Legal Lite - The User Agreement Dilemma

Team Crystal
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Team Bio

Matthew Rojas

Brayden Bowman

Keith Landauer

Alex Lasson

Josh Matulenas

Robert Peabody

Muhammad Shahid

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Problem Statement

Terms of Service

Terms of Services are too long (on average 7700+ words for the 10 most popular applications and services[4]) and are written in legal jargon that is difficult to understand.

Problem Characteristics

- **Length of documents and the time it takes to read them**
  - Hypothesized that 25 days would be needed to read every user agreement of every website a consumer has visited in their lifetime[2]
- **Lack of consumers reading before agreeing**
  - According to Business Insider, 97% of younger consumers between the ages of 18-34 will accept conditions without reading them [1]

Problem Characteristics Cont.

- **Legal language obfuscates what the TOS really are**
  - "Choice of Law and Jurisdiction" section
  - Grown more complex to reflect case-law of courts and to cover grounds that lawyers find necessary
- **Broad statements leave interpretation up to users**
  - Terms such as: "partners" and "usage"
  - One-sided examples to sway consumer
- **Difficult to make an informed decision even after reading**
  - Requires reading all ToS of multiple services and comprehending their differences

Example TOS - Netflix Arbitration Clause

7. **Arbitration Agreement**

7.1. You and Netflix agree that any dispute, claim or controversy arising out of or relating in any way to the Netflix service, these Terms of Use and this Arbitration Agreement, shall be determined by binding arbitration or in small claims court. Arbitration is more informal than a lawsuit in court. Arbitration uses a neutral arbitrator instead of a judge or jury, allows for more limited discovery than in court, and is subject to very limited review by courts. Arbitrators can award the same damages and relief that a court can award and nothing in this Arbitration Agreement shall be interpreted as limiting any non-waivable statutory rights. You agree that, by agreeing to these Terms of Use, the U.S. Federal Arbitration Act governs the interpretation and enforcement of this provision, and that you and Netflix are each waiving the right to a trial by jury or to participate in a class action. This arbitration provision shall survive termination of this Agreement and the termination of your Netflix membership.

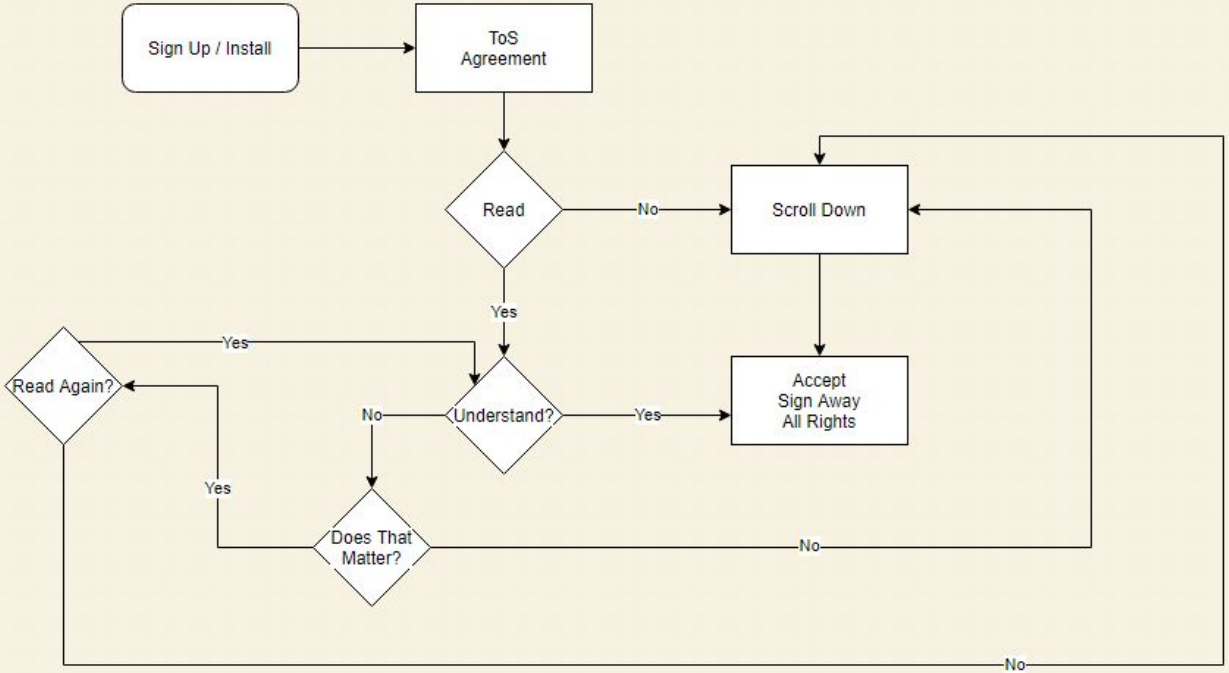
7.2. If you elect to seek arbitration or file a small claim court action, you must first send to Netflix, by certified mail, a written Notice of your claim ("Notice"). The Notice to Netflix must be addressed to: General Counsel, Netflix, Inc., 100 Winchester Circle, Los Gatos, CA 95032-1815 ("Notice Address"). If Netflix initiates arbitration, it will send a written Notice to the email address used for your membership account. A Notice, whether sent by you or by Netflix, must (a) describe the nature and basis of the claim or dispute; and (b) set forth the specific relief sought ("Demand"). If Netflix and you do not reach an agreement to resolve the claim within 30 days after the Notice is received, you or Netflix may commence an arbitration proceeding or file a claim in small claims court.

7.3. You may download or copy a form Notice and a form to initiate arbitration at www.adr.org. If you are required to pay a filing fee, after Netflix receives notice at the Notice Address that you have commenced arbitration, Netflix will reimburse you for your payment of the filing fee, unless your claim is for greater than US$10,000, in which event you will be responsible for filing fees.

Customers and End Users

- Any person / entity interested in making an informed decision with regards to the ToS
- Anyone who may be interested in informing others about information in the ToS
- Users who desire a larger degree of control with regards to their personal data
- Users who want to compare the user agreements and privacy policies of similar services to better discern which service fits their needs

Current Process Flow



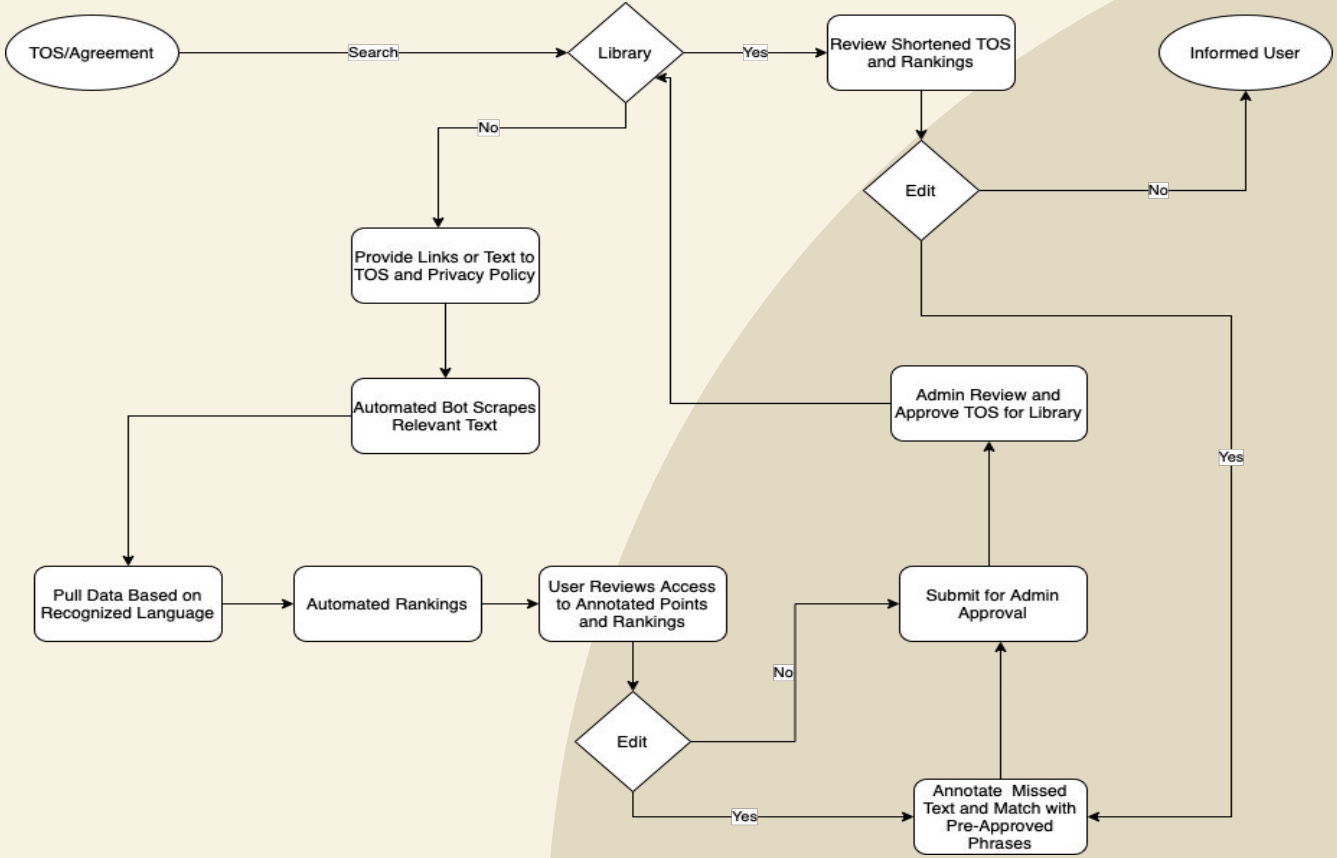
Solution What It Will Do

- Use a single user email to help keep track of all ToS/ToC contracts connected to the account.
- List each application/website's ToS/ToC sections in plain English.
- Allow the community to upload their own findings in the ToS/ToC contracts.
- Rank each service ToS based on several factors and allow for community rankings
- Compare the information in ToS of competitors of similar services
- Actively translate contracts from lawyer jargon to plain english directly from the website/application in question.

