Priority 1, must get this first)*
    - Done through Python script *(Priority 1, but almost done!)*
        - Must figure out how to call the script on web and pass data to javascript
    - Displayed using JS, HTML *(Priority 1, needs JS + more CSS work)*
- **Login + SQL database that stores queries** *(Priority 2, can complete this iteratively, but still required)*
    - Storing User Data in a SQL server *(Priority 2, can complete this iteratively, but still required)*
- **Ability to retrieve information about your previous queries** (done using the previous feature)
- **Ability to parse multiple requests** (can compare URL's on the "results" page) - *(Priority 1/2 - is important to have, but something we should implement *after* we get it working + displaying with just one. We need to consider this as we continue to iterate on our design and make it dynamic, both from a front-end and back-end standpoint)*
- **Export Data in one (or more) formats** *(Priority 2, same as before, but should be worked on iteratively once the other most important things are done)*
- (Stretch goal) **Share Data in one (or more) formats** *(Priority 4, not necessary, but a stretch goal if we have time. Might be tricky linking this to twitter/emails and stuff)*

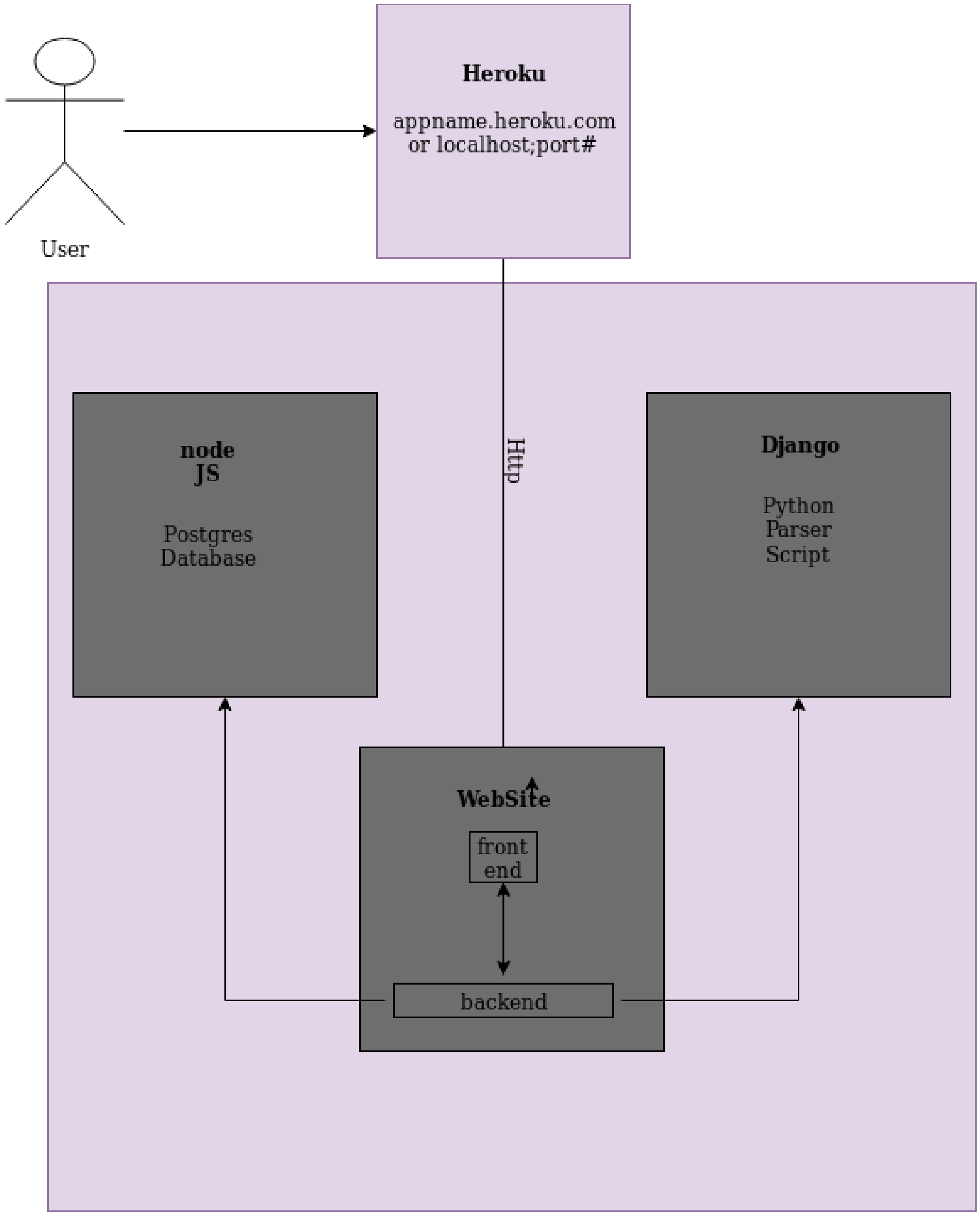
Architecture Diagram

https://drive.google.com/file/d/1PI3xpbJXVJhBWJDuJxNWu-aod23Zgfge/view?usp=sharing

We will be hosting the website using Heroku. On the database will be postgres on a nodeJS server and the python parser will be hosted on the same nodeJS Server with Django. Heroku will also hold the frontend/backend web page design and infrastructure.

