

COUNTRY CHORUS: CANCER AWARENESS WEBSITE

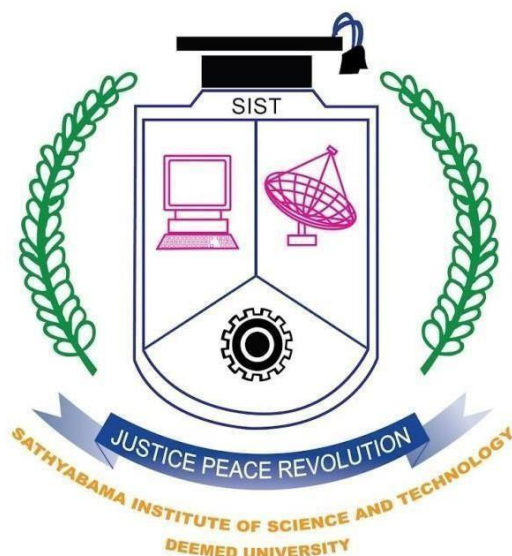
Submitted in partial fulfillment of the requirements for the award of Bachelor of Technology
in Biotechnology

Interdisciplinary project

By

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**DEPARTMENT OF BIOTECHNOLOGY
SCHOOL OF BIO AND CHEMICAL ENGINEERING
SATHYABAMA**

**INSTITUTE OF SCIENCE AND TECHNOLOGY
CATEGORY -1 UNIVERSITY BY UGC**

**Accredited with grade “A++” by NAAC | 12 B Status by UGC | Approved by AICTE
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MAY 2024



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

CATEGORY-I UNIVERSITY BY UGC

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **Ancy A (41230008)**, **Sweetha P (41230066)** who carried out the project entitled **COUNTRY CHORUS: CANCER AWARENESS WEBSITE** under our supervision from **January 2024 to April 2024**.

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Submitted for Viva Voice Examination held on 06-05-2024

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DECLARATION

We, **Ancy A (41230008)**, **Sweetha P (41230066)**, hereby declare that the Project Report **COUNTRY CHORUS: CANCER AWARENESS WEBSITE** done by us under the guidance of **Ms. S. Haritha, M.Tech Assistant professor**, at Sathyabama Institute of Science and technology is submitted in partial fulfilment of the requirements for the award of Bachelor of Technology in Biotechnology.

DATE: 06-05-2024



PLACE: CHENNAI

SIGNATURE OF THE STUDENT

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ABSTRACT

Despite decades of basic and clinical research and trials of promising new therapies, cancer remains a major cause of morbidity and mortality. Cancer is a complex group of diseases characterized by the abnormal and uncontrolled growth of cells in the body. Normally, cells grow and divide in a regulated manner to replace old or damaged cells, but in cancer, this process goes awry. The abnormal cells continue to grow and divide uncontrollably, forming tumors or invading nearby tissues and organs. Additionally, cancer cells can spread to other parts of the body through the bloodstream or lymphatic system, a process known as metastasis.

Cancer remains a significant global health challenge, particularly impacting rural communities where awareness is often low due to barriers like limited healthcare access, cultural stigma, and economic constraints. To address these challenges, our project focuses on developing a voice driven website tailored for rural populations. This platform provides intuitive navigation and comprehensive cancer information, empowering individuals with limited literacy to access vital resources effortlessly. By integrating interactive multimedia and localized content, our goal is to engage and empower rural communities, promoting early detection and proactive health-seeking behaviors. Through iterative development and user feedback, we aim to create a scalable solution capable of reducing cancer related morbidity and mortality rates in underserved regions.

Keywords: abnormal and uncontrolled growth, metastasis, tailored for rural population, tumors, underserved regions, voice driven website.

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LIST OF ABBREVIATIONS

CSS	Cascading Style Sheets
HTML	Hypertext Markup Language

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CHAPTER 1

INTRODUCTION

The history of cancer actually begins much earlier. The world's oldest documented case of cancer hails from ancient Egypt in 1500 BC. The details were recorded on papyrus, documenting eight cases of tumors occurring on the breast. Although, Cancer is not new and has been prevalent for many centuries there are many people who don't have awareness about it. How many of us know that India is the world's cancer capital? So, we hope our website will help in creating awareness. First let's delve in and see what is cancer (Guy Faguet., 2015).

