

• **Problem statement:** Audio clips from the Trentoniana room (Trenton Free Public Library) often refer to photos, but listeners can't see them or get a visual representation of them. The library has an online resource to view photos from the time span many of the interviews discuss; however, this section is entirely separate from the interviews, making it a pain for listeners to find photos relevant to each interview. The lack of photos, especially ones referenced in each interview, is a big issue as it threatens a listener's ability to engage with and imagine Trenton in older eras. Visuals help keep the viewer's attention, and should be integrated into the interviews.

Another problem of the current website is in the fact that the interviewers and interviewees often refer to old companies (i.e. Woolworths) which do not exist anymore, have changed substantially, or are otherwise not relevant. This presents a problem, especially to younger listeners, who may find references to such companies confusing. As a documentation of Trenton through the years, it should be important for the project to try and engage young people.

• **Objective of the module:** The objective would be to design a large database system as well as improving the user experience and interface. To do this we can add a thumbnail to each interview to make the interview more appealing instead of the dull view it is now. We could also have images pop up when the speaker mentions certain things. Also, we could hyperlink to a brief explanation when the speaker refers to older topics (i.e. Woolworths).

• **Description of the desired end product, and the part you will develop for this class:** The desired end product is an enhanced version of the already existent audio library with the addition of possible real-time delivery of references (imgs, hyperlinks, short descriptions) relating to timestamps in a specific audio file. We will be primarily focusing on the additions of such files and data into the database of the website application and how we would query them and present them to end-users.

• **Description of the importance and need for the module, and how it addresses the problem:** The implementation proposed should enhance the user experience for the Trentoniana website application. By implementing real-time or files (img, hyperlinks, short descriptions) we can have a more enjoyable experience for users.

• **Plan for how you will research the problem domain and obtain the data needed:** to research the problem domain we will need to look further into the Trentoniana website and the audio and transcript files to get a better understanding of how we can improve the interface for the user. To do this, we will need to obtain data such as audio quality, visual quality(if applicable), accessibility of the website, and overall usability of the functions of the website.

Additionally, looking at other systems which seek to display similar information will be important in describing the optimal system for the Trentoniana collection. NPR, The American Archive of Public Broadcasting, and the Louisiana Digital Media Archive are all examples of systems that are set to display audio information, and each one has features that could be useful and will be further described below.

- **Other similar systems / approaches that exist, and how your module is different or will add to the existing system:**

We looked at several similar websites in the process of describing an optimal system for the Trentoniana collection. [The American Archive of Public Broadcasting](#) displays several features that make user interaction more meaningful. For example, audio clips are often accompanied by pictures (when available), along with having easy-to-read and relevant titles. Additionally, all files' thumbnails have underneath a quick description, which could be useful in our project. We also looked at the [Louisiana Digital Media Archive](#), which has a similar format to the above system, notably in each file having a useful description for its viewers. This system, however, has "playlists" of relevant and similar files on its homepage. For example, they have one called "Black History Month." When clicking on the link, it shows users a series of audio and video clips relevant to Black history. There are others for things like the environment, women's history, hurricanes, French history, etc.

- **Possible other applications of the system (how it could be modified and reused.):**

Mainly working with the individual audio files themselves, we are planning to use it as a base and enhance it. A possible additional application could be to have administrator accounts that are able to add, delete, or modify such files on the individual audio files without having to directly access the database.

- **Performance – specify how and to what extent you will address this. • Security – specify how and to what extent you will provide security features. • Backup and recovery – specify how and to what extent you will implement this:**

Performance: We will need to carefully consider how we would move forward with designing the database with the extra implementations. As these files on the database would be accessed multiple times per day, we cannot have it take too much time querying when the user loads an audio file.