Architecture Diagram

Project Milestone 4-200-2

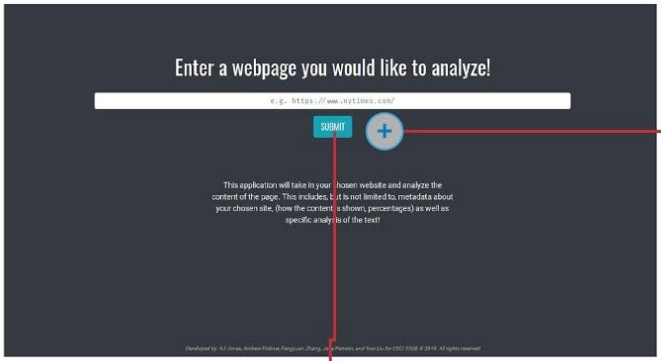


Front End design

https://www.lucidchart.com/invitations/accept/769d9d4a-955e-47eb-8b88-bb99f1d7dbc3

Front-End Design

Project Milestone 4 - 200-2

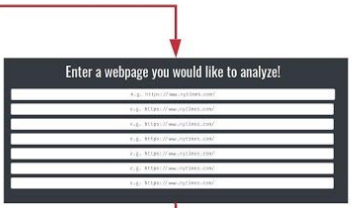


Enter a webpage you would like to analyze!

This application will take in your chosen website and analyze the content of the page. This includes, but is not limited to, metadata about your chosen site, (how the content is shown, percentages) as well as specific analysis of the text!

Developed by: AJ Jonas, Andrew Pickner, Fangyuan Zhang, [illegible] Hansen, and Yuxi Liu for CSCI 3308. © 2018. All rights reserved

Hitting plus allows you
to search more URLs

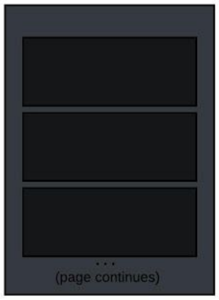


Enter a webpage you would like to analyze!

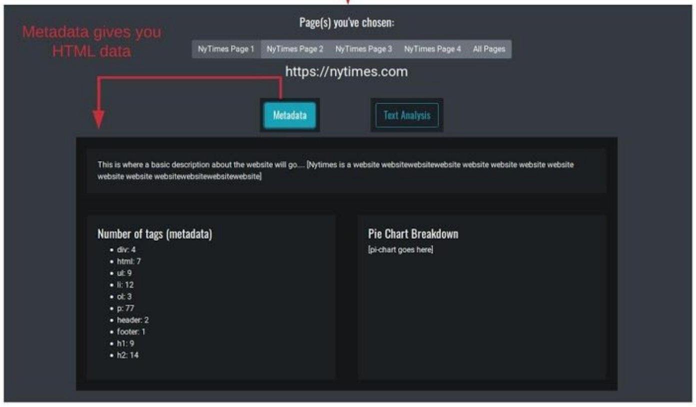
e.g. https://www.nytimes.com/
e.g. https://www.nytimes.com/
e.g. https://www.nytimes.com/
e.g. https://www.nytimes.com/
e.g. https://www.nytimes.com/
e.g. https://www.nytimes.com/
e.g. https://www.nytimes.com/

"Submit" will bring you
to the "Results" page

Adding more searches displays
on the results page with new
boxes, instead of just the one:



. . .
(page continues)



Metadata gives you
HTML data

Page(s) you've chosen:

https://nytimes.com

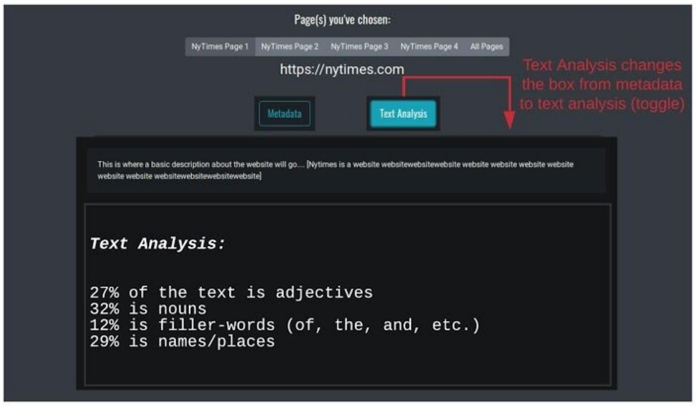
This is where a basic description about the website will go.... [Nytimes is a website websitewebsitewebsite website website website website website website websitewebsitewebsitewebsite]

Number of tags (metadata)

- div: 4
- html: 7
- ul: 9
- li: 12
- ol: 3
- p: 77
- header: 2
- footer: 1
- h1: 9
- h2: 14

Pie Chart Breakdown

[pi-chart goes here]



Page(s) you've chosen:

https://nytimes.com

Text Analysis changes
the box from metadata
to text analysis (toggle)

This is where a basic description about the website will go.... [Nytimes is a website websitewebsitewebsite website website website website website website websitewebsitewebsitewebsite]

```
Text Analysis:

27% of the text is adjectives
32% is nouns
12% is filler-words (of, the, and, etc.)
29% is names/places
```

Web Service Design

Our app uses several smaller API's to pass the data around and create the useful displays and analysis of the webpage.