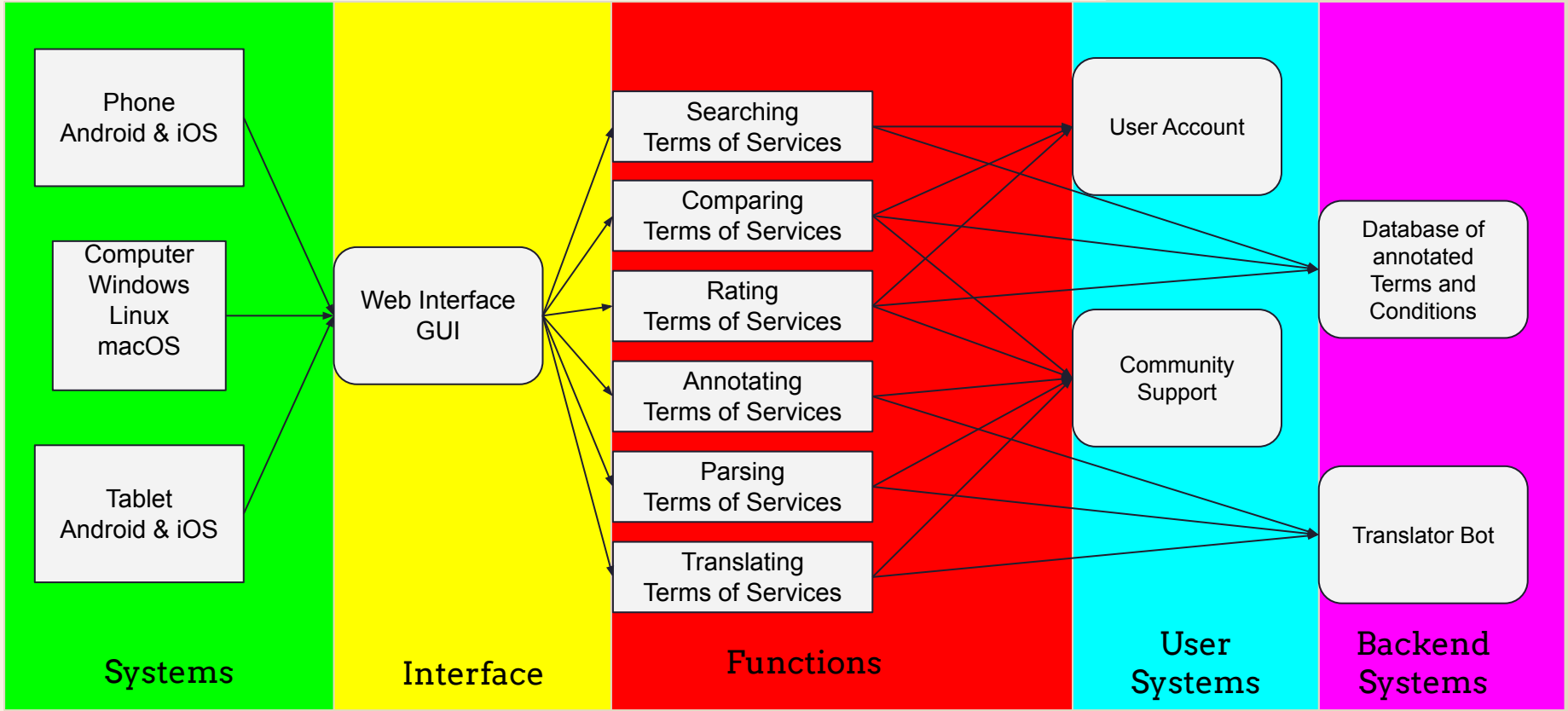
What it Will Not Do

- Automatically accept ToC/ToS contracts
- Alter the contents of any website/application's ToC/ToS
- Replace a lawyer

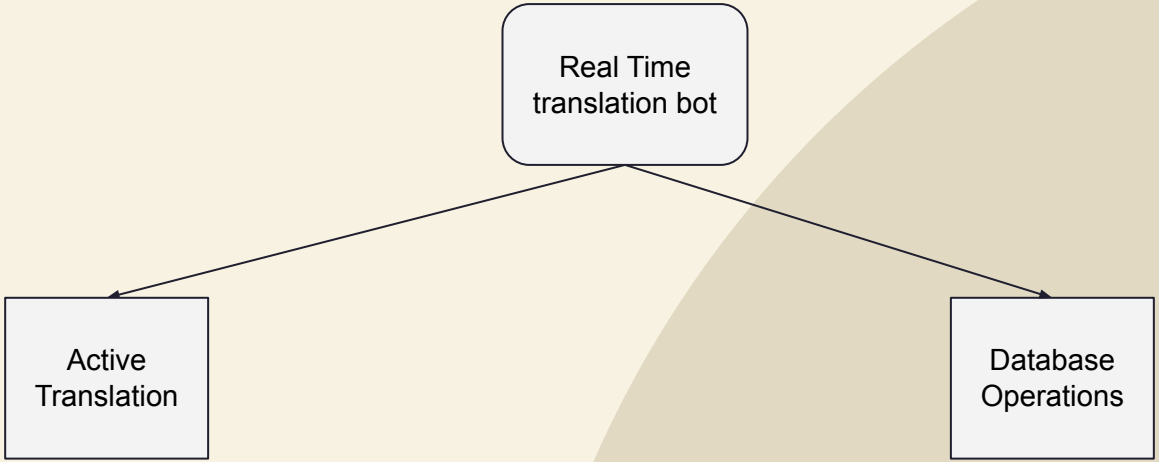
Solution Process Flow



Major Function Component Diagram



BOT Functions



- Provide text to be translated into plain English
- Using NLP Library (SpaCy), detect common phrases and legal terms
- Provide preset dictionary definitions of pulled phrases

- Adds basic translations to database
- Uses database to make comparisons

Competition

ClickWrapped

Scoring System of Top 15 Webpages

TLDRLegal

Side by Side Explanations of Content in TOS

Terms of Service; Didn't Read

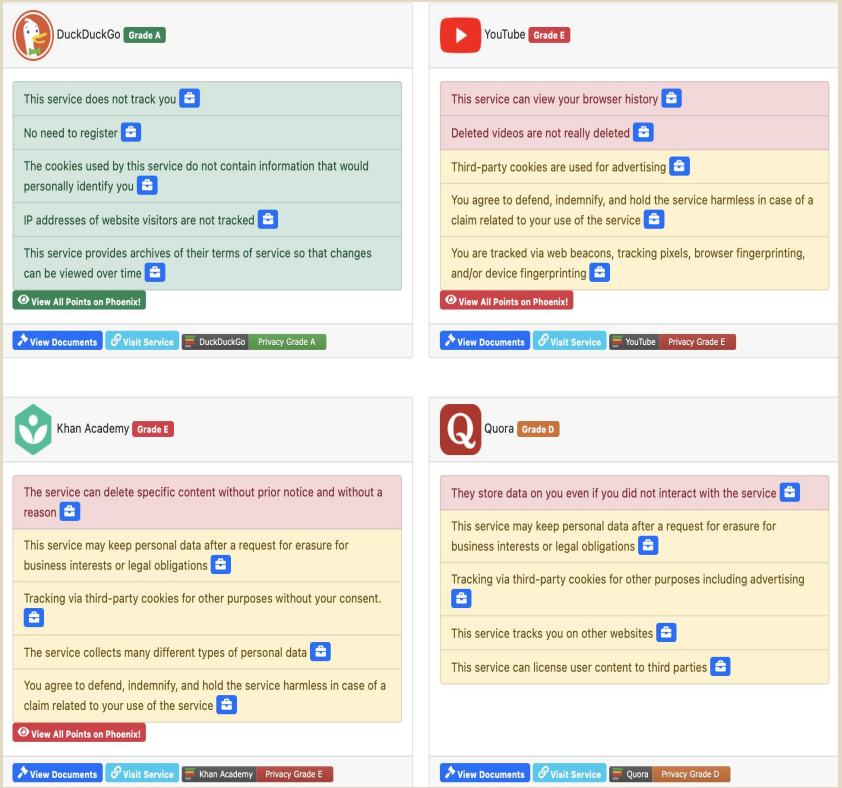
Community Driven TOS Simplifier and Privacy Ranking System

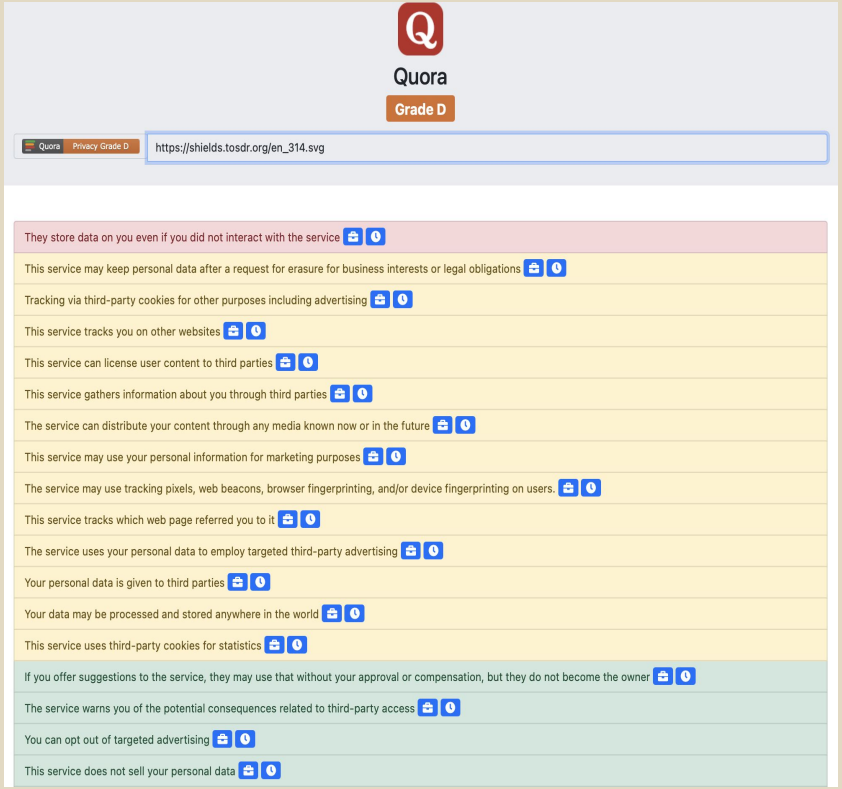
Competition Matrix

Features	Us	TOS;DR	TLDRLegal	ClickWrapped
Simplified Version of Content	X	X	X	X
User Account	X	X	X	
Community Involvement	X	X	X	
Rankings	X	X		X
Privacy Visualizations	X			
Automatic Scraping	X			
Instant Access to Simplified Versions	X			
TOS Comparisons	X			
User Activity Status	X			

Our Plan To Beat The Competition

- Ability to compare TOS and Privacy Content of multiple webpages at the same time
- Notifications on changes/disparities and status of annotations
- Visual diagrams of privacy information
- Automatic Scraping of TOS's that provide an instant simplified version for the user
- User Interface Improvements

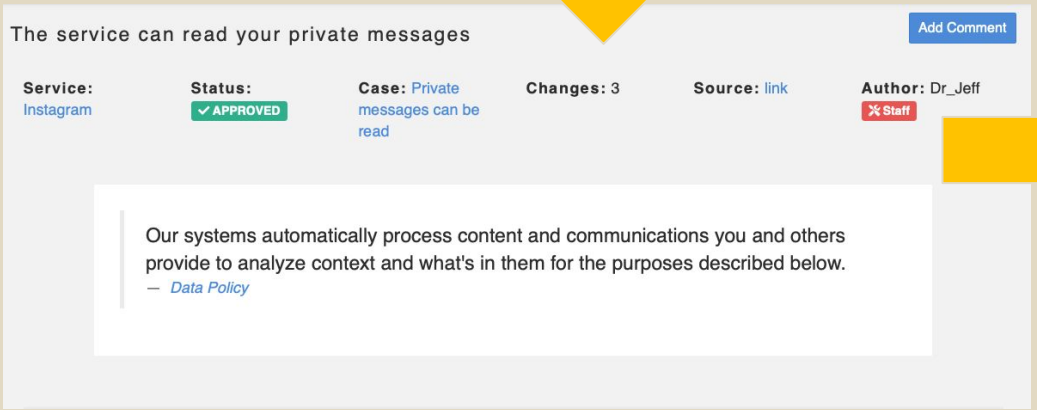




All screenshots retrieved: [6]

Our systems automatically process content and communications you and others provide to analyze context and what's in them for the purposes described below.