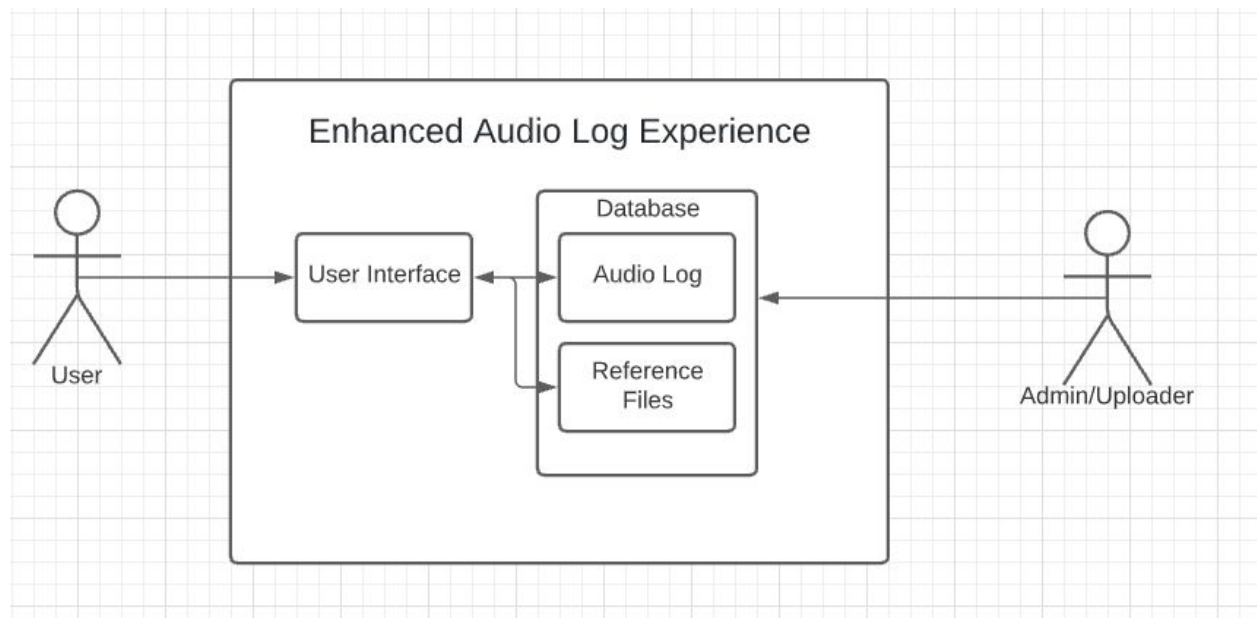
Security: Precautions made so that none of the database could be modified or accessed by normal users. Security faults such as database injections could be focused on as well.

Administrator accounts will be made to handle such actions.

Backup and recovery: Implementing timed automatic backups will allow us to maintain backups of the database in the case of a corruption.

- **Technologies and database concepts the team will need to learn, and a plan for learning these:** To implement these solutions we will be using PostgreSQL (a free and open-source relational database management system). In addition, we will be working closely with the Trenton Free Public Library website (specifically the Trentoniana room page).

- A diagrammatic representation of the system boundary that specifies what data you will model and which queries you will implement:



- 1-page quad chart; see: Quad\_instructions\_template.ppt in the Canvas files section

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<p><b>Need:</b></p> <ul style="list-style-type: none"> <li>• Improvement to the user interface of the website</li> <li>• Need visuals to help make it more visually appealing</li> <li>• Improved accessibility for the archived documents to help make finding specific documents easier</li> <li>• A better navigation system</li> <li>• A database that contains descriptions of old/not as relevant information that is mentioned</li> </ul>	<p><b>Approach:</b></p> <ul style="list-style-type: none"> <li>• Implement a thumbnail for each separate interview to make it more appealing and also give context to its content</li> <li>• Delivering links to references during certain points of the interview when foreign material is mentioned</li> <li>• Having images show up in real time to help aid the comprehension of the interview to listeners</li> <li>• Separating the documents into related databases</li> </ul>
<p><b>Benefit:</b></p> <ul style="list-style-type: none"> <li>• The website will have an improved and organized database of their archived documents</li> </ul>	<p><b>Competition:</b></p> <ul style="list-style-type: none"> <li>• Other systems such as the American Archive of Public Broadcasting has much more pleasing look to it and the</li> </ul>

<ul style="list-style-type: none"> <li>• An improved user interface and user experience will lead to more traffic on the website and possibly more returning users</li> <li>• A safely and securely designed database structure</li> <li>• Improved visuals of the website from an otherwise bland look</li> <li>• Unique database queries to help retrieve the needed data and information</li> </ul>	<p>information is sorted nicely with thumbnails and descriptions</p> <ul style="list-style-type: none"> <li>• Louisiana Digital Media Archive also has a much more completed design and includes useful information of their archives to the user</li> <li>• The North Carolina Folk Life Center is very well designed and features online exhibits that users can visit. They also stay up to date with a lot of information and include contact links so that the user can reach out if needed</li> </ul>
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