1.1. CANCER:

Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body. Cancer can start almost anywhere in the human body, which is made up of trillions of cells. Normally, human cells grow and multiply (through a process called cell division) to form new cells as the body needs them. When cells grow old or become damaged, they die, and new cells take their place. Sometimes this orderly process breaks down, and abnormal or damaged cells grow and multiply when they shouldn't. These cells may form tumors, which are lumps of tissue. Tumors can be cancerous or not cancerous (benign).

Cancerous tumors spread into, or invade, nearby tissues and can travel to distant places in the body to form new tumors (a process called metastasis). Cancerous tumors may also be called malignant tumors. Many cancers form solid tumors, but cancers of the blood, such as leukemias, generally do not. Benign tumors do not spread into, or invade, nearby tissues. When removed, benign tumors usually don't grow back, whereas cancerous tumors sometimes do. Benign tumors can sometimes be quite large, however. Some can cause serious symptoms or be life threatening such as benign tumors in the brain. (Akulapalli Sudhakar.,2009)

TYPES OF TUMORS



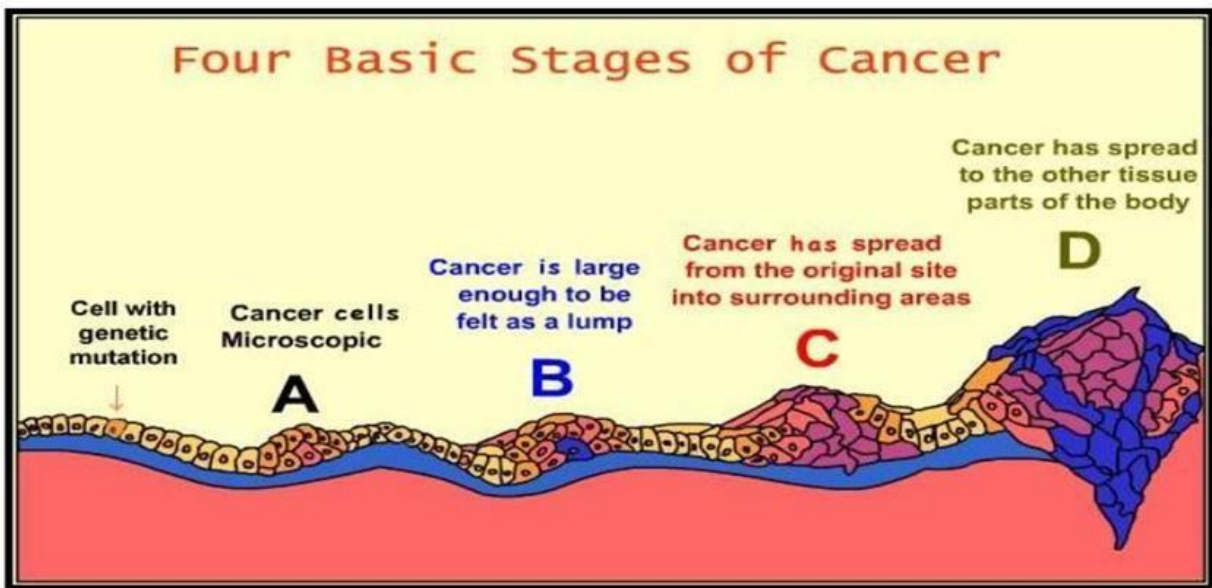
Benign tumor

Malignant tumor

Premalignant tumor

Tumor formation

Cancer Development



Four basic stages of cancer

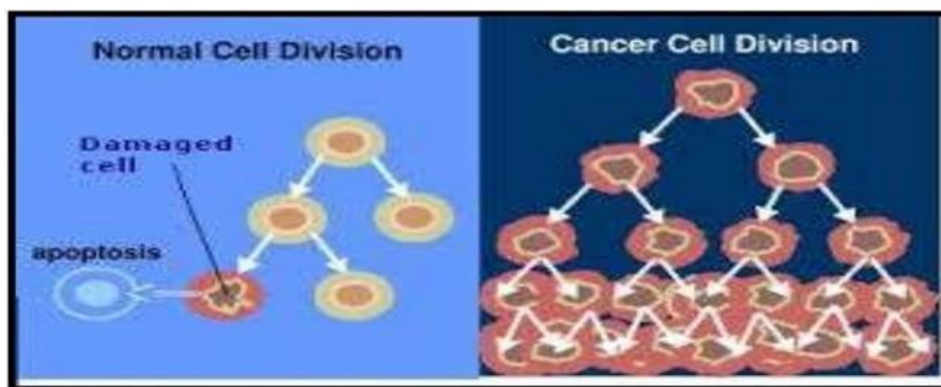


Figure 1.1.1: Cell division leading to Cancer formation

Table 1.1: Difference between Cancer Cells and normal Cells

CANCER CELLS	NORMAL CELLS
BASED ON MORPHOLOGY	
Small cytoplasm	Large cytoplasm
Multiple nuclei	Single nuclei
Multiple and large nucleoli	Single nucleolus
Coarse Chromatin	Fine chromatin
BASED ON FUNCTIONS	
They grow in the absence of cell signals and ignore those signals which tell them to die i.e. apoptosis.	Normal cells only grow when they receive signals.
Cancer cells invade to nearby areas and spread to other parts of the body.	Normal cells stop growing when they encounter other cells and most normal cells do not move around the body
Instructs blood vessels to grow towards tumors and these blood vessels supply oxygen and nutrients removing waste from tumor.	Blood vessels grow normally
Hides from immune system by presenting surface receptors similar to normal cells.	Does not hide from immune system.
Accumulate multiple changes in chromosomes such as duplications, deletions. Some cancer cells have double the amount of chromosome than normal cells.	Normal Chromosomes

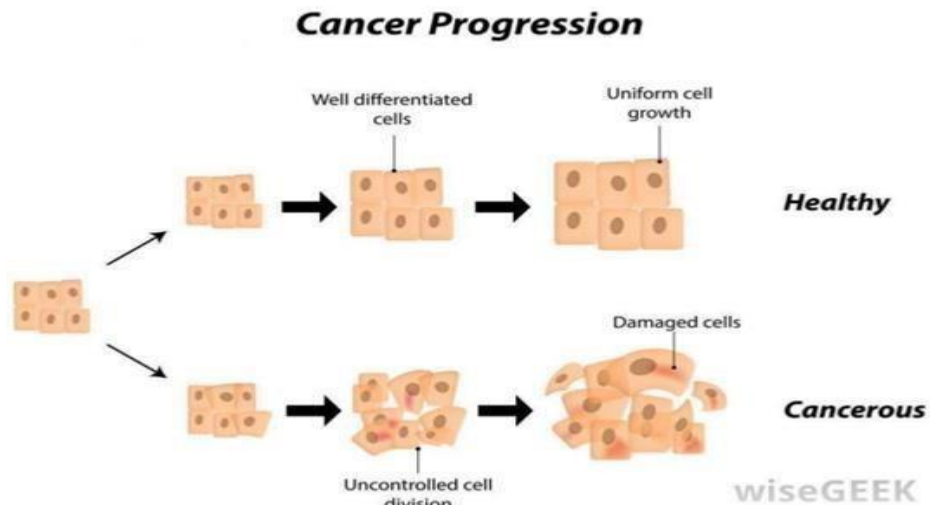


Figure 1.1.2: Cancer cell progression in individuals

1.2. HOW CANCER DEVELOPS?

Cancer can develop due to many reasons like

Genetics:

Certain inherited mutations in genes like BRCA1, BRCA 2 are risk factors of breast and ovarian cancer.