Learn more about how you can control who can see the things you share. Data with special protections: You can choose to provide information in your Facebook profile fields or Life Events about your religious views, political views, who you are "interested in," or your health. This and other information (such as racial or ethnic origin, philosophical beliefs or trade union membership) could be subject to special protections under the laws of your country. Networks and connections. We collect information about the people, Pages, accounts,



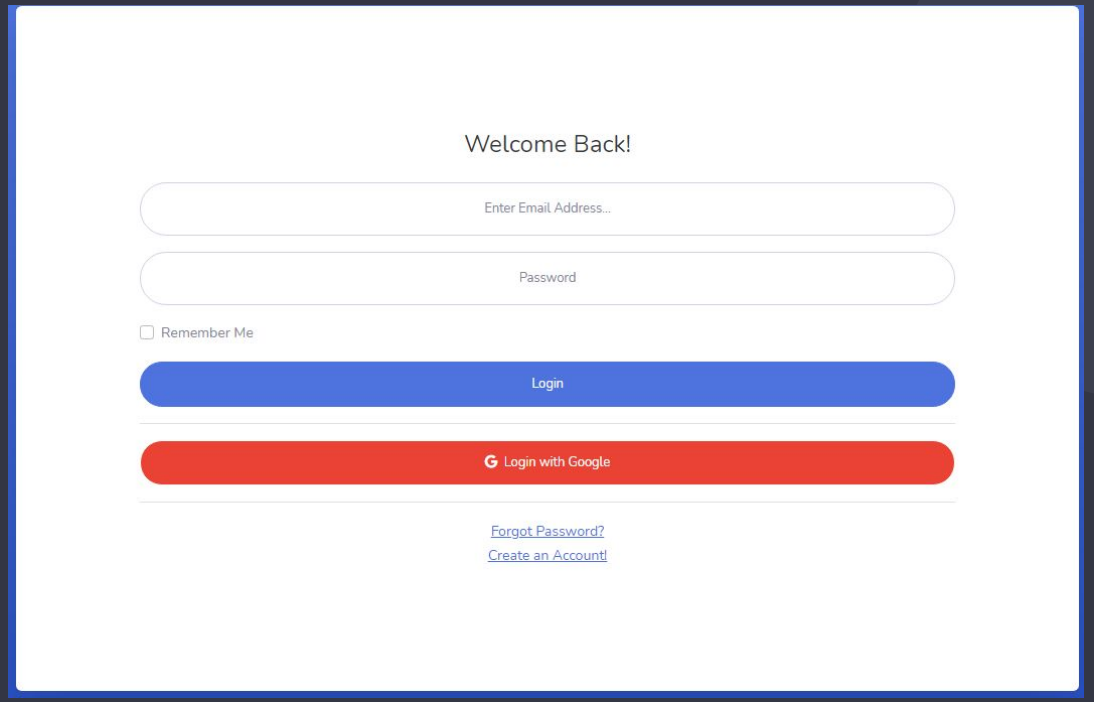
Private messages can be read

The Service is able to access, scan, review or read all user communications, including private messages, which may contain personal or sensitive data.

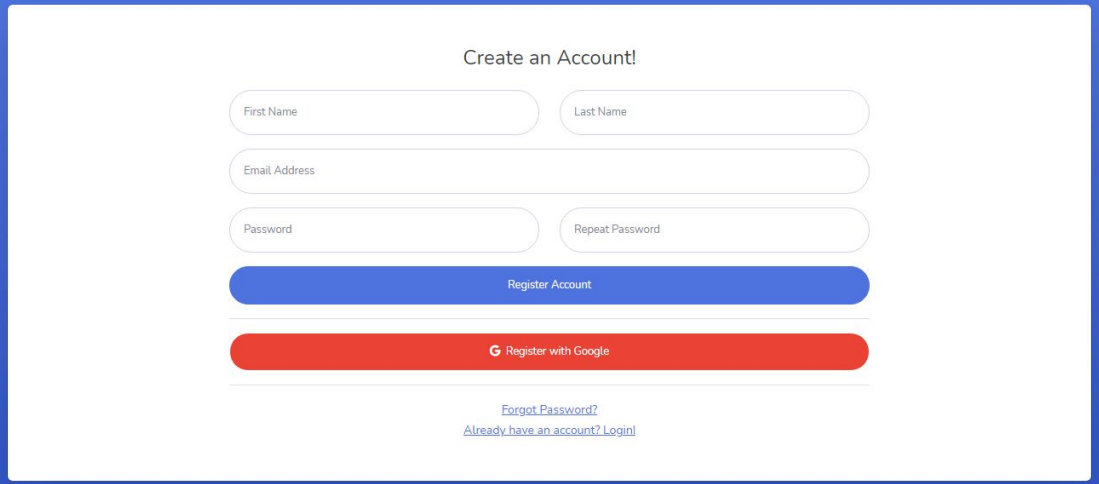
All screenshots retrieved: [6]

