Allegheny College
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Senior Thesis

Black History Website: Overlooked History

by

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Abstract

The project developed is a Black history website titled "Overlooked History". This website is intended to be used as an educational platform that teaches users about facts within Black history that are not taught and/or expanded on within basic history and social studies classes. The website will be made through HTML, CSS, and JavaScript programming languages. The topics displayed on the website will come from Allegheny College students who are 18 and up in which a Google form will be sent out where they will be asked three questions regarding their high school history and social studies class experience. The questions on the form are: What are topics that were not covered in your high school history classes related to Black history that you wish you had learned about? What are topics that were covered in your high school history classes related to Black history that you wish they had gone more in-depth about? What are topics related to Black history that you think everyone should learn about? From there, the writer took those topics, researched them, and applied them to the website. Within the site, there are a lot of pictures for visual purposes and features for engagement. A page dedicated to understanding the purpose of why the website was made and who developed it along with references to where the images and content were found within the site. The site also provided a feedback form at the bottom of each page for users to share their thoughts.

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Introduction

"Education is the most powerful weapon which you can use to change the world.", a quote said by Nelson Mandela. Black history is a susceptible yet crucial and meaningful topic that all students should learn about. But unfortunately, the truth is being withheld from students when learning about Black history and American history [29]. This leads to a big question that this website is answering: what are the topics within Black history that are not being taught in schools? Learning about American history is essential so we can understand the development of American society and why it is the way it is today. But for us to properly and thoroughly learn about American history, we must learn about all parts of American history, including Black history [4]. The motivation behind the project is due to the writer's personal experience, there was a lot left out, not well elaborated on, and repetitiveness when it came to talking about topics involving Black history in school before college. The writer also was motivated by three quotes she found in three articles. The first being "The Black history curriculum needs to come from a Black perspective with topics specifically geared towards the Black experience." [25]. The second, "The mainstream social studies curriculum, however, either largely ignored Black history or misrepresented the subject." [20]. And the third being "…politicians have tried to ban Black studies curriculum and social movements education from schools and campuses." [2].

From this, the writer feels as if a lot of other students can relate. The objective of the website is to fill in the gaps that the American school system failed to fill, serve as a tool of remembrance, and celebrate Black history. Much like other Black history websites such as the Blackpast website [32], The National Museum of African American History and Culture website [30], and the Blackfacts website [9]. The project is to be informative, and educational, and help people see Black history in a different light.

Project at Hand

The project completed is a Black History website. This website has filled in the gaps the American school system left or still needs to serve within their history and social studies academic curriculum. This site aims to be an educational website where viewers can find information about Black history that is not typically taught in schools. The purposes of the site are to be educational and informative, create public awareness, be an eye opener, celebrate Black history, be a tool of remembrance, and encourage all people to see Black history in a different light. Not only that, but the website will reduce the amount of time researchers would spend looking at multiple various sites for one thing or topic, in which they can find that one thing or topic and more on this website, ultimately making the purpose of the website a time saver as well. The motivation to create this type of website stems from how Black history has been taught compared to other topics within history and social studies class from personal experience. Also, from observing how Black history is addressed around the United States.

Importance

This website is vital because of how the subject of Black history is treated and approached by the American school systems. Schools have tried to ban Black history and social movements from the curriculum [23], schools have tried to teach students that slavery was beneficial for the Black community because of skills learned through it [3], and schools allow teachers, mostly white teachers, who are not Black to teach about Black history in which those teachers have either misrepresented or completely ignored the subject altogether [20]. These factors keep students from understanding the subject correctly, and they also keep students from learning and appreciating Black history and culture fully. The project is in the form of a website for a few reasons: it is easy to access and all the user would need is access to the internet and the website link. Ultimately providing a broader audience reach. It is a low budget, an easy way to get viewers' attention through the website's design, and an easy way to install pictures and videos for visual representation.

Ethical Implications

This website is also essential because of what is to gain from it. A positive outcome of this website is that students can learn about America's past correctly. Since there have been efforts to justify [3] and erase [23] America's actual history, this website is all the more necessary. But along with positives, there are negatives, such as some might argue that this website was made to attack America based on its past because of specific topics revealed, but for us to properly learn about American history and why American society is the way it is today, we must know about the good and the bad parts of it, which includes the enslavement of Africans and African Americans, racist acts, colorist acts and more. Another negative could be that the topics selected on the website are biased, but the topics came from Allegheny students themselves. Allegheny students voluntarily responded to a Google form that asked them to list topics within Black history that they wished they had learned about in their high school history and social studies classes.

Outline

This thesis consists of four more chapters; the next chapter of this reading is "Related Works." This section will highlight, describe, and reference literature and articles used for the project but does not directly list them. The literature revealed in Related Works will also show how it connects back to the points made within the thesis. The next chapter is "Method of Approach". This chapter is about the infrastructure and tools used to implement the website created and the tools implemented to serve, test, and support research and the conducted experiments. It will describe the results gathered from the form and readings and list any diagrams or snippets of code or algorithm statements. It will record the information from the literature supporting the website's motivation. It will describe the languages used for implementation and address the interventions that the research incorporates or develops to address ethical concerns in datasets, software processes, or theoretical approaches. The next chapter after "Method of Approach" is "Experiments". This chapter will display and discuss evaluative metrics, data metrics, and data used as validation strategies for the website. This section will show the experiments' results and discuss their efficiency and effectiveness. The final chapter is the "Conclusion," in which this chapter

wraps up the whole project. It provides a summary of the research outcomes, experimental outcomes, and implementation outcomes. This section also proposes, if applicable, ideas for future work, areas where improvement could be made within the website, and features that could be added. This chapter will also describe evidence and results that caused ethical issues left unresolved or created within the research.

Related work

Importance

When trying to teach American history successfully, it is close to impossible not to teach about Black history because of the contributions and impact Black people have within America. So, disregarding Black history when teaching about American history is an act of neglecting the full story [4]. Unfortunately, not everyone agrees with that statement. There have been efforts to ban the subject altogether. Higher-ups, such as politicians, do not want the newer generations of people to be knowledgeable of Black history and to learn about America's true horrific past. As a result of this, they try to eliminate the subject from schools by banning anything related to it from the curriculum. Whether it be social movements, historical figures, or historical events [23]. Alongside trying to ban Black history from schools and campuses, some schools that do teach about Black history have been corrupting the subject. One way is within the state of Florida, the public school board of education has approved, sometime in July 2023, for students to be taught that some Black people had benefited from slavery. They are trying to teach this due to the certain skill factors that enslaved Black people had learned through work in which they can apply those certain skills for their own personal gain. These skills included cooking, gardening, carpentry, knitting, sewing, working as blacksmiths, working as mechanics, and more. By doing this, this is an act of trying to justify America's actions of enslaving Black Africans and African Americans for hundreds of years [[3]][**?**]. Another way is by teachers ignoring and misrepresenting the subject. When teaching about Black history, a lot of teachers, specifically white teachers, either downplay, do not want to teach and/or do not know how to teach about specific topics within Black history or the subject altogether correctly. This also ties into who exactly is teaching this subject. Black history should

and needs to be taught from a Black perspective because of how sensitive, heavy, and important it is and because of how deeply specific topics can and will resonate with students. An example of this would be if a Black teacher were to teach a class of students about oppression within the Black community, the outcome would be different because it would come from someone who knows what it is like and who has experienced said oppression. If a white teacher were to teach a class on the subject of oppression within the Black community, they could not express it with passion as if they had lived through and experienced it. It could also result in the teacher presenting the topic in a lazy fashion and breezing through the topic because they are not an oppressed group of people [24]. This leads to students not being interested in the topic, being mentally absent, needing to understand the seriousness of the topic thoroughly, and being unable to resonate and connect with the topic properly.