Requests: "allows you to send HTTP/1.1 requests extremely easily. There's no need to manually add query strings to your URLs, or to form-encode your POST data. Keep-alive and HTTP connection pooling are 100% automatic, thanks to *urllib3*. (From *Requests* docs.)"

This library allows me to send a request via HTTP to go out and gather the page data from a given URL. If successful, the get() method returns the response from the request, if not successful we can raise an exception. The data this API receives is the URL the user wants to analyze. Then, this API outputs the actual html page.

Beautiful Soup: "is a Python library for pulling data out of HTML and XML files. It works with your favorite parser to provide idiomatic ways of navigating, searching, and modifying the parse tree. It commonly saves programmers hours or days of work. (From *Beautiful Soup* docs.)"

This library allows quick manipulation of the DOM so I can obtain data about the tags and about the actual text rather quickly. The data I pass to this API is the html page that I've requested using the API above. This API outputs the breakdown of html tags on the page, and the actual text of the page.

NLTK: "is a leading platform for building Python programs to work with human language data. It provides easy-to-use interfaces to over 50 corpora and lexical resources such as WordNet, along with a suite of text processing libraries for classification, tokenization, stemming, tagging, parsing, and semantic reasoning, wrappers for industrial-strength NLP libraries, and an active discussion forum. (From *NLTK* docs.)"

I pass this API the raw text from the page, and allow the power of NLTK to tokenize and process this text. With this text processed and analyzed, I can output this data from this API. This API handles all text analysis, and that's it pretty much it.

Database design

This deliverable provides a summary design of your application's database.

The design document should identify each type of data being stored in your database.

This may be documented in terms of a schema definition, showing data entities (“files”) and attributes (“fields”)

This may be documented via an Entity Relationship Diagram showing database tables and columns.

The document should identify the specific DBMS technology being used to store your application data (PostgreSQL, MySQL, Firebase, etc.)

In the database, we will store password, username, personal information and users’ feedback, which contain binary password hash, strings, integers. For creating the database, we are using PostgreSQL (Version 12.0) [or version 10.0 ?] and might build the application programming interface by node-js. Here are some details:

Username — strings; Password — Binary passwordHash.

Users’ feedback_1 — integers (use star— rating method for recording integer (1 - 5)).

Users’ feedbacl_2 — strings (this part will record some comments)

Personal Information (big part): record the register Date (Date record like football_db)

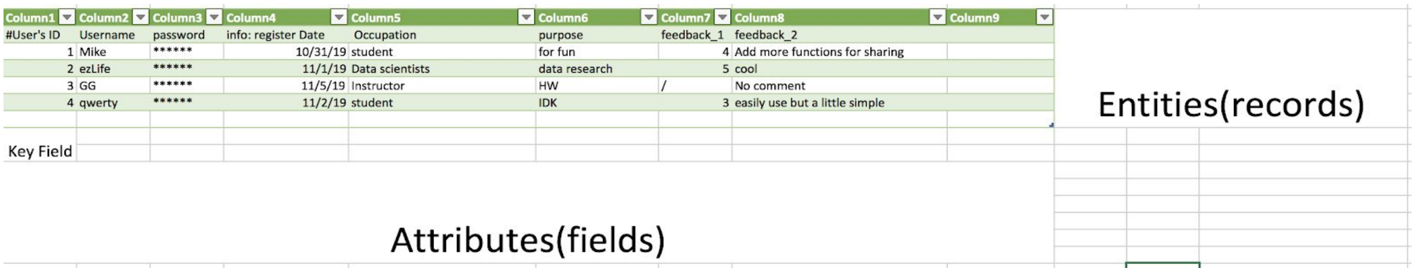
Purpose for using this website: (dropdown button probably gives some choice or string input).

Occupation (dropdown choices or string).

User’s IDs will be useful for storing specific data for users (integer).

Add more possible function later.

General concept table:



Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9
#User's ID	Username	password	info: register Date	Occupation	purpose	feedback_1	feedback_2	
1	Mike	******	10/31/19	student	for fun	4	Add more functions for sharing	
2	ezLife	******	11/1/19	Data scientists	data research	5	cool	
3	GG	******	11/5/19	Instructor	HW	/	No comment	
4	qwerty	******	11/2/19	student	IDK	3	easily use but a little simple	
Key Field								

Entities(records)

Attributes(fields)

Current work: we are working on these problems:

1. We want to add Hash method on the password to make the password part secure.
2. Based on the Front-end and Login page function, there might be more datatype to add this database.
3. Use some functions to collect the data from website pages and store data in the database.
4. About the version, we are currently using postgreSQL 12.0. But we are still trying version 10.0; we will use the better one.

A small example to show the relation between database and Login page: