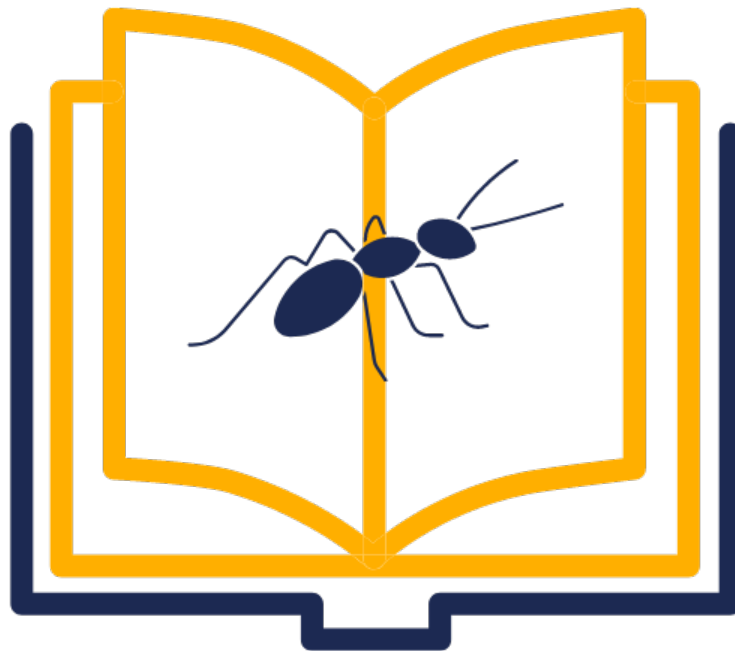


**DEPARTMENT OF COMPUTER SCIENCE
NORTH CAROLINA A&T STATE UNIVERSITY**

SYSTEM REQUIREMENTS SPECIFICATION
COMP 496: SENIOR DESIGN II
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**GROUP 3
ANNOTEXT**

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REVISION HISTORY

Revision	Date	Author(s)	Description
0.1	10.01.2020	MN, TB, PCJ	Document Creation and DB Save
0.2	10.05.2020	MN, TB, PCJ	complete draft
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1.0	10.20.2015	MN, TB	Display Functionality
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1 PRODUCT CONCEPT

Often times when students are searching for cost-effective solutions to buying textbooks for class they look towards used books. These books sometimes contain notes from other students who previously used it. Since we're in a more digital age and most textbooks are available in a PDF format, we figured it would benefit students to have this available in this format as well. We're proposing a web application that allows students to annotate free pdfs of textbooks in a collaborative environment allowing classmates and peers to view, interact, and learn with other students using Annotext.

1.1 PURPOSE AND USE

Annotext will be used mainly by students to collaboratively learn together remotely. It will allow users to add annotations including but not limited to: notes, hints, and personal perspectives, to textbook PDFs precedence in order to make learning the material easier and more relatable to the user.

1.2 INTENDED AUDIENCE

This product is intended for students in college and high school.

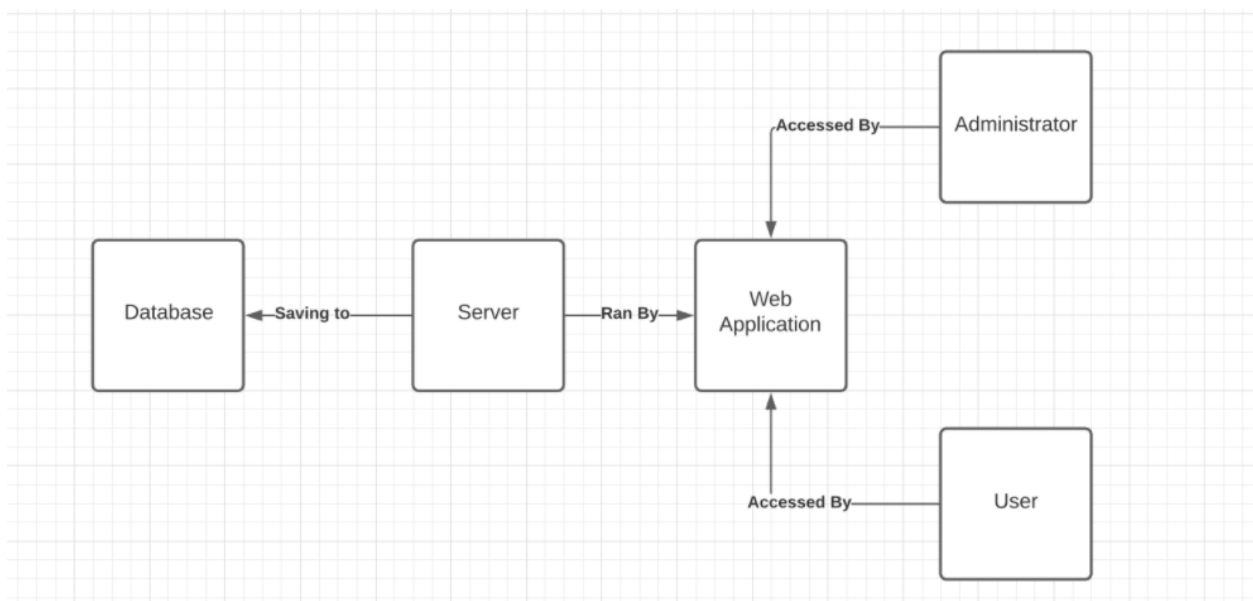


Figure 1: Annotext conceptual drawing

2 PRODUCT DESCRIPTION

This section will inform the reader of how Annotext will operate and function. This information is from the perspective of end users, maintainers and administrators. The key features and functions found in the product, as well as critical user interactions and user interfaces are described in detail.

2.1 FEATURES & FUNCTIONS

Annotext is a web based application that allows users to access PDF files through our system and annotate. These annotations will consist of highlights, footnotes, and summaries. Annotext uses a multi-threaded server connection process to allow for many users to constantly connect to the website and use the features that we offer. Each group and/or individual will be given a specific port on our domain to work from while they are annotating the PDF files they choose. When a user connects they will be given a "pane" to work from. In this pane they will be able to annotate the document. Other users will not be able to edit another users pane, unless given access by an administrator. Users are permitted to see the annotation of another user.

2.2 EXTERNAL INPUTS & OUTPUTS

Our product has four major inputs:

1. Administrator PDF file
2. Account holder individual annotations
3. Up votes for specific annotations from account holders
4. Down votes for specific annotations from account holders

Our product will have two major outputs:

1. Administrator PDF file
2. Group collective annotations per PDF sorted by relevance.

2.3 PRODUCT INTERFACES

Our end user will be able to log into our website and scroll through PDFs separated by topic, after clicking on a PDF an account holder will have the option to enter and annotation for the page they are viewing. annotations are logged with account username, section referenced, and voter count. when viewing a page the user can scroll through previous annotation by through a side tab. These annotations will be ordered by relevance based on other users using the up and down voting mechanic much like the platform reddit.

3 CUSTOMER REQUIREMENTS

Users are looking for a product where they can digitally do what they're able to do physically with their textbooks. We will provide an interactive and collaborative environment where students will be able to annotate, "highlight" sections by toggling between portions of the text and collaborating with others by commenting on other annotations.

3.1 ACCOUNT CREATION

3.1.1 DESCRIPTION

Users will be required to create accounts in order to access the product. This is necessary to track users and collect qualitative and quantitative data in order for product improvement.

3.1.2 SOURCE

Tiara Bell

3.1.3 CONSTRAINTS

Ethical, in that we make sure to inform our users about the collection and use of their data.

3.1.4 STANDARDS

N/A

3.1.5 PRIORITY

Critical

3.2 MAKE AND POST ANNOTATIONS

3.2.1 DESCRIPTION

Users should be able to type textual annotations to a pre-existing digital textbook document and post them for public viewing.

3.2.2 SOURCE

Team

3.2.3 CONSTRAINTS

Sustainability, we need to be able to continuously add new annotations to the database, we may run into storage problems.

3.2.4 STANDARDS

N/A

3.2.5 PRIORITY

Critical

3.3 COMMENT ON OTHER ANNOTATIONS

3.3.1 DESCRIPTION

Users should be able to comment on other users annotations in order to promote further collaboration within the environment.

3.3.2 SOURCE

Patrick Crump Jr.

3.3.3 CONSTRAINTS

Ethical, we have to monitor all posted content so that it meets the ethical guidelines we set.

3.3.4 STANDARDS

N/A

3.3.5 PRIORITY

Moderate

3.4 TOGGLE

3.4.1 DESCRIPTION

Users should be able switch between a mode with annotations visible and not visible. This lets users view a plain pdf and have the option of having the annotations in their view or not. This is one thing users would not be able to do with physical annotated textbooks.

3.4.2 SOURCE

Team

3.4.3 CONSTRAINTS

N/A

3.4.4 STANDARDS

N/A

3.4.5 PRIORITY

Low

3.5 ANNOTATIONS VIEW PORT

3.5.1 DESCRIPTION

Users should be able to control which section of annotations they are viewing. The document would be divided into three sections: top, middle and bottom and the user would be able to view only one section at a time when a particular section is chosen.

3.5.2 SOURCE

Myles Neloms

3.5.3 CONSTRAINTS

N/A

3.5.4 STANDARDS

N/A

3.5.5 PRIORITY

Low

3.6 RATINGS

3.6.1 DESCRIPTION

Users should be able to "upvote" good annotations and "downvote" bad annotations to improve the overall experience of other users. This will allow the community to gauge the helpfulness of each individual annotation.