We Will Now Transition To Our Mock Ups To Beat our Competition

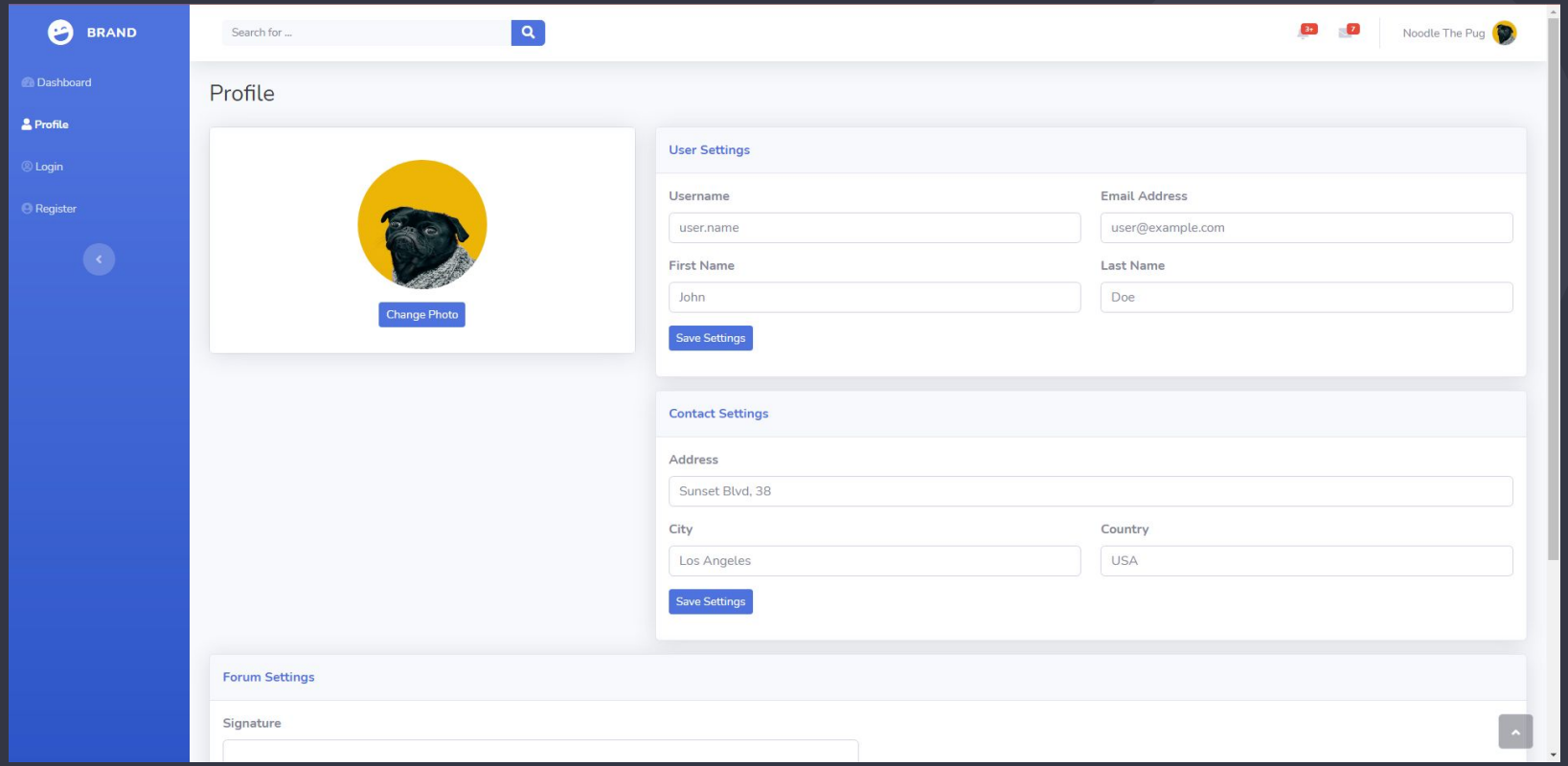
UI mockup - Login Screen



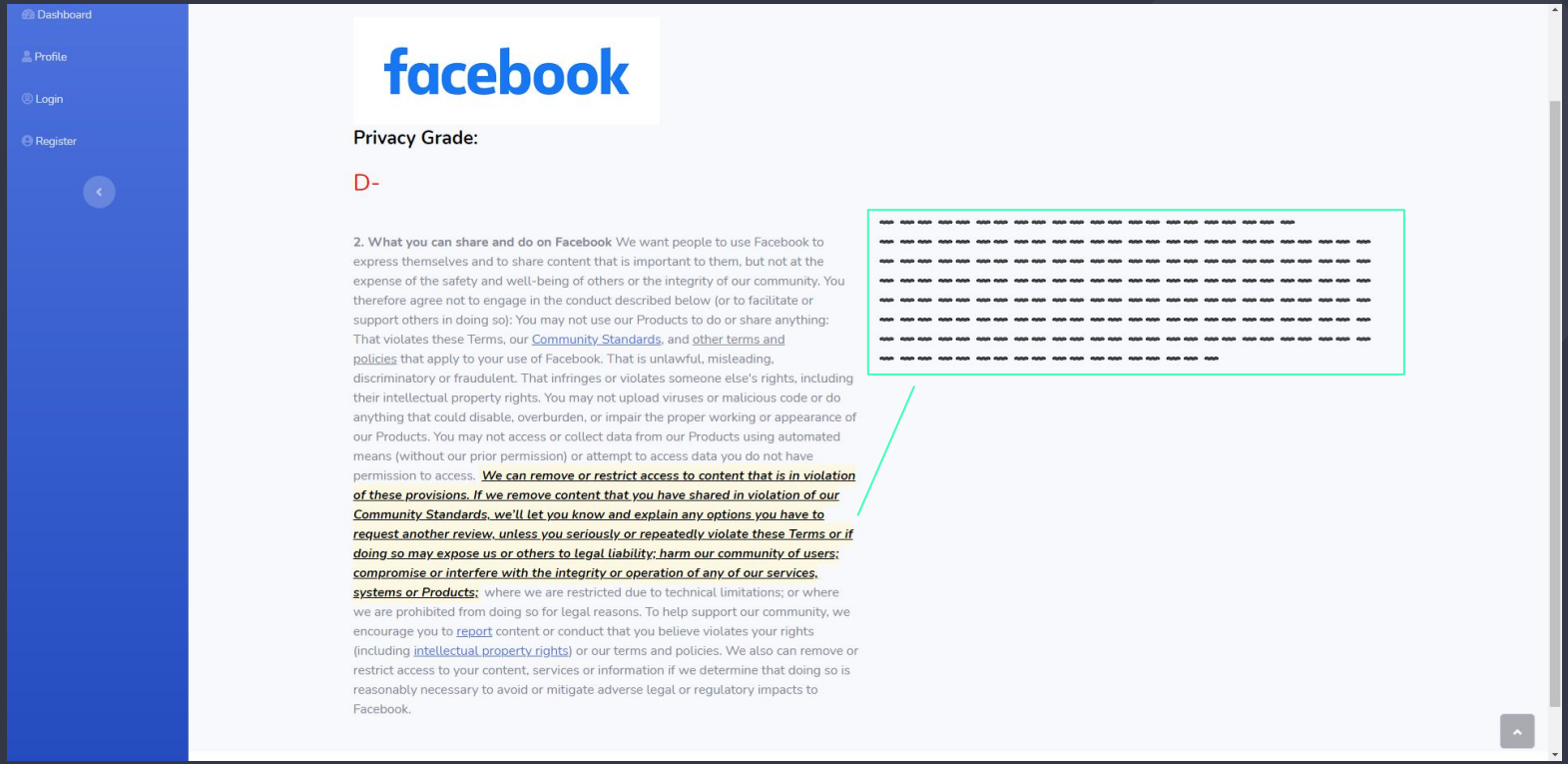
UI mockup - New User



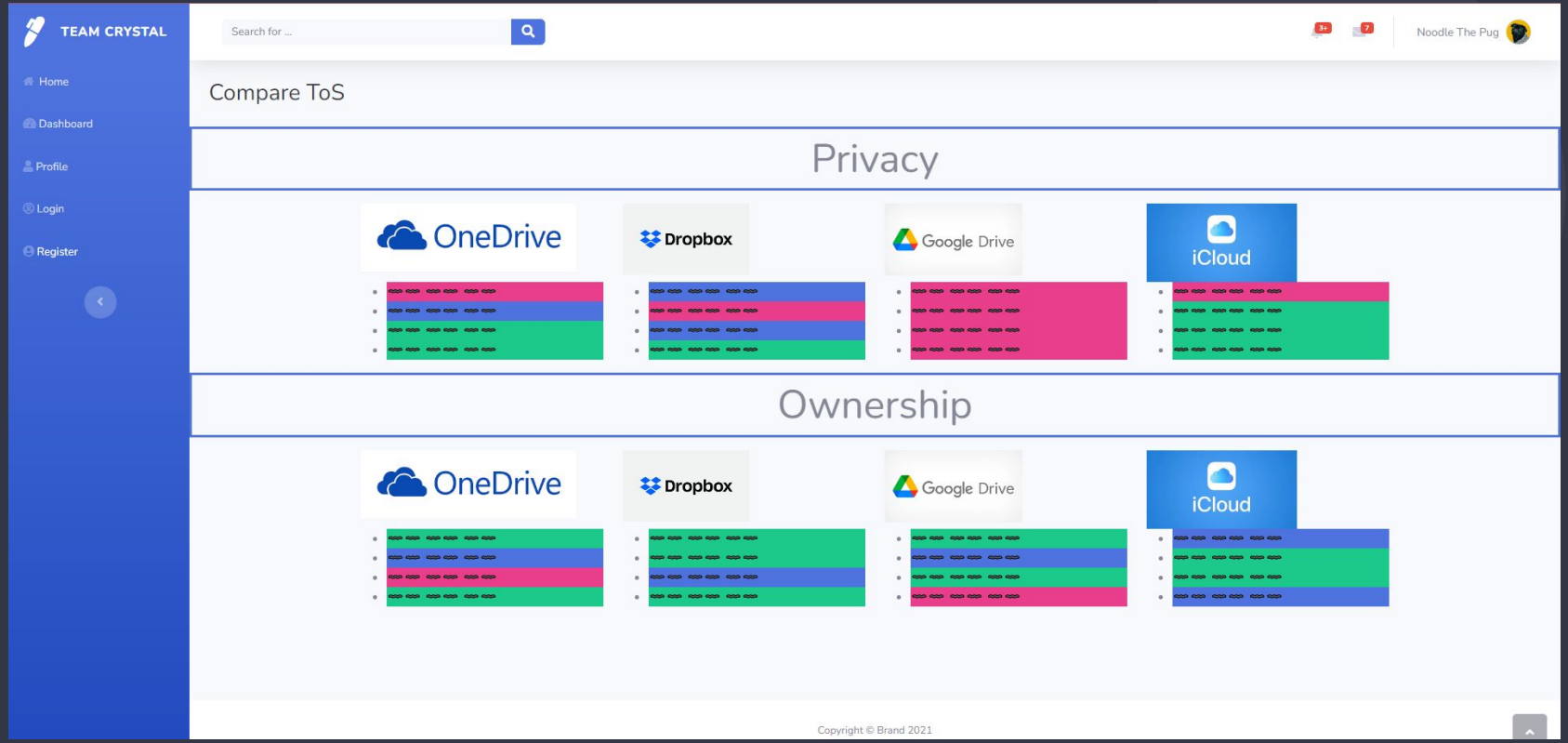
UI mockup - User Profile



UI mockup - Home Screen



UI mockup - Compare Screen



Software Tools - Development

Back End

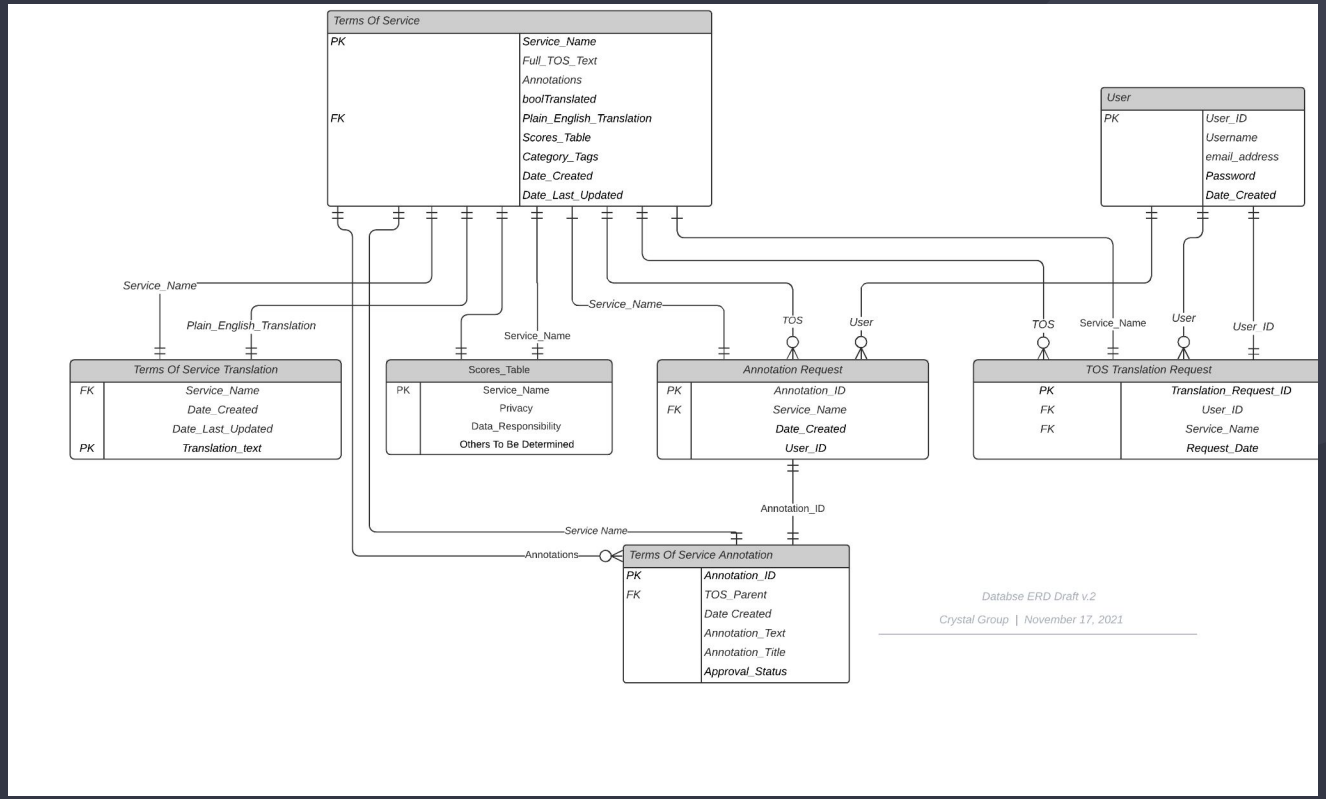
- Language: Python
- Documentation: Pydoc/Sphinx
- Testing Framework: PyTest
- Framework: Django
- External Libraries:
  - Lex NLP
  - Spacy
  - Pandas
  - Beautiful Soup (HTML Parser)
  - MatPlotLib
- Source Code Management: GitHub
- IDE: VSCode
- Database Management: MySQL

Front End

- Django
  - Front end used through templates which include:
    - HTML
    - CSS
    - JavaScript

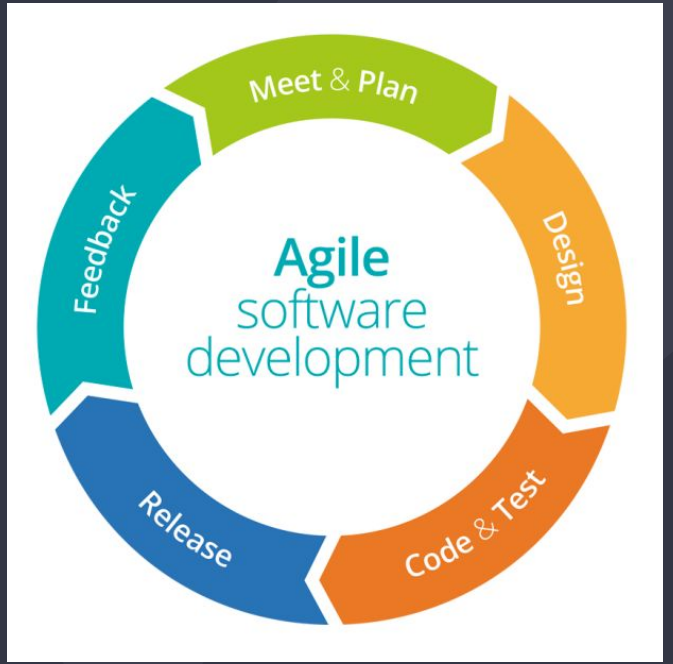
Work Breakdown Structure

ERDs/Schemas



Agile Methodology

- Iterative and Incremental
- Collaborative
- Flexible
- Develop with constructive feedback

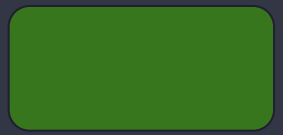


[7] Agile Methodology

Agile Sprints

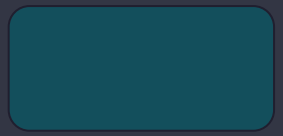
- **Sprint 1** (Week 1-2)
  - Retrieve ToS/ToC
- **Sprint 2** (Week 3-4)
  - Automated Annotations
- **Sprint 3** (Week 5-6)
  - User Annotations
- **Sprint 4** (Week 7-8)
  - Privacy/Aspect
- **Sprint 5** (Week 9-10)
  - ToS out of date
  - Ranking