Why Learn About Black History

Learning about Black history is very important for a few reasons. One of these reasons is that learning about Black history will help students better understand how society has come to be today based on its past. Some topics include people like past enslaver Willie Lynch, whose speeches and letters were used to destroy the minds, bodies, and spirits of Black enslaved Africans and African Americans [**?**]. Events such as 1619 being the year that started the documentation of the transportation and enslavement of Africans to America, and the North Little Rock High School desegregation crisis. Also known as "Little Rock Nine," in which a group of nine African American students sought to desegregate Little Rock Central High School. Another reason is when non-African American students, even African American students who have not learned much about their history, learn about Black history, it gives them a new and deeper appreciation and understanding of the subject. Learning about Black history prepares students to reexamine and reanalyze the experiences of African Americans and how it has affected Black people today. Learning about Black history will build respect and empathy within students when they learn about all the hardships Black people have faced even before 1619. Although 1619 was not the start of Europeans transporting Africans to America and forcing them into slavery, it was the start of the documentation of this horrific act. This helps Black students understand

where their origins come from, and it helps them know their history a lot more. Lastly, learning about Black history will not only help students understand Black history more, but it will help them better understand American history as well[4], [8].

Why a Website

The project is in the form of a website for a few reasons: it is easy to access, all one would need is the internet and a link, and anyone and everyone can see it, so it provides a broader audience reach. It is low budget, can assist teachers while teaching about specific topics, is an easy way to get viewers' attention through the website's design, and is an easy way to install pictures and videos for visual representation. This website uses ICT, which stands for information and communication technology. This means this technology will be used to handle information and aid communication [27]. This website will improve teachers' teaching as it could serve as a resource and outlet within history classes, and it will also enhance students' ability to learn within history classes in which they can use the site as a resource and outlet. Within the article 'Using New Technologies to Enhance Teaching and Learning in History states', it states "The Internet makes it easy to 'tune in to' current debates about historical and present-day issues and controversies. The combination of YouTube, history and current affairs blogs and wikis, and digital access to newspaper archives makes it easy to draw on materials that consider 'persistent issues in history' and enable pupils to see the 'big picture' of the past over extended periods…" (Haydn 18)[5] which is what this website is doing. It uses technology to help teach topics within Black history that are not typically taught within American history and social studies curriculum to help others understand the past entirely and how it relates to and impacts the present. The article 'Pictorial Illustrations Still Improve Students' Learning from Text' highlights that storybooks can also be called "twice-told tales" because looking at a picture alone can tell a whole story. The article also mentions how photos complement the text and that they "serve as adjunct aids for "reading to learn" " (Carney and Levin 2). This is what the website is doing. There are a lot of pictures to help viewers better understand the content, to put a face to a name for historical figures mentioned, to help tell the stories, and to keep the viewers engaged with the website. Visual representation helps us simplify complex text, concepts, and ideas [10]. Choosing

to build a website will also allow me to design the site freely in a way that can attract viewers. Colors are important because they highlight certain content and information and promote information recall. Using a variety of colors helps the viewers distinguish between differences and similarities more easily. Colors also allow us to memorize certain information through our attention levels [13]. Some technical components within the website to help viewers learn are developing the content, which will coordinate with the website's design. This will be displayed through hyperlinks and online communication in which there will be a feedback form so viewers can express their opinions about the website and its content [32].

Mobile Responsiveness

A mobile responsive website is a site that is able to alter its initial layout to fit the size of different devices. This is also known as RWD which stands for Responsive Web Design. This requires a change in the website's initial design to be sustainable for other devices transforming the site from a static website to a responsive website. A responsive site causes the elements within the site to be more flexible and gives it the ability to rearrange itself automatically [16]. A static website is a site that has fixed code in which the site can not alter itself to different screen widths [1]. This forced the developer to think carefully about the initial design of the site due to altering for different screens.

Method of approach

Gathering Information

The first step before collecting data, the writer had to undergo the IRB process. IRB stands for Institutional Review Board. According to the Allegheny College website, "The Allegheny College IRB oversees research involving human subjects. The Common Rule requires all institutions, including colleges and universities, to have an Institutional Review Board (IRB) in place to assure that the rights and welfare of all human research participants are protected. Therefore, the IRB reviews all studies involving human participants before the initiation of work, approves research that meets established criteria for the protection of human subjects, and ensures that human participants are properly informed and protected during the study [7]." After the IRB had given the approval to move forward with the project, to gather the different topics that are displayed on the website, an anonymous online Google form was created and sent out by the writer. The form was only for 18 and older Allegheny students because this website is supposed to highlight topics within Black history that are not taught within basic high school history/social studies classes, the form asked them that question. "What are topics that were not covered in your high school history classes related to Black history that you wish you had learned about?", "What are topics that were covered in your high school history classes related to Black history that you wish they had gone more in-depth about?", and "What are topics related to Black history that you think everyone should learn about?". The information gathered is then viewed, researched, and applied to the website.

Recruitment Process

To recruit participants, various forms of communication had been utilized. The writer had sent out a few messages to the Computer and Information Science Discord messaging app. Discord is used throughout the department for all inter-departmental communication. There had been a channel created that consisted of everyone, faculty, and students, in which the writer's messages were sent through that channel to invite them to participate in the form. Flyers with a QR code to get to the link for the form had been displayed around campus. The writer was also a part of the board of two different clubs on campus, The Association for the Advancement of Black Culture and Black Girl Magic. An email had been sent to the members of those clubs inviting them to participate in the study. Similar information along with the flier had been posted on the Instagram accounts of those student clubs. Also, after events and/or meetings of these clubs, the writer announced the study and encouraged participation.

User Interface

Before starting the coding process, a website mockup was created. A mock-up is a visual representation that showcases a product. It is important because it helped the developer physically visualize the design features and full layout of the web pages. Mock-ups also help with deciding which colors are to be used for the color scheme, positioning of text and pictures, formation of buttons and forms, and help keep consistency between the pages [19]. Mock-ups can be done in various ways such as using online sites like Figma, Miro, or even Placeit. Another way is by using designing sites such as Canva, Adobe, or Procreate or even using a simple sketchpad would be a great way to make a mockup. The writer created mock-ups for the website using Canva and DYNO Mapper. Canva is a free graphic design site that enables you to create designs for multiple things, such as flyers, business cards, and invitations.

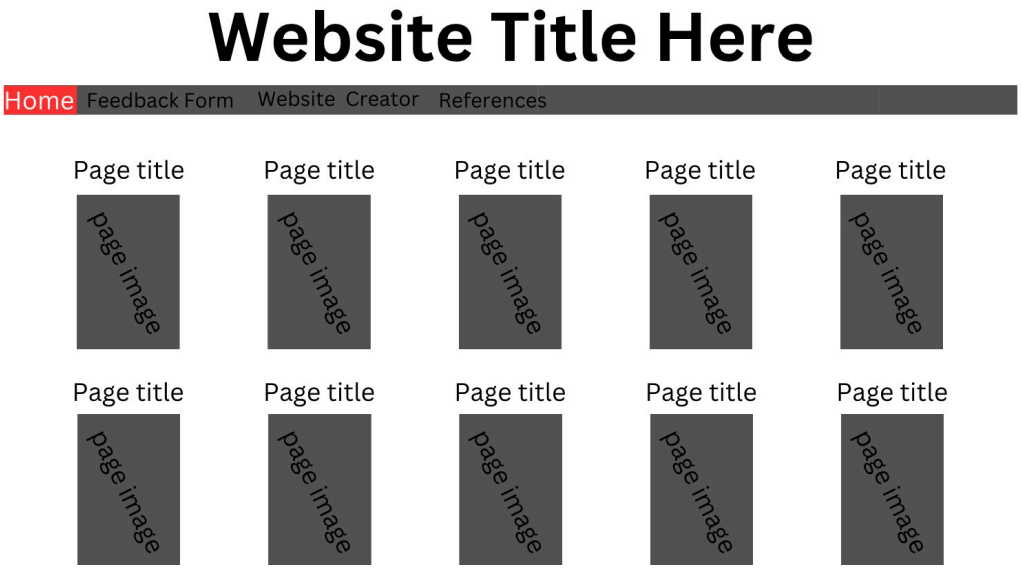


Figure 1: Home Page

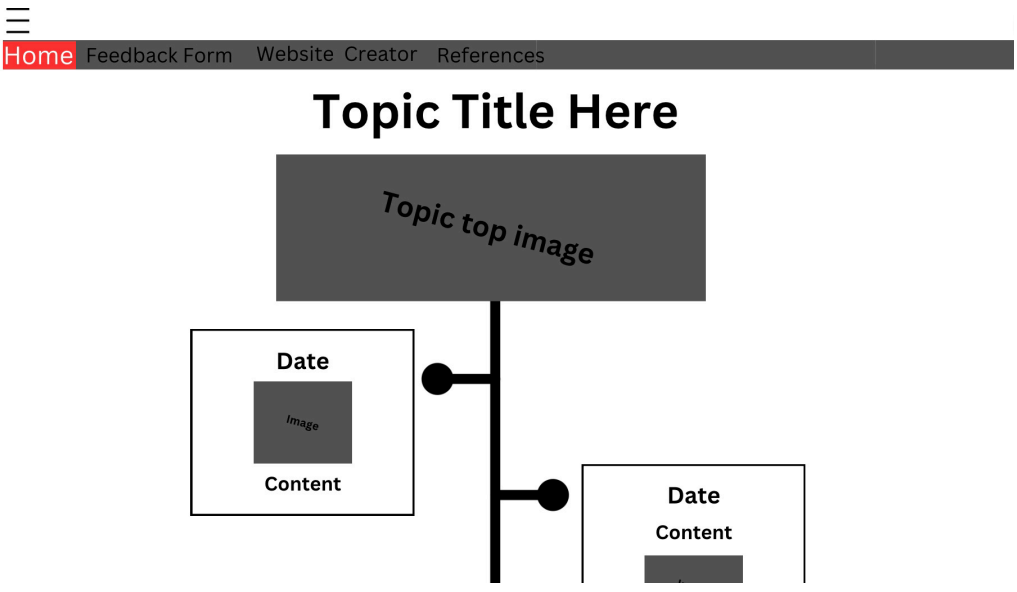


Figure 2: Pages

It also allows you to make presentations, videos, logos, documents, and even resumes that you can share with different people and email accounts. The site also provides templates that users can use that would go best with a particular theme one has in mind. DYNO Mapper is an online platform used to create visual sites and content planning.

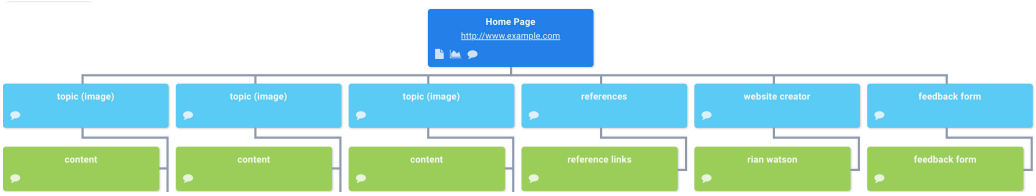


Figure 3: DNY Mapper

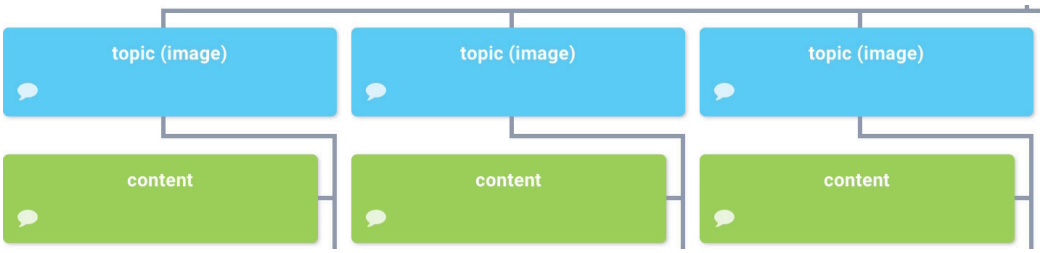


Figure 4: DNY Mapper (Left Side)

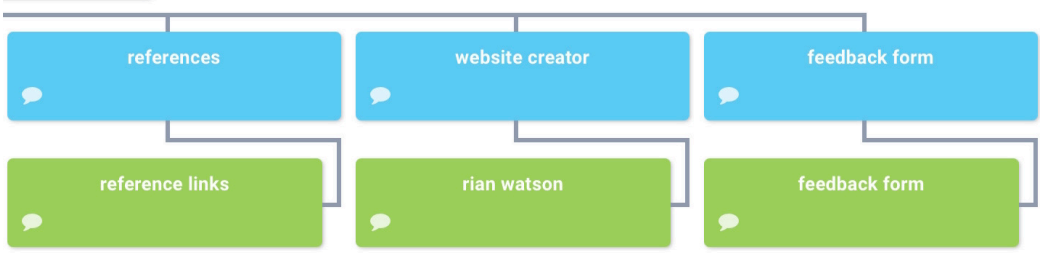


Figure 5: DNY Mapper (Right Side)

Design for the Website

"People learn more deeply from words and pictures than from words alone" [17]. This is a form of learning called multimedia learning which is what the website uses [28]. For the home page, the website has different topics listed that the user can learn about. With these topics, there are pictures that go along with the topic. Within these topics, there is content that is accompanied by photos that help the user understand the text better, set the tone, put faces to names, and altogether help with visual representation. Because of the many pictures that are displayed throughout the website, the writer decided that the color scheme will be black, white, and gray. This color scheme is timeless, supports versatility and simplicity, and is best for the different colors and the "busyness" of the photos that will be used. Ultimately allowing for the photos to stand out. This will be easier on the user's eyes and allow their eyes some calmness [11]. There are also some hints of red and green for which they are two of the three colors within the Pan-African flag. Red symbolizes the blood that connects all people of African ancestry and it also represents the blood that was shed for liberation. Green symbolizes the natural wealth of the land in Africa [6].

Implementation

When planning how to code the website, the writer took into consideration which coding language(s) would be best for development in the source-code editor, VSCode, Visual Source Code. The writer then decided that using one markup language and two programming languages, HTML, CSS, and JavaScript, would be the best options for the front-end design and back-end development. Frontend design is the design process that appears directly on the user's browser. The two out of three languages used that refer to frontend design are HTML and JavaScript. HTML stands for HyperText Markup Language which is not considered a programming language but a markup language. This is because of the language's ability to have components related to a document such as a heading and a title function,

`<title> <h1-6>`

paragraph function, `<p>`, and a list function that also allows for an ordered and unordered list, `<li> <ul> <ol>`. It is used to apply the content to

the pages of the website and create hyperlinks, forms, and more. It uses programs and scripts to make the site interactive. CSS is another front-end language that stands for Cascading Style Sheets and is used for positioning and styling within the site. Backend development is all about what happens behind the scenes of a website. It is the scripts and programs developed that make the website pages interactive. There is a debate on whether JavaScript contributes to frontend design, backend development, or both. JavaScript is used on the website for the features and functionalities within the site and is a scripting language [26].

Features

According to Indeed "Website features are the many individual components that make a website easy to navigate, functional, and valuable to users. Some features are navigational, such as a content list or navigation bar, whereas others provide a service to users, such as a contact form or quote generator" [18]. Website features are very important because they are what guide, engage, and attract viewers to the website. They are what will bring views back to the website, if the features are not up to par, the result of that will be viewers not visiting your website and will cause less engagement time on the site [36]. The writer used features to enhance user engagement and the design of the site. After these features were implemented, they were pushed to the ReadyResearchers-2023-24/BHWebsite repository in Github. These four features that the website contains are scrollbars within the timelines, a feedback form, and a bar at the top of all the pages.

Scrollbar Feature

One of the features within the website is the scrollbar feature that is placed within the different tabs of the timelines on the pages. The code for this is within the .content class in all of the CSS files except for the reference, rian, and index HTML and CSS files. Within the .content class, this is the code used for this feature.

```
overflow-y: scroll;     max-height: 70vh;
```

This line of code applies the scroll bar within the content tabs of the timeline.

```
overflow-y: scroll;
```

Applies the scroll bar within the content tab of the timeline.

```
max-height: 70vh;
```

This line of code adjusts the height or how long the content tab will be which will also affect the length of the scroll bar. A comment within the .content class is made above these two lines of code stating what they do. To make comments in CSS we add a forward slash, asterisk, your message or comment, and then another asterisk, and then lastly another forward slash.

```
/* YOUR MESSAGE */
```

Feedback Form

Another feature that is within the website is the feedback form. The form is intended for viewers to leave whatever message they desire to the writer rather than be content they would like to see on the website, suggestions, or to share their opinions on the site. To make the form, the writer first created the form tag. Within that tag, it has to be indicated how the form will be sent. She did this by calling the method attribute and assigning it to "POST" which according to W3Schools, "...is used to send data to a server to create/update a resource" [35]. We also call the "data-email" attribute and assign it to any email address. This will send the message directly to that desired email address. The code for that looks like,

`<form method = "POST" data-email = "EMAIL OF YOU CHOOSING">`

All within this form tag there is a legend attribute which allows you to label/title the form.

`<legend>YOUR LABEL/TITLE</legend>` Next, we create the first two boxes for the visitors to fill out which are within a div tag and assign it a class the first one is named boxn and the other is named boxe. Within the box div tags we use the `<p>` element with stands for paragraph. Here is where we label the boxes. The first box is named Full name and the next is Email. Next, we have the input tag, `<input>`. The input element represents a typed data field, usually with a form control to allow the user to edit the data [34]. Within this input tag, we have the "type" attribute and assign it to the "text", and "id" attribute, and assign it to "name". The "name" attribute gets assigned to "name", and "placeholder" attributes gets assigned to a message the writer wanted displayed in the box. The last

attribute, “required” is assigned to “required”. The required attribute will appear if the user was to try to submit the form without completing the box.

```
<div class = "boxn">
    <p>
    Full name <input type = "text" id = "name" name = "name" placeholder="Ente
        </p>
    </div>
    <div class = "boxe">
    <p>
        Email <input type = "text" name = "ID" placeholder="Enter your email a
        </p>
</div>
```

After these two boxes for the user’s name and email, the writer needed to create the box for the user’s message. She added a textarea tag that indicates a text input that has multiple lines. Within this textarea tag, we have a “name” attribute assigned to “message”, an “id” attribute assigned to “contactcomment”, and a “rows” attribute assigned to “6”, “cols”, which is short for columns, attribute assigned to “20”. This will allow the user to expand the message box to their liking to see their whole message if it is lengthy. Lastly, again the writer added a “placeholder” attribute that gets assigned to a message the writer wanted displayed in the box and the attribute, “required” is assigned to “required”.

```
<textarea name = "message" id = "ContactComment" rows="6  cols="20  placholde
```

Lastly, to finish the feedback form, she needed to add and complete the submit button. She did this by adding another paragraph element. Within this element, she added the input tag and within this tag, she had a “type” attribute, a “name” attribute, and a “value” attribute. All three attributes get assigned to “submit” which will send the information typed in the boxes by the user to the listed email implemented.

```
<p>
    <input type = "submit" name = "Submit" value = "Submit" />
</p>
```

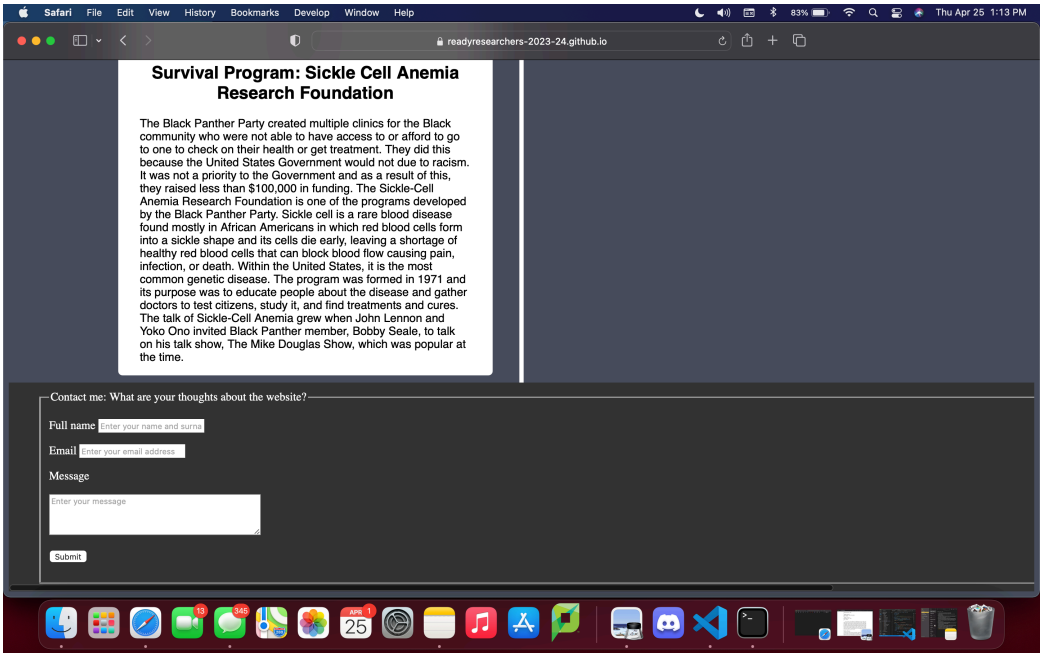


Figure 6: Feedback Form Feature

Top Bar Feature

A third feature within the website is the top bar which can be seen on all the pages. This top bar makes getting to the home page, feedback form, website creator page, and references page more accessible. We do this by calling hyperlinks in our HTML files. A hyperlink is an element in an HTML document that links to either another portion of the document or to another document altogether. On webpages, hyperlinks are usually colored purple or blue and are sometimes underlined [33]. We can call hyperlinks in HTML by calling the a href tag.

```
<div class = "topbar">
<a class="active" href="index.html">Home</a>
<a href="#feedback">Feedback Form</a>
<a href="rian.html">Website Creator</a>
<a href="reference.html">References</a>
</div>
```

Between the starting and ending tags is the word(s) implemented that the writer wanted the link to be attached to so that when clicking on the word(s), the user's screen will be redirected to that attached link. The hyperlink is assigned to the "a href" attribute. To do this, the writer added the file or URL link inside the quotes and it will redirect the user there. At the beginning of this code for the hyperlinks, the writer assigned a div class to "topbar". She then went into the CSS file associated with the HTML file and called the class there to begin styling the top bar feature.

```
.topbar {
margin: 0;
font-family: 'Times New Roman', Times, serif;
overflow: auto;
background-color: #333;
white-space: nowrap;
}


.topbar a {
display: inline-block;
color: white;
text-align: center;
padding: 14px;
text-decoration: none;
}
.topbar a:hover {
border-bottom: 3px solid green;
color: black;
}
.topbar a.active {
background-color: red;
color: white;
}
```

To call a div class in CSS from an HTML file you must start it by having a period, the name of the div class, and then an open then closed curly brace. Within the curly braces is where the writer styled the content within that div. The 'topbar class' and 'topbar a' class are where she implemented the

color of the bar and edited the text within it. 'Topbar a: hover' affects what happens to the text when the user's cursor is hovering over the words. In the code, it indicates that there will be a solid green bar under the words when hovering over them. The last class is the 'topbar a.active' class. This class only affects what is in the active class in the HTML file which the word implemented was "Home". The code indicates that the background of this word is red and the text color will be white.

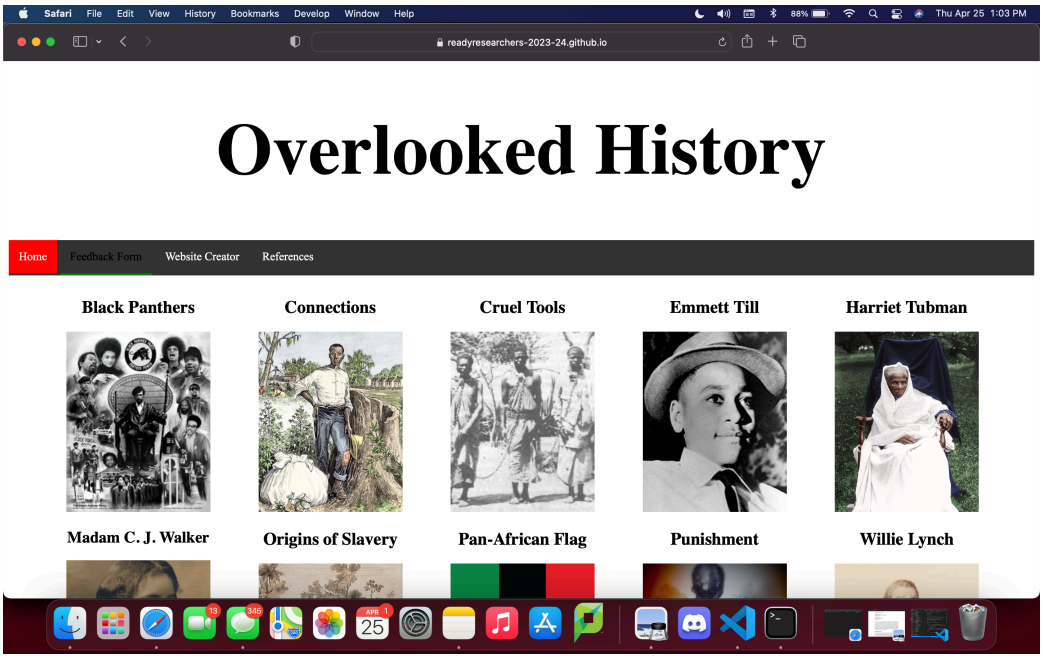


Figure 7: Topbar Feature

Sidebar Feature

A fourth feature within the site is the sidebar. This sidebar was implemented in all the pages on the website besides the home page. To access this feature, there are three bars also considered to be "hamburgher bars" that the user must click on to open it. This was done through calling on the button tag in HTML.

```
<div id="main">
```

```
            <button class="openbtn" onclick="openNav()">&#9776;
            </button>
        </div>
```

The button tag tells the system to create a button. With the "onclick" attribute this allows for that button to be clickable. The "openNav()" assigned to that attribute tells the system that the writer wants the clickable button to open. The value `&#9776` is what displayed the three bars on the site. To close the sidebar, the steps are similar to opening the side bar. The "onclick" attribute is called and instead of calling the "openNav()" attribute, the "closeNav()" attribute is called, telling the system to close the sidebar. Within the side bar there is an X that indicates that the user does not want the sidebar open anymore. To form that X we call on the value `&times`. This will look like `onclick="closeNav()">&times`. To alter the side bar the writer used JavaScript programming language, JS. To do this she called the script tag, to tell the system we are implementing Javascript code.

```
<script>
            function openNav() {
                document.getElementById(
                    "mySidebar").style.width = "200px";
                document.getElementById(
                    "main").style.marginLeft = "200px";
            }
            /* Set the width of the sidebar to 0
            and the left margin of the page content to 0 */
            function closeNav() {
                document.getElementById(
                    "mySidebar").style.width = "0";
                document.getElementById(
                    "main").style.marginLeft = "0";
            }
</script>
```

Within the 'openNav()' function, the 'document.getElementByID()' method is getting and returning the element with a specified id, with that id being "mySidebar" and another being "main" within the code. The 'style.width' and 'style.marginLeft' sets the width of the sidebar which is

set to 200px in which px stands for pixels. The code for the 'closeNav()' function is the same as the 'openNav()' function but was set to 0 indicating that because the sidebar is closed, none of the bars should appear on the screen.

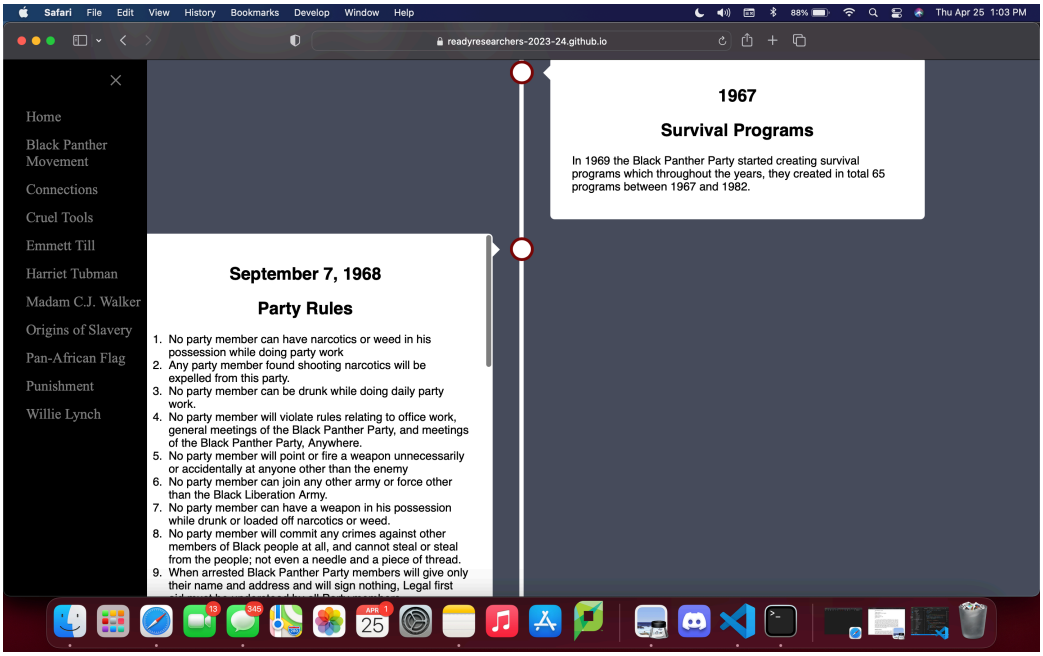


Figure 8: Sidebar Feature

Experiments

There were two knowledge gaps that this Black History website has filled. The first is how people will be able to learn from this website. The second gap is what are topics within Black history that are not typically taught in schools. The first question was covered within the website through the use of content accompanied by pictures for visual representation. There are pictures throughout the home page, the top of each page topic, throughout the timeline, and on the website creator page. The second knowledge gap was answered by having Allegheny students fill out the Google form and the writer researching those results and applying them to the website for those individuals who responded and others to become knowledgeable of those topics.

Feedback Form Responses

Between the two months and one week the feedback form was open, it had a total of thirteen responses from Allegheny students. To describe the type of responses received into one or few words for each question, the first question was mostly about slavery, question 2 was mostly about the actual horrors or slavery, and question 3 was mostly about Black leaders. From these responses, the writer added these ten topics to the site: Black Panthers, Connections, Cruel Tools, Emmett Till, Harriet Tubman, and Madam C.J. Walker. Origins of Slavery, Pan-African Flag, Punishment, and Willie Lynch.

```
`Table:` Questions and responses from feedback form.

|Questions on form | Responses with most occurances |
|:-----------------|:-------------------------------|
|Question 1        |Slavery                         |
```

```
|Question 2        |The actual horrors of slavery   |
|Question 3        |Black Leaders                   |
```

Testing

Before deploying and publishing a website for the public to visit, it was important for the writer to run tests on the site to ensure that all the hyperlinks, features, and buttons work properly. After the development of the website, the writer ran tests to test the site's functionality, code, content spelling errors, and engagement of the site. The first form of testing the writer did for the website was checking the code used to develop the site. This was done through an online site called W3C Validation. Within this website, the writer had copied and pasted each HTML file into the site and tested the code. If there were any errors, she edited the code to the suggestions the site made and tested the code to ensure that there were no remaining errors. The second form of testing she did was to check the spelling and grammar of the content and headings of all the pages of the site. This test was done by using an online site called Grammarly which is an AI text generator used to polish and proofread student writing [15]. The writer copied all the content and headings on every page of the site and pasted it into a new word document in Grammarly. There, Grammarly scans the document and analyzes how to improve the writing. The site then highlights words or sections in the document that need to be corrected and provides suggestions on the side of the document. This site checks for accurate spelling, punctuation, and grammar and ensures that the writing is clear and easy to comprehend and read. After the changes were made, the writer copied and pasted the sections in the document that were changed into the HTML file associated with the website page being edited and pushed the changes to the repository in Github. The third form of testing the writer did was functionality testing. Functionality testing is a test that ensures that each application feature works based on the requirements of the software [22]. To run this test, she went through every page and clicked on every hyperlink, button, and tested every feature displayed on the sites pages to ensure that they all worked for the photos, top bar, sidebar, YouTube videos within the Pan-African Flag and Harriet Tubman pages, and links within the website creator page, and references page. Because the writer went through these pages herself, this is a specific type of testing called manual testing. Manual testing means

manually testing software to ensure that it is working. Manual is defined as done by hand rather than it being done through a machine. To keep track of all these tests to make sure that a page does not go untested, the writer kept track in a Google Sheets document. The document explains that at the top that an "x" indicates the specific page has been tested and is functioning correctly. Each page title is displayed in its own column in which the "x" was displayed under each page title. There are two rows in which the x's will be placed, one for functionality testing and another for spelling and grammar checking. Currently, there are x's under each page title.

```
`Table:` Manual test done by the writer.
|Pages              | Functionality test: | Spell Check: |
|:------------------|:--------------------|:-------------|
|Home               |X                    |X             |
|Black Panthers     |X                    |X             |
|Connections        |X                    |X             |
|Cruel Tools        |X                    |X             |
|Emmett Till        |X                    |X             |
|Harriet Tubman     |X                    |X             |
|Madam C.J. Walker  |X                    |X             |
|Origins of Slavery |X                    |X             |
|Pan-African Flag   |X                    |X             |
|Punishment         |X                    |X             |
|Willie Lynch       |X                    |X             |
|Website Creator    |X                    |X             |
|Refernece          |X                    |X             |
```

Deployment

After the writer checked each HTML file through the W3C Validation site, checked the spelling and grammar of headings and content through Grammarly and after she had checked the functionality of the site manually, the site was ready to be deployed and published for user's to view. To deploy the website, she did this through Github pages. This was done by assessing the repository associated with the website titled "BHWebsite", assessing settings which are located under the repository name, and navigating to the menu towards the left of the page where Pages are listed. When she clicked on

Pages, she scrolled down to Build and Deployment, clicked on the dropdown under Source, and selected Deploy from a branch. Next she made sure the site was built from the main branch and had selected the proper folder for the publishing source, for the project, the writer published through the root folder. After those steps were completed, she clicked save, and a .github.io link was generated for the site [14].

Tracking Traffic and User Responses

After the deployment of the website foot traffic and how users respond to the website was tracked. There are a few applications designed to track just how many people viewed a specific website such as Glassbox, Heap, and Clicky. The writer did this by using Google Analytics because it was easy to understand and set up. Google Analytics is used to track and report how many people viewed your website, where in the world they viewed it, what pages were viewed the most, on what device the users viewed the site, and more. To set up Google Analytics, the writer had to set up an account and then set up the web property in the 'Web' app platform. In the website field, the link to the website was copied and pasted into the Website URL and from there it created a stream name. After this step was completed the next step was to click the blue 'Create stream' button. After this step of adding the website to Google Analytics, the next step was for the writer to add the proper tags to tell the site exactly what to track. This was done by clicking the yellow 'View tag instructions' button at the top of 'Web stream details', which took her to another page titled 'Installation instructions'. There, 'Install manually' was selected to receive the Google Analytics tag code. The last step from there was for her to paste the tag code into the header tag of each HTML file [12]. These steps were followed and done by the writer and so far, the website has had about 94 people visit the site between the day the site was released, March 19, 2024, to April 25, 2024. In terms of the responses she had gotten back from the users through the feedback form on the site, there are a total of 9 responses. Some feedback responses mentioned that the user enjoyed the website and it was very educational. These responses include comments such as "I love how easy it is to navigate through the website…", "I believe that it is very informative…", "The website looks good…", "The website is very informative, important, and easy-to-navigate!" and also "I feel that the website is very

well documented and researched. A lot of information is very detailed.”.

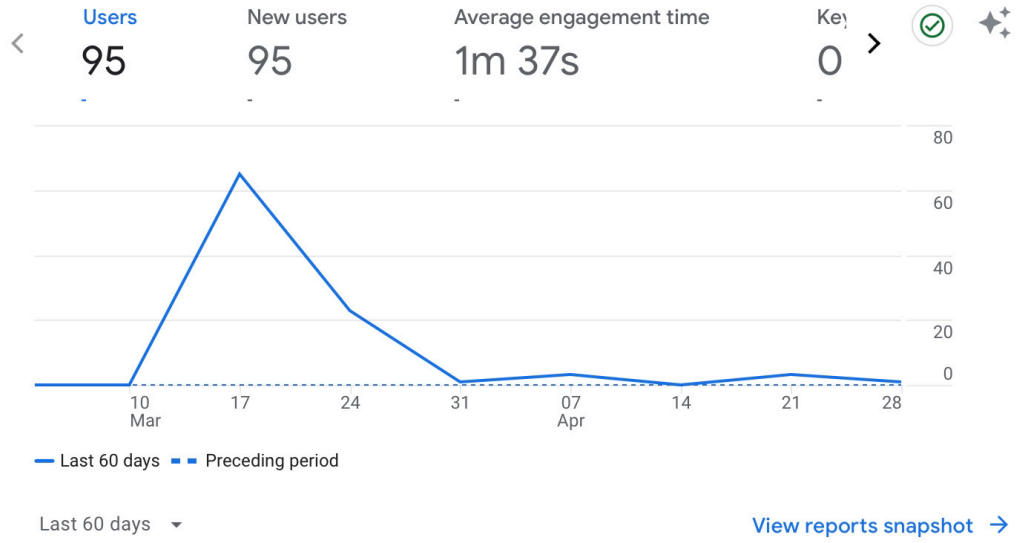


Figure 9: Google Analytics

Conclusion

Summary of Work Done

The goal of this Black History website is to be educational, informative, create public awareness, serve as an eye-opener, tool of remembrance, and celebrate Black history. The website was designed to serve as a tool where people can learn about figures and facts that are within Black history that people are not typically taught in high school history / social studies classes. Actions that were taken to work towards this goal were to create a layout for the website to help the writer have a visual representation of what the code is going to create in the end. This was done using Canva and DNY Mapper. The next step was to collect data from Allegheny students asking them three questions: What are topics that were not covered in your high school history classes related to Black history that you wish you had learned about? What are topics that were covered in your high school history classes related to Black history that you wish they had gone more in-depth about? What are topics related to Black history that you think everyone should learn about? The topics responded by the thirteen students who shared were viewed, researched, and implemented on the website. The implementation was done using one markup language, HTML, and two programming languages, CSS and JavaScript. After all implementation was done the second to last step was to deploy the website. Within the Github repository, ReadResearchers-2023-24/BHWebsite, there was a setting that had allowed deployment through Github Pages. After this step, the final step was to set up Google Analytics and send out the website link. Google Analytics was used to track foot traffic and identify how long people engaged with the site.

Threats to Validity

Through working on this website there were a few things that were dire to have. If not added, it would not meet the goal of a finished product. One of these things includes the feedback form and setting up Google Analytics. The goals that had been set by the writer that the website should serve are to be educational, informative, create public awareness, serve as an eye-opener, a tool of remembrance, and celebrate Black history. To prove that the website was meeting these goals, the website provided a feedback form so users can provide suggestions or opinions about the website, feedback on topics they would want to see on the site, etc. Google Analytics tracks the foot traffic of the website to indicate how many people have seen it, what country in the world visitors viewed it from, what pages on the site have the most views, and more. This is important because it proved that viewers are accessing and engaging with the site.

Future Ethical Implications and Recommendations

Like most projects, there is always a way to make improvements in some way. One way to improve the website would be the usage of Figma. The writer would have used Figma in the beginning stages of designing the layout of the site because Figma is a collaborative web application that allows designers to form, share, and test layout designs for web applications. This tool is used by UI/UX designers, front-end developers, graphic designers, and web designers. The writer would have used Figma because of its many design tools, its ability to generate iOS, Android, and CSS code, and because it allows designers to create simultaneously in a team on a project [31]. Another improvement would be using media queries. Since the writer had coded the website using a MacBook laptop computer, the layout for the website will look different if visitors were to view the website using other devices besides just a computer such as a phone or tablet. This is because each device has different screen widths. As of now, if the site was to be viewed using a smartphone, on the home page, the title page would be too big for the site. Therefore the user would need to zoom out the site to view the whole title. But doing this causes the website content to have a cut off point that is not at the edge of the screen like it would on a computer screen. Additionally, The content pages and their

title overlap each other. On all the other pages, they do not experience this layout issue. In fact, the only thing that is different from the view of the other pages on a smartphone or tablet from the computer screen is that those device views do not have the scroll bar feature on certain tabs in the timeline. The layout on the home screen while viewed on a smartphone can be fixed by using media queries. A media query helps with responsive web design and layout in which it provides the ability to create different layouts depending on the size of the viewport of said device. In addition, media queries can also indicate whether the user's device has a mouse or touchpad/trackpad or if the device is touchscreen [21]. Media query can be used in CSS code which can be in the stylesheet but as a separate section [35]. Media queries not only help with different device screen widths, but they also help with the changes in screen widths of the web browser through the same device. When viewing websites on a web browser, their layout becomes different depending on the width of that browser. For example, images that are across from each other displayed in a row on a website when the browser is stretched taking up 100 percent of the computer width, can appear to be stacked on top of each other in a column when the web browser is shrunken to take up 50 percent of the computer width. This would be another way to better the artifact and also is what needs to be done to improve the artifact. An example of how to implement a media query would be

```
@media screen and (min-width: 480px) {
  body {
    background-color: blue;
  }
}
```

The last improvement the writer suggests for future work that would benefit the site would be adding more features. One feature could be sections where there are topics and within those topics there are subtopics. An example of this would be having a topic listed as people. When clicking on that topic or hovering over it, a drop-down will appear that will have other topics related to that topic within it. Such as Willie Lynch, Emmett Till, Harriet Tubman, and Madam C.J. Walker. The dropdown can also have topics that mention people rather than just topics dedicated to a specific person. Such as on the website, Huey P. Newton, Norma Mtume, and Bobby Seale are mentioned in The Black Panther's topic. Another feature could be a search

bar allowing users to look up exactly what they are interested in. Some suggestions users mention within the feedback form that would also improve the website are “In the near future it will be cool to see an interactive tab…”, “…needs some work on a mobile device.”, and also “I feel that a title that is more creative/ more unique would be cool. My idea would be something like The Forgotten Past, Discovering the Erased, or something like that.”

In conclusion, for future and further work, the writer suggests that the Black history website should be laid out using Figma for better visual representation of how the website is going to function once implementation is completed. Media queries should be used to help with layout of the website on different devices, and adding more features such as a topics bar with subtopics and a search bar.

References

[1] 2022. *Pluralsight*. Retrieved from https://www.pluralsight.com/blog/creative-professional/static-dynamic-websites-theres-difference#:~:text=What%20is%20a%20static%20website,can't%20just%20change%20itself.

[2] 2023. *The Guardian*. Retrieved from https://www.theguardian.com/commentisfree/2023/feb/14/african-american-studies-history-repression-resistance-republicans

[3] 2023. *WRAL.com*. Retrieved from https://www.wral.com/story/fact-check-does-a-new-florida-curriculum-teach-that-enslaved-people-benefit
20971401/

[4] *The Newark Trust for Education*. Retrieved from https://www.newarktrust.org/why_all_students_benefit_from_learning_black_history#:~:text=All%20students%20benefit%20from%20learning%20Black%20history.,that%20align%20with%20their%20interests.

[5] Using new technologies to enhance teaching and learning in history. *Google Books*. Retrieved from https://books.google.com/books?hl=en&lr=&id=UUSBOfAOmv8C&oi=fnd&pg=PP2&dq=Using%2BNew%2BTechnologies%2Bto%2BEnhance%2BTeaching%2Band%2BLearning%2Bin%2BHistory&ots=Kw-dTOvLHb&sig=iB_5G8LvO8CHRAqf162eYk50ETs#v=onepage&q=Using%20New%20Technologies%20to%20Enhance%20Teaching%20and%20Learning%20in%20History&f=false

[6] *CSUSM*. Retrieved from https://www.csusm.edu/bsc/pan-afflag.html#:~:text=Red%3A%20the%20blood%20that%20unites,wealth%20of%20Africa%2C%20the%20Motherland.

[7] *Allegheny.edu*. Retrieved from https://sites.allegheny.edu/committees/institutional-review-board/

[8] New Jersey Monitor March 6 Alnazir Blackman. 2023. I teach AP african american studies. Here's why the course is important. *New Jersey Monitor*. Retrieved from https://newjerseymonitor.com/2023/03/06/i-teach-ap-african-american-studies-heres-why-the-course-is-important/#:~:text=Learning%20about%20African%20American%20history,and%20inclusive%20community%20for%20tomorrow

[9] BlackFacts.com. Blackfacts - home. *Blackfacts.com*. Retrieved from https://www.blackfacts.com/

[10] Russell N Carney and Joel R Levin. 2002. Pictorial illustrations still improve students' learning from text. *Educational psychology review* 14, (2002), 5–26.

[11] Ana Cvetkovic. 2023. 7 website color trends that'll be everywhere in 2024. *Wix Blog*. Retrieved from https://www.wix.com/blog/website-color-trends?utm_source=google&utm_medium=cpc&utm_campaign=12188669214%5E114296906861%5Esearch+-+dsa&experiment_id=%5E%5E497047742397%5E&gclid=CjwKCAiA8NKtBhBtEiwAq5aX2IMRrkkvlVgN-XxJxfHj5iqLaLIcjzl42uZ8e0n6P86uBXM7_qpavRoCw0UQAvD_BwE#viewer-39aiv

[12] designopage. 2023. setup google analytics in HTML website google analytics code google analytics tag. *YouTube*. Retrieved from https://www.youtube.com/watch?v=4aJPru62MJ8

[13] Mariam Adawiah Dzulkifli and Muhammad Faiz Mustafar. 2013. The influence of colour on memory performance: A review. *The Malaysian journal of medical sciences : MJMS*. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3743993/#:~:text=Colour%20helps%20us%20in%20memorizing,permanent%20memory%20storage%20(18)

[14] Github. Configuring a publishing source for your GitHub pages site. *GitHub Docs*. Retrieved from https://docs.github.com/en/pages/getting-started-with-github-pages/configuring-a-publishing-source-for-your-github-pages-site

[15] Grammarly. Free ai writing assistance. *Grammarly*. Retrieved from https://www.grammarly.com/

[16] Aleksander Groth and Daniel Haslwanter. 2016. Efficiency, effectiveness, and satisfaction of responsive mobile tourism websites: A mobile usability study. *Information Technology & Tourism* 16, 2 (2016), 201–228.

[17] Simone Herrlinger, Tim N Höffler, Maria Opfermann, and Detlev Leutner. 2017. When do pictures help learning from expository text? Multimedia and modality effects in primary schools. *Research in Science Education* 47, (2017), 685–704.

[18] Indeed. *29 website features to impress your audience | indeed.com UK*. Retrieved from `https://uk.indeed.com/career-advice/career-development/website-features`

[19] Jamie Juviler. 2023. Website mockup: What is it and how to make one in 4 + steps. *HubSpot Blog*. Retrieved from `https://blog.hubspot.com/website/website-mockup#:~:text=They%20are%20important%20because%20they,aligned%20on%20the%20final%20product.`

[20] LaGarrett J King. 2017. The status of black history in US schools and society. *Social Education* 81, 1 (2017), 14–18.

[21] MozDevNet. Beginner's guide to media queries - learn web development: MDN. *MDN Web Docs*. Retrieved from `https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Media_queries`

[22] OpenText. What is functional testing? Types & examples. *OpenText*. Retrieved from `https://www.opentext.com/what-is/functional-testing#:~:text=is%20Functional%20Testing%3F-,Overview,with%20the%20end%20user's%20expectations`

[23] Derecka Purnell. 2023. America has a history of banning black studies. We can learn from that past | derecka purnell. *The Guardian*. Retrieved from `https://www.theguardian.com/commentisfree/2023/feb/14/african-american-studies-history-repression-resistance-republicans`

[24] Cathy Rainone. 2020. The humanity of blackness' missing from history classes: How to transform black history education in schools. *NBC 10 Philadelphia* (2020).

[25] Cathy Rainone. 2020. "The humanity of blackness" missing from history classes: How to transform black history education in schools. *NBC10 Philadelphia*. Retrieved from https://www.nbcphiladelphia.com/news/national-international/how-to-transform-black-history-education-in-schools/2450465/

[26] Jennifer Niederst Robbins. 2012. *Learning web design: A beginner's guide to HTML, CSS, JavaScript, and web graphics*. " O'Reilly Media, Inc.".

[27] James C Rollins. 2013. *From the curse of willie lynch to the new african american generation*. Trafford on Demand Pub.

[28] Sabine Schlag, Mareike Florax, and Rolf Ploetzner. 2007. The use of learning strategies in learning from text and pictures. *Frontiers in Artificial Intelligence and Applications* 162, (2007), 331.

[29] Kate Shuster. 2018. Teaching hard history. *Southern Poverty Law Center* (January 2018). Retrieved from https://www.splcenter.org/20180131/teaching-hard-history

[30] Smithsonian. National museum of african american history & culture. *A People's Journey, A Nation's Story | National Museum of African American History and Culture*. Retrieved from https://nmaahc.si.edu/

[31] Fabio Staiano. 2022. *Designing and prototyping interfaces with figma: Learn essential UX/UI design principles by creating interactive prototypes for mobile, tablet, and desktop*. Packt Publishing Ltd.

[32] Jamila Taylor and BlackPast. 2024. Welcome to blackpast •. •. Retrieved from https://www.blackpast.org/

[33] techopedia. *What is a hyperlink? - definition from Techopedia*. Retrieved from https://www.techopedia.com/definition/5175/hyperlink

[34] w3c. HTML5. *4.10.7 The input element - HTML5*. Retrieved from https://www.w3.org/TR/2010/WD-html5-20101019/the-input-element.html#:~:text=The%20input%20element%20represents%20a,It%20is%20an%20enumerated%20attribute

[35] w3schools. *CSS Media Queries*. Retrieved from https://www.w3schools.com/css/css3_mediaqueries.asp

[36] Amanda Graham Writer. 2023. Website features: 10 features your website needs. *Website Builder Expert*. Retrieved from https://www.websitebuilderexpert.com/building-websites/website-features/#:~:text=They%27re%20okay%20on%20their,and%20guide%20your%20site%20visitors.