3.6.2 SOURCE

Team

3.6.3 CONSTRAINTS

Ethical and social constraints would be that we're giving the community free range over the content of our product.

3.6.4 STANDARDS

N/A

3.6.5 PRIORITY

High

4 PACKAGING REQUIREMENTS

Our web application requires minimal packaging as the application is hosted by our server on a public domain(prototype on a local domain). Our application will however require internet access, a web browser, and a computer for clients to interact with the Annotext application.

4.1 REQUIREMENT NAME

4.1.1 DESCRIPTION

Internet Access, viable web Browser, computer are necessary to access our web application

4.1.2 SOURCE

Server and domain open for access and interaction.

4.1.3 CONSTRAINTS

Internet access

4.1.4 STANDARDS

Standard interaction with web application

4.1.5 PRIORITY

Critical

5 PERFORMANCE REQUIREMENTS

Include a header paragraph specific to your product here. Performance requirements address items such as: how fast specific critical operations must complete; how long it takes to start/stop activities; how long the battery must last; maximum time it must take to set up; etc.

5.1 REQUIREMENT NAME

5.1.1 DESCRIPTION

Detailed requirement description...

5.1.2 SOURCE

Source

5.1.3 CONSTRAINTS

Detailed description of applicable constraints...

5.1.4 STANDARDS

List of applicable standards

5.1.5 PRIORITY

Priority

6 SAFETY AND SECURITY REQUIREMENTS

Annotext requires users to input information that leads to the creation of a username and password. The passwords will be encrypted along with the personal information being safely stored in a database.

6.1 ACCOUNT CREATION

6.1.1 DESCRIPTION

Users will require a username and password. This information will be encrypted by the system.

6.1.2 SOURCE

Web Server

6.1.3 CONSTRAINTS

Every user has to have original usernames

Every user's password has to be a certain length and exclude personal information

6.1.4 STANDARDS

Saving users usernames and passwords in plain text

6.1.5 PRIORITY

Critical

7 MAINTENANCE & SUPPORT REQUIREMENTS

Our service will require intense server and database maintenance on the back end to ensure constant availability and data integrity. Administrators will also be responsible for maintenance in that they will screen flagged annotations in order to remove irrelevant, incorrect, and inappropriate annotations.

7.1 SERVER/DATABASE MAINTENANCE

7.1.1 DESCRIPTION

Ensuring 24 hour access to the website and ensuring the integrity of the data in the database

7.1.2 SOURCE

Workers for Annotext.

7.1.3 CONSTRAINTS

Budget/labor constraints - to ensure 24 hour maintenance it is necessary to work with people who can solve problems for end users. These workers must be paid and that budget is outside of the scope of our prototype.

7.1.4 STANDARDS

24/7 availability
Database data integrity

7.1.5 PRIORITY

Critical

8 FUTURE ITEMS

In the future we want to be able to service textbooks and worksheets to allow students/users to work together in the collective understanding of the information. We aspire to add audio and video commentary from users. We also aspire to allow users to create their own feed to receive commentary and annotations from peers. Unfortunately these requirements are outside of the scope of our project due to budget restraints and the intense maintenance necessary for upkeep of such a large system.

8.1 LARGE LIBRARY OF BOOKS AND WORKSHEETS AVAILABLE FOR STUDENTS

8.1.1 DESCRIPTION

We want to provide help for all students. this will require a mass of text that is achievable for budget, and storage space that we will be utilizing in the creation of our prototype.

8.1.2 SOURCE

Textbook brokers and free papers of old edition books and material.

8.1.3 CONSTRAINTS

Budget- buying server hosts and domains require monetary contributions that we have not attained
Work Force- currently my group will watch over the the maintenance of the server, but as the size of our project expands it becomes very labor intensive to continue server maintenance.

8.1.4 PRIORITY

High Priority

8.2 ADD AUDIO AND VIDEO COMMENTARY FROM USERS

8.2.1 DESCRIPTION

Our platform could allow videos and photos posted as responses to text questions

8.2.2 SOURCE

Students/teachers with diagrams and videos to help explain conceptual questions.

8.2.3 CONSTRAINTS

Labor intensive- Given only a semester allowing for the uploading of a video or photo as an annotation is outside of the scope of our working time.

8.2.4 PRIORITY

Moderate

8.3 ALLOWING USERS TO CREATE THEIR OWN FEED TO RECEIVE COMMENTARY AND ANNOTATIONS FROM PEERS.

8.3.1 DESCRIPTION

Allowing users to create their own sections/ entries into our website.

8.3.2 SOURCE

Students with material that they could use commentary on.

8.3.3 CONSTRAINTS

Budget- buying server hosts and domains require monetary contributions that we have not attained
Storage- several servers are necessary to promise all users a domain/ workspace of their own

8.3.4 PRIORITY

High

REFERENCES