Map Legend



- Start

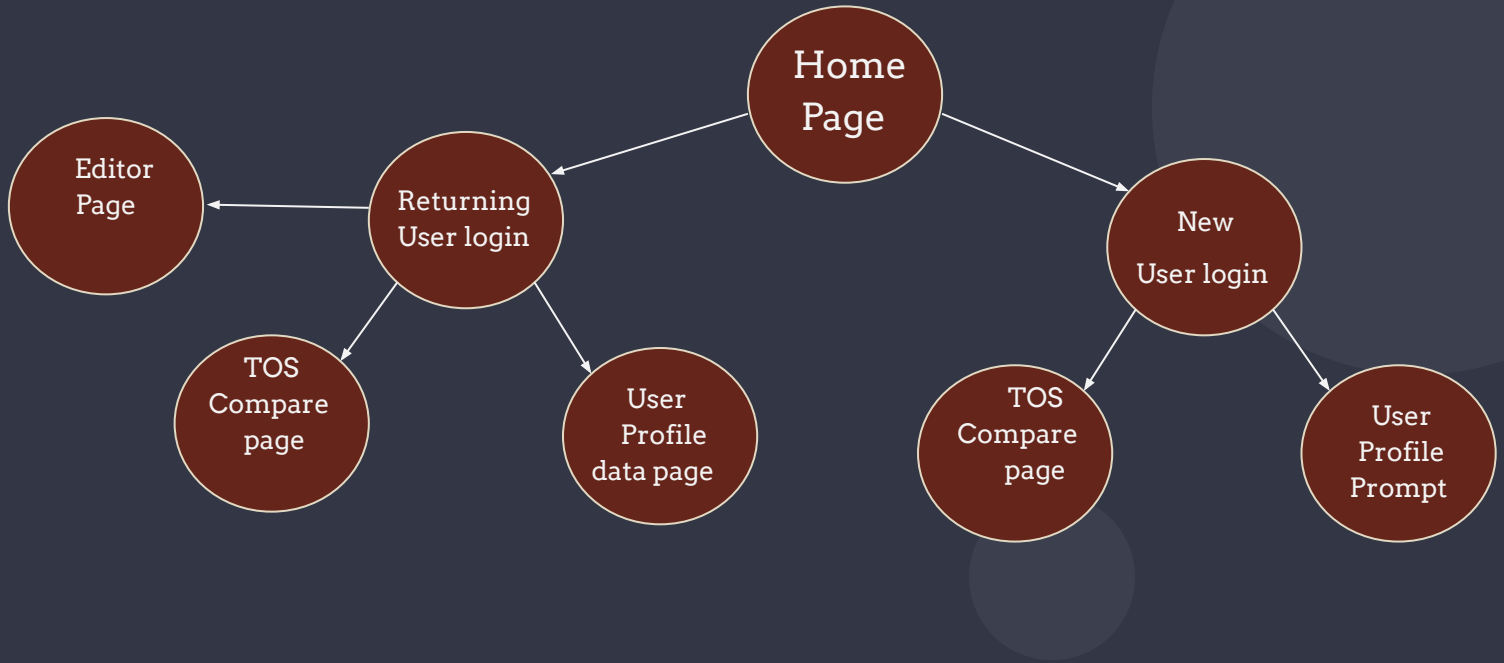
- Decision



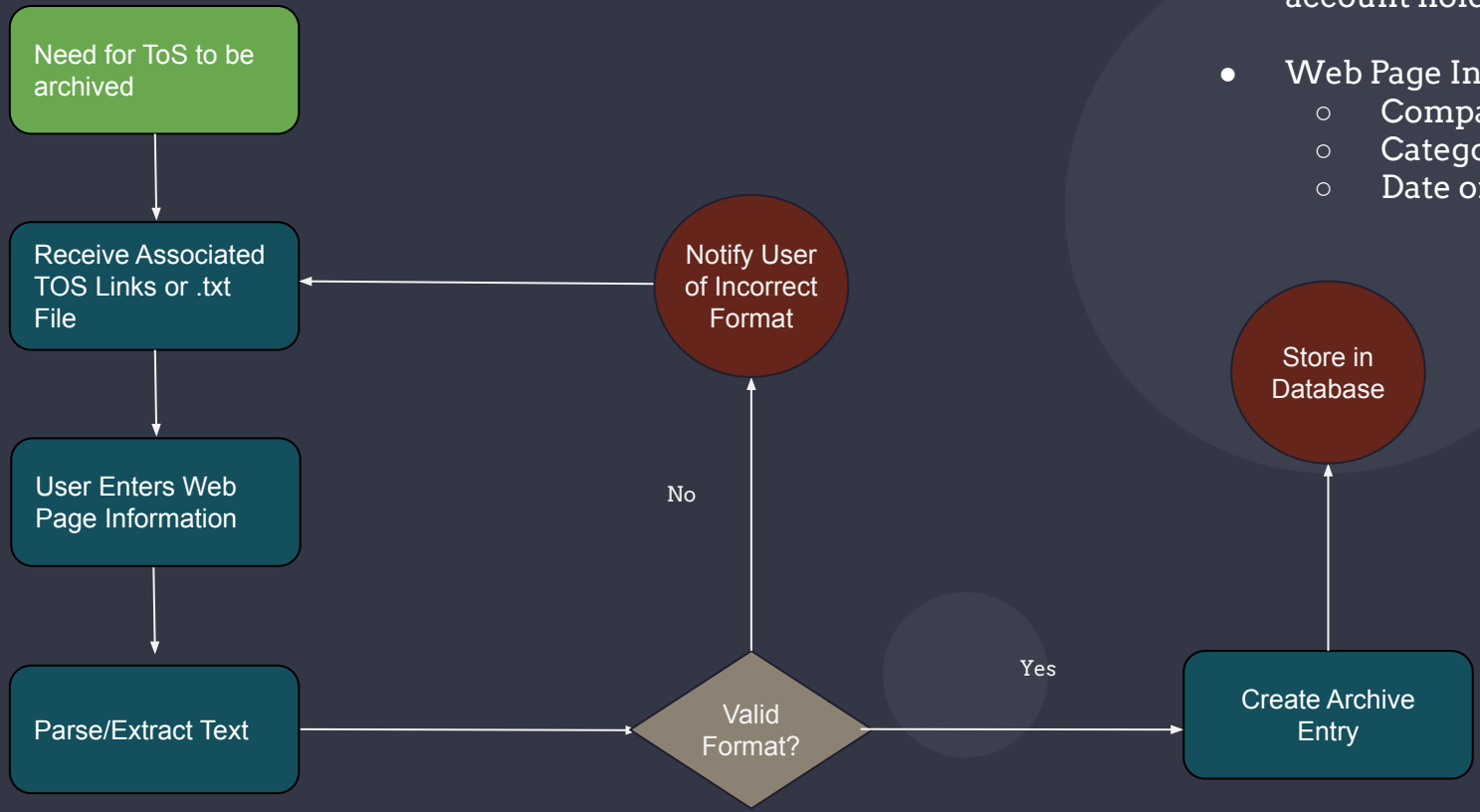
- Action

- Result

Site Maps Overview

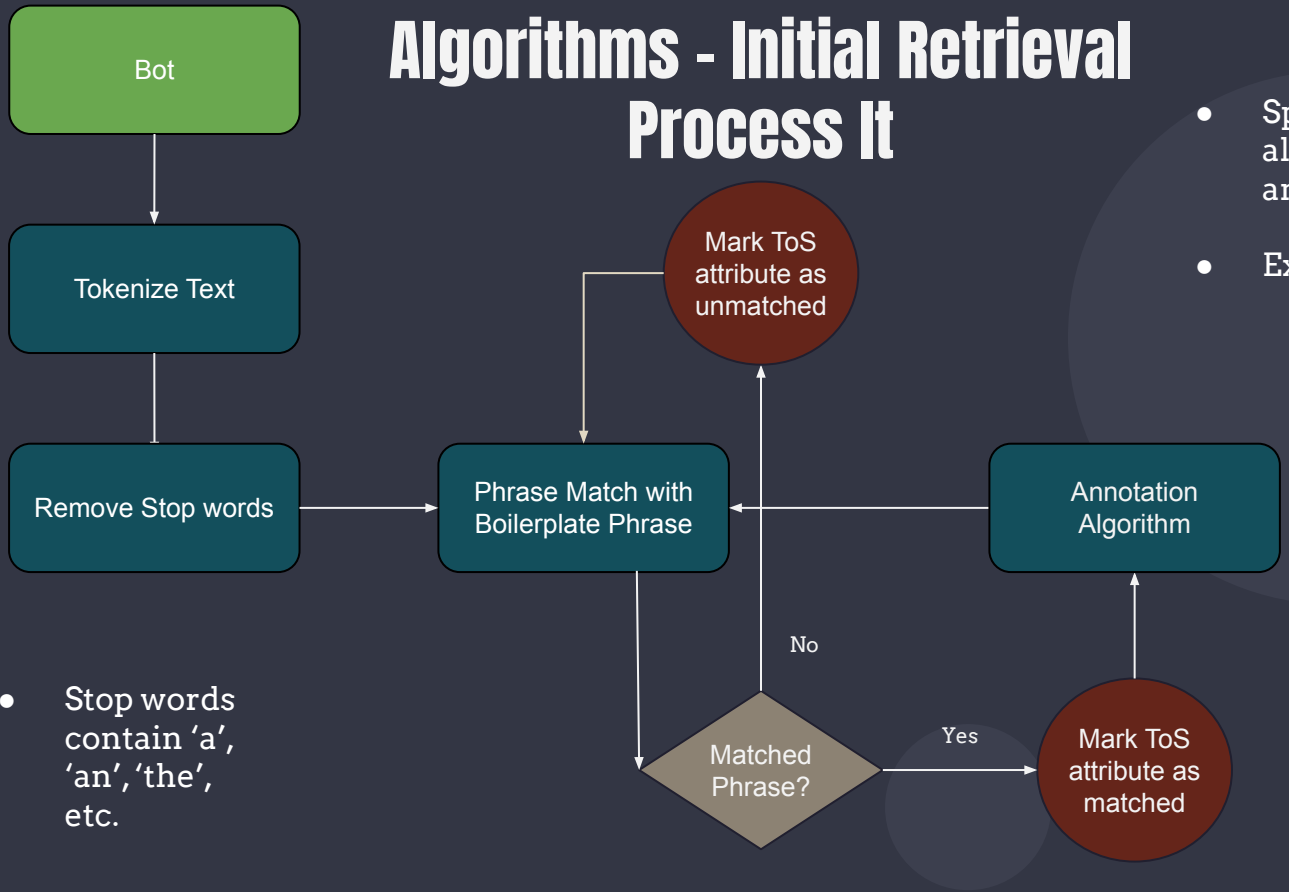


Algorithms - ToS Retrieval



- Uploading new TOS is reserved for registered account holders
- Web Page Info includes:
  - Company Name
  - Category
  - Date of ToS

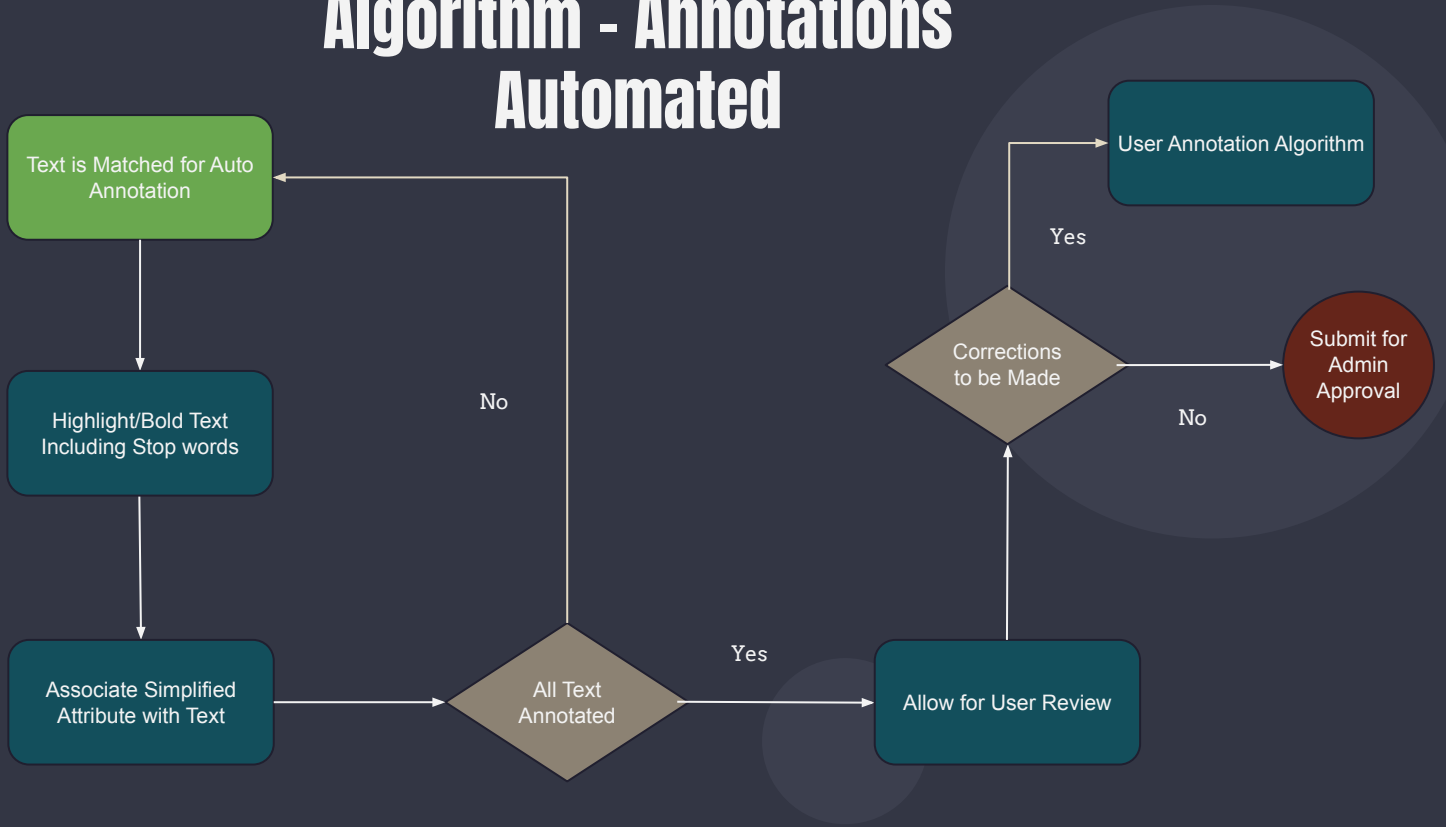
Algorithms - Initial Retrieval Process It



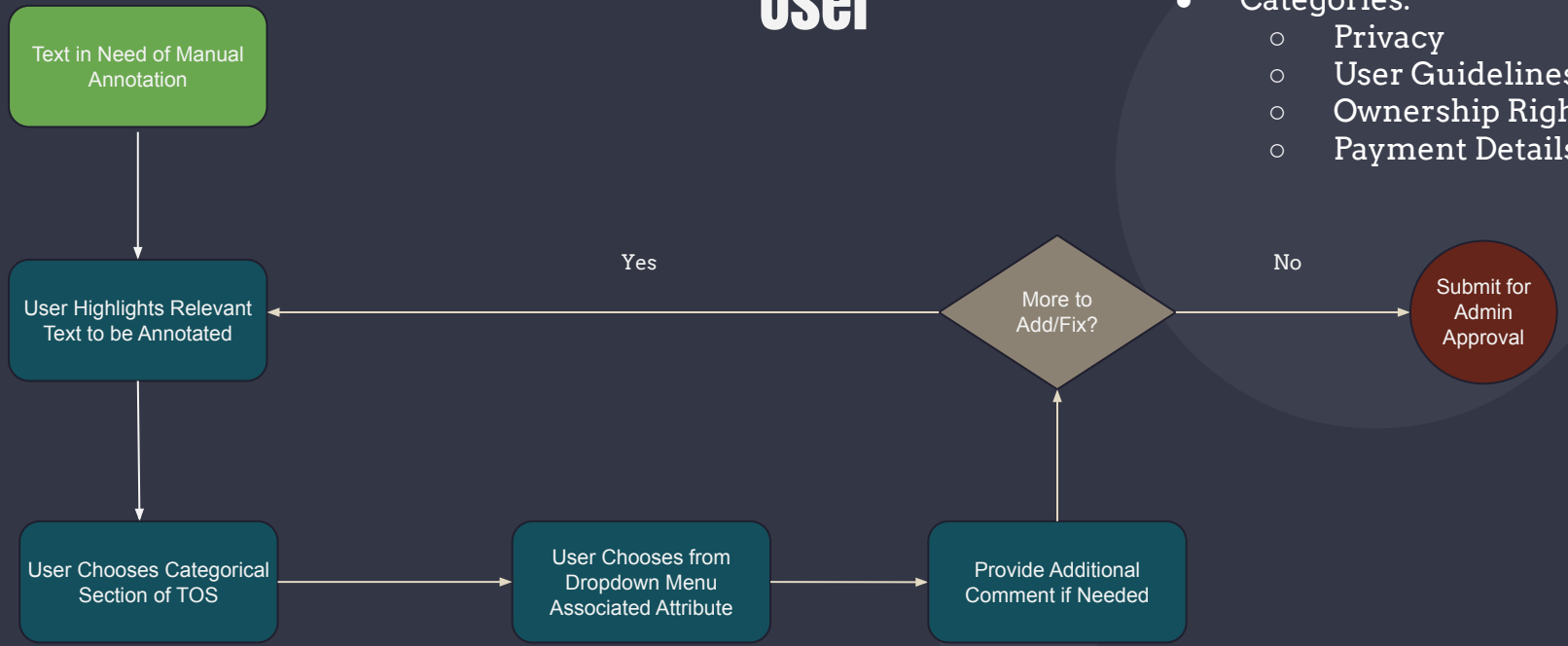
- Stop words contain ‘a’, ‘an’, ‘the’, etc.

- Spacy NLP Library allows for tokenization and phrase matching
- Example:
  - “You retain ownership” and “not claim ownership”
  - Marks the TOS attribute of retaining ownership rights to all content you post using provided service

Algorithm - Annotations Automated

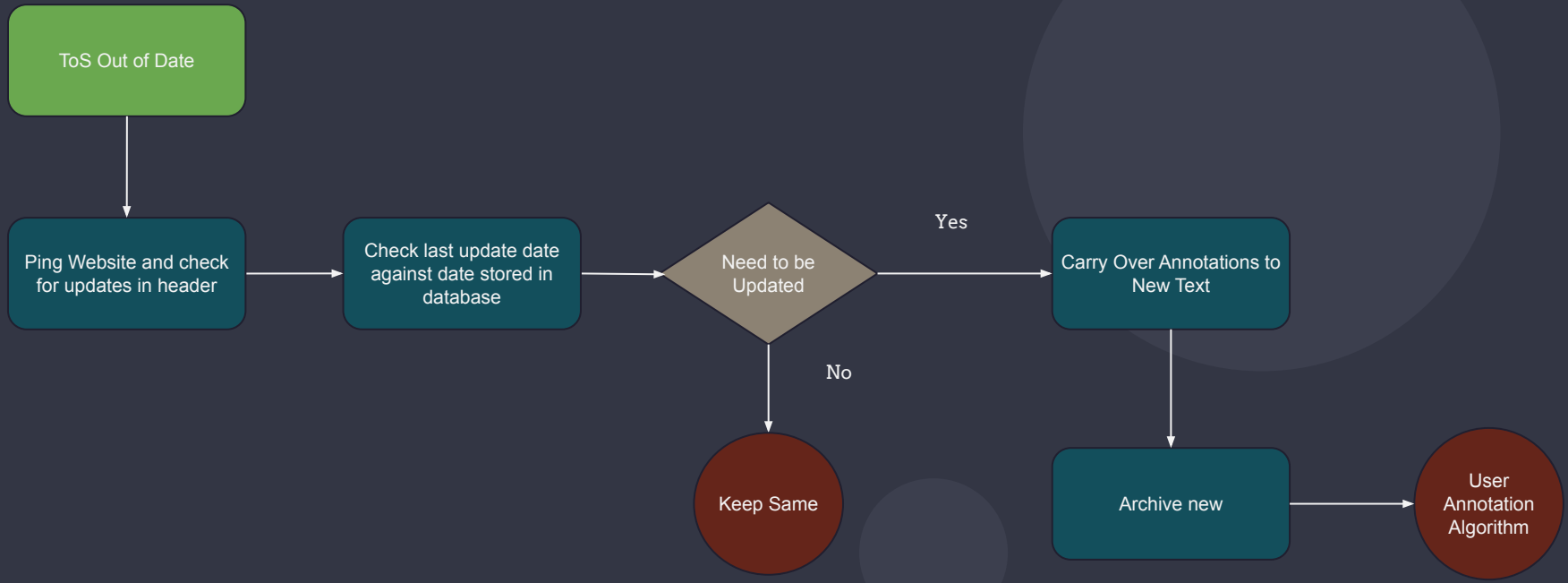


Algorithm - Annotations User

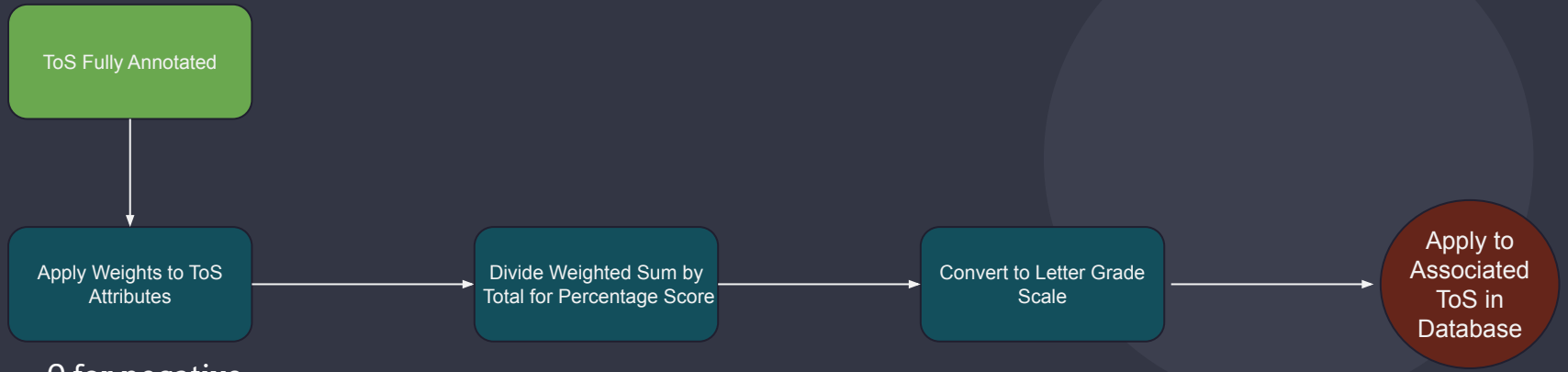


- Categories:
  - Privacy
  - User Guidelines
  - Ownership Rights
  - Payment Details

Algorithm - Out of Date

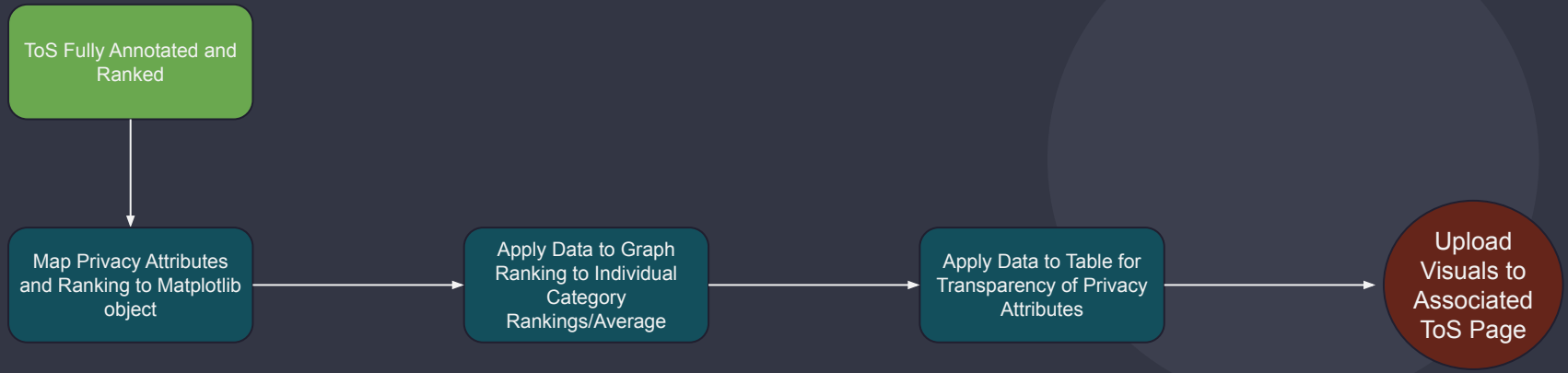


Algorithm - Ranking



- 0 for negative attribute, 1 for positive attribute
- Information collected holds less weight than information shared with third party users
- Neutral - no weight Applied, having to be of certain age for a service

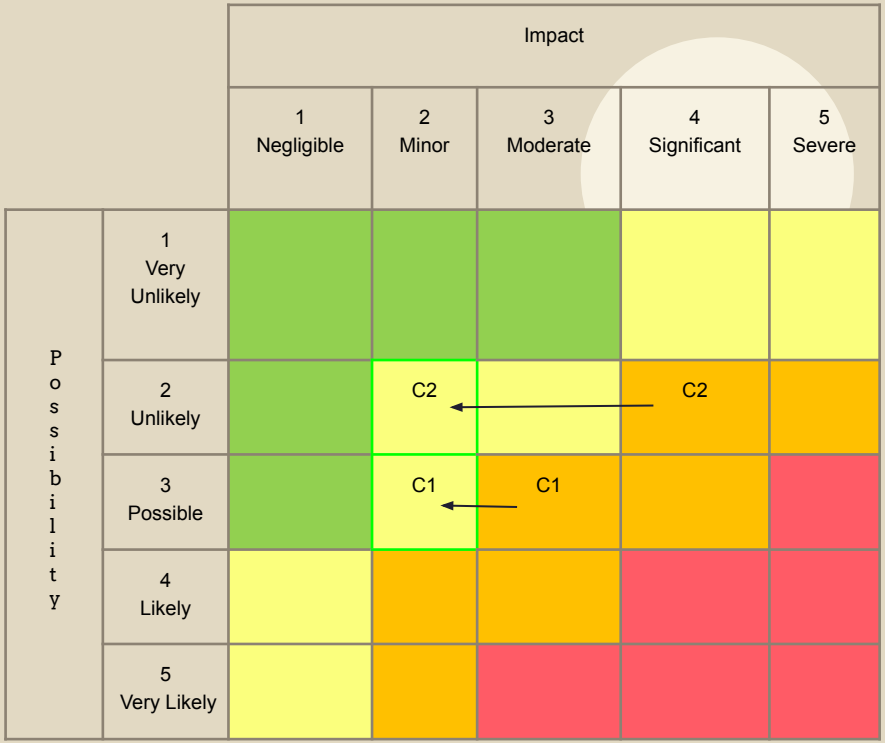
Algorithm- Privacy Visuals



Customer Risks

Risks:
C1: User needs to view the most up to date user agreements
C2: Making decisions based off of inaccurate translation of user agreement

Mitigations:
C1: User can visit the company's website to view the most recent TOS
C2: Users can decide to get professional legal help



Technical Risks

Risks:

T1: Storing other companies' user agreement may not be allowed

T2: An update to a user agreement would require immediate update to annotations

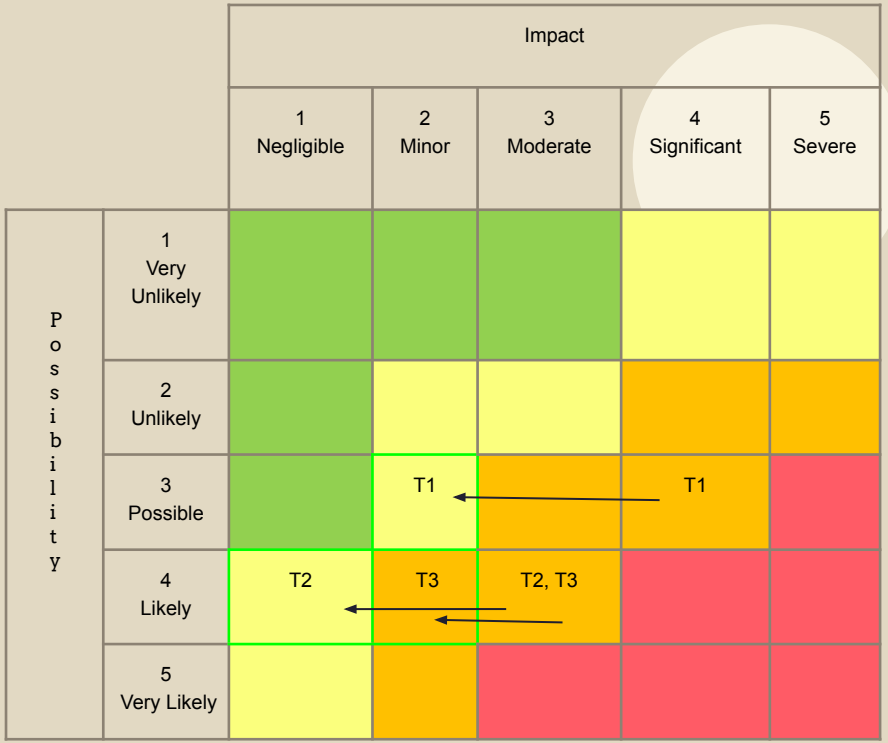
T3: Each annotation of a user agreement would need to be accurate

Mitigations:

T1: State where the TOS can be found and which section each annotation refers to

T2: Update annotations and update the user that changes have been made

T3: We can get help from a professional to create annotations



Security Risks

Risks:

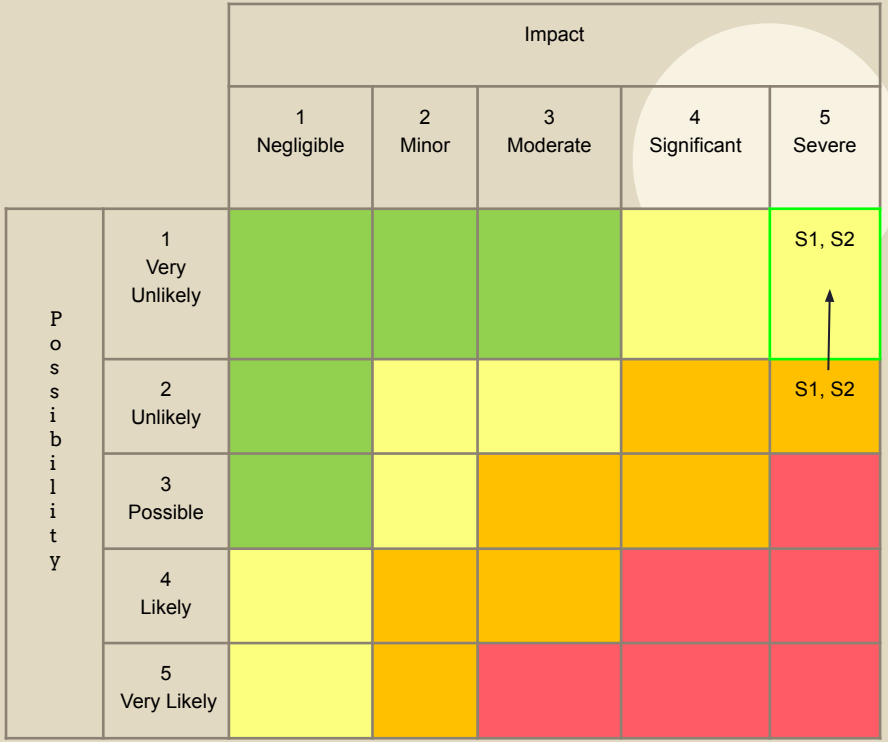
S1: Our database containing our annotations, companies' TOS, and other sensitive data may be breached (SQL injection)

S2: An adversary may gain unauthorized access to our users' accounts

Mitigations:

S1: Implement techniques such as parameterized statements

S2: Use encryption techniques that are inline with the industry's best practices



Legal Risks

Risks:

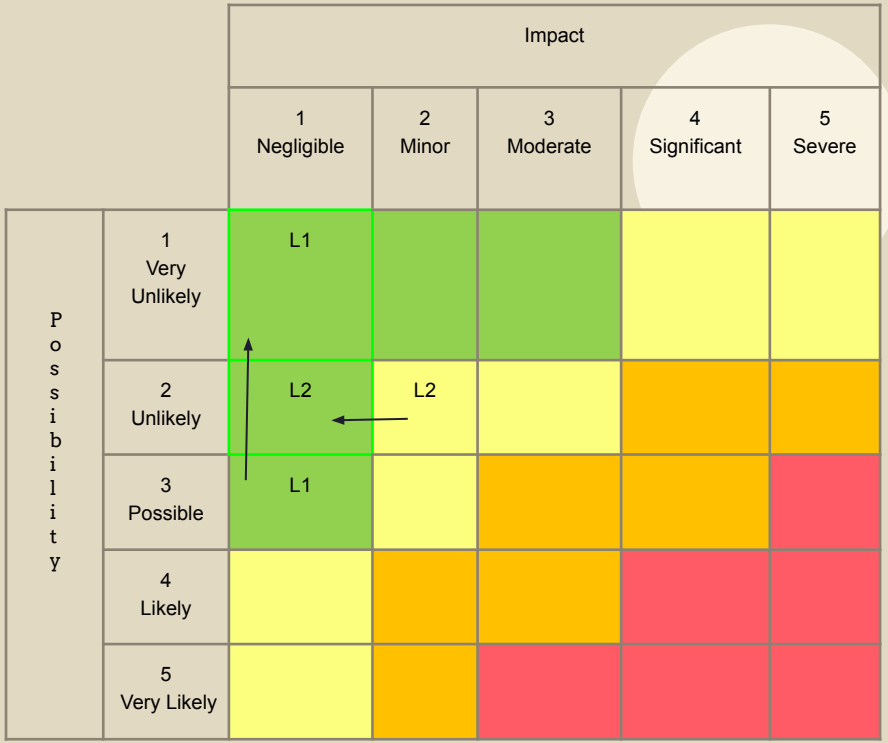
L1: Customer may use our translation of TOS to make a decision and try to hold us accountable if anything goes wrong

L2: Companies may sue because we are taking their TOS and storing it in our database

Mitigations:

L1: Clearly state that our translation of TOS is not to serve as legal advice

L2: Reference the TOS and state where the user can find the TOS and the section the annotations refer to



Conclusion

There is a sizeable lack of transparency of what the true relationship is between companies and their customers. Currently, it just isn't feasible for the average consumer to make a legally binding decision without spending a large amount of time and energy to do so.

A solution is necessary to present these confusing documents in a clear and concise manner:

- Privacy rankings and visualizations
- Comparisons between similar services
- Database of shortened ToS and ability for quick audit of unknown services

A solution containing these features will make for an informed customer and give the power back to the users.

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Glossary

ToS - Terms of Service

T&C - Terms and Conditions

ToC - Terms and Conditions

NLP - Natural Language Processing

Glossary Cont'd

Annotation - Simplified, plain English summary of a portion of the original TOS.

Parsing - Analyzing a piece of the TOS into parts, and describing their syntactic roles.

Translation - Parsing an original, unmodified TOS into plain English Annotations.

Appendices

Statistics that highlight issues with User Agreements:

- Overall, 91% willingly accepts legal terms and conditions without reading
- More than 80% of consumers believe that companies use their personal data
- 78% believe that their personal data is shared with third parties
- 98% of participants in a mock study agreed to terms that highlighted that any data would be shared with NSA

Lengths of Popular Applications/Websites TOS

- Instagram: 2451 words
- Netflix: 2628 words
- YouTube: 3308 words
- Twitter: 5633 words
- TikTok: 7459 words
- Microsoft: 15260 words

Appendices

Guests

- As a guest, I would like to view abbreviated user agreements.
  - As a guest, I would like visual diagrams of privacy information.
  - As a guest, I would like to view annotated information as well as unannotated information.
  - As a guest, I would like to view abbreviated definitions based on sections they pertain to.
  - As a guest, I would like to view an automated ranking of the overall TOS.
  - As a guest, I would like to see when the TOS was uploaded.
  - As a guest, I would like to see when annotations were added to the abbreviated TOS.
- As a guest, I would like to search for specific TOS in the archive.
  - As a guest, I would like to know if the TOS is not in the archive.
  - As a guest, I would like to search based on the type of service such as social media or streaming services.
  - As a guest, I would like to
- As a guest, I would like to compare similar services' user agreements.
  - As a guest, I would like to select the category of user agreements to view.
  - As a guest, I would like to view the differences between services in a table.
  - As a guest, I would like to view the rankings of services in the category in a graph.
  - As a guest, I would like to order similar services based on ranking or name.
- As a guest, I would like the option to become a registered account holder.
  - As a guest, I would like to create a unique username for my account.
  - As a guest, I would like my username to be linked to an email address.
  - As a guest, I would like my account to require a secure password (i.e. at least 1 capital, at least 1 symbol)

Appendices

Community Member:

- As a community member, I would like to have all rights as a guest would.
- As a community member, I would like to annotate a TOS.
  - As a community member, I would like to highlight phrases that fit the criteria for an accepted abbreviated definition.
  - As a community member, I would like to select the section the annotation should belong to.
  - As a community member, I would like to select the abbreviated definition that fits the phrase.
  - As a community member, I would like to add a comment to my suggested annotation.
  - As a community member, I would like to comment on approved annotations suggesting improvements.
  - As a community member, I would like to insert a comment for all annotations being made.
  - As a community member, I would like to submit annotations for admin approval.
  - As a community member, I would like to flag if a ToS needs to be updated.

Appendices

Community Member:

- As a community member, I would like to add a new ToS.
  - As a community member, I would like to input the name of the service to be added.
  - As a community member, I would like to input the link or text of the TOS and privacy information.
  - As a community member, I would like to provide the category for which the ToS fits.
  - As a community member, I would like the bot to pull information from the TOS content.
  - As a community member, I would like to know if the TOS content is not recognized by the bot.
  - As a community member, I would like to view the auto-annotated information.
  - As a community member, I would like to receive visual diagrams and rankings automatically.
  - As a community member, I would like to insert annotations and corrections for the rest of the text and add comments as needed.
  - As a community member, I would like to submit the new service for final admin approval.
  - As a community member, I would like to be notified of approval or rejection of TOS in the database.
  - As a community member, I would like to receive credit for the new submission with a username identifier being added to the final product.
- As a community member, I would like to provide rankings for the ToS.
  - As a community member, I would like to provide a letter grade ranking for the privacy section of the ToS.
  - As a community member, I would like to provide a letter grade ranking for the ownership rights section of the ToS.

Appendices

Admin:

- As admin, I would like to have access to all rights as a community member would.
- As admin, I would like to approve a new ToS to be added.
  - As admin, I would like to be notified if a new ToS is ready to be viewed.
  - As admin, I would like to view annotations made by the bot.
  - As admin, I would like to view annotations made by the community member.
  - As admin, I would like to view the associated comments to the community member annotation.
  - As admin, I would like to edit ToS information as needed (ex. Service Name, Category)
  - As admin, I would like to accept or reject individual annotations.
  - As admin, I would like to approve or deny the ToS to be added to the library.
- As admin, I would like to approve of individual annotations.
  - As admin, I would like to be notified if an annotation is ready to be viewed.
  - As admin, I would like to view the annotation and associated comment.
  - As admin, I would like to accept or reject individual annotations.
  - As admin, I would like to provide an explanation for rejection.
- As admin, I would like to update an out of date ToS.
  - As admin, I would like to be notified of an out of date ToS (i.e. community member flag or external website flag)
  - As admin, I would like to upload the new ToS information.
  - As admin, I would like to view the differences between the old and new ToS.
  - As admin, I would like to transfer annotations over.
  - As admin, I would like to run the bot on the new text.
  - As admin, I would like to provide new annotations as needed.
  - As admin, I would like to approve the updated ToS to replace the old ToS in the library..

RWP/Prototype Table

Functionality/Feature	Real World Product	Prototype
Retrieve ToS/ToC		
Automated Annotations		
Site User Annotations		
Website/ Service Privacy Comparisons		
Website/Service Ranking		
Retrieve/Update Out of Date ToS/ToC		

THANKS!

Do you have any questions?

bbowm002@odu.edu
kland007@odu.edu
alass006@odu.edu
jmatu002@odu.edu
rpeab001@odu.edu
mroja001@odu.edu
ashah002@odu.edu

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