Physical and Chemical agents:

Involves inhaling asbestos, tobacco smoke. Certain material mainly like glass wool, rock wool, metallic cobalt, nickel, etc. due to their physical nature can cause cancer

Lifestyle:

Lifestyle factors like increased alcohol consumption, obesity, poor diet, hormonal imbalances can also lead to cancer.

Infection and inflammation:

Viral infections like HPV (Human papilloma virus) can lead to cervical cancer, bacteria and parasites increase the risk of cancer. Inflammation plays an important role in the development and progression of cancer.

The body normally eliminates cells with damaged DNA before they turn cancerous but the body's ability to do so goes down as we age. This is part of the reason why there is a higher risk of cancer later in life. Each person's cancer has a unique combination of genetic changes. As the cancer continues to grow, additional changes will occur. Even within the same tumor, different cells may have different genetic changes. (Ezio Laconi *et al.*, 2020)

1.3. TYPES OF CANCER:

There are more than 100 types of cancer. Types of cancer are usually name for the organs or tissues where the cancers form. For example, lung cancer starts in the lung, and brain cancer starts in the brain. Cancers also may be described by the type of cell that formed them, such as an epithelial cell or a squamous cell. Out of them we have taken the most impactful cancers

1. Breast Cancer
2. Lung Cancer
3. Prostate Cancer
4. Colorectal Cancer
5. Skin Cancer

(K Auxilia Preethi *et al.*, 2021)

1.4. WHY WE CHOSE THIS TOPIC?

Rural communities face unique challenges in accessing healthcare services and information due to geographical barriers, limited infrastructure, and socioeconomic constraints. This disparity is particularly evident in cancer awareness and prevention efforts, where lack of awareness often results in delayed diagnosis and inadequate treatment. Traditional approaches to disseminate information, such as pamphlets and posters, have limited reach and effectiveness in rural settings. Therefore, there is an urgent need for innovative solutions that can transcend these barriers and empower rural populations with accurate and accessible cancer-related information.

(Mohammad Al Qadire., 2018)

1.5 PROJECT OVERVIEW:

Our Voice Navigation Website represents a paradigm shift in cancer awareness, offering tailored information and guidance to rural communities through intuitive voice-based interactions. The Voice Navigation Website for Cancer Awareness is a comprehensive platform designed to address the specific needs of rural communities. Utilizing the widespread availability of mobile phones, even in remote areas, the website provides a user-friendly interface accessible through voice commands. By speech recognition technologies, users can navigate through a wealth of information about cancer with ease, regardless of their literacy level or internet proficiency.

1.5.1. Prevention and Early Detection:

Prevention remains the cornerstone of effective cancer control, with lifestyle modifications and early detection playing pivotal roles in reducing cancer incidence and mortality. Education about risk factors, screening guidelines, and vaccination against cancer-causing viruses empowers individuals to take proactive steps towards reducing their cancer risk. In rural communities, however, awareness about preventive measures is often lacking, leading to missed opportunities for early intervention.

1.6. PROJECT FEATURES:

Basic Information: The website offers a wealth of knowledge about cancer, including its types, risk factors, and common misconceptions. Users can learn about the importance of early detection and the role of lifestyle factors in cancer prevention.

Symptoms and Diagnosis: information about the signs and symptoms of different types of cancer helps users recognize warning signs and seek medical attention. The website also guides users on the diagnostic process, including screening tests.

Treatment Options: Understanding available treatment modalities is crucial for informed decision-making. The website provides comprehensive information about various treatment options, including surgery, chemotherapy, radiation therapy, and immunotherapy, along with their potential side effects and outcomes.

Nutrition and Diet: Diet plays a significant role in cancer prevention and management. The website offers practical tips and dietary guidelines to promote a healthy lifestyle and reduce cancer risk.

Support Resources: Coping with cancer can be emotionally and psychologically challenging. So, we have included Survivor's story about various personalities affected by cancer.

Multimedia Content: Visual aids such as videos enhance user engagement and facilitate comprehension of complex medical concepts.

Offline functionality: To accommodate areas with limited internet connectivity, the website offers offline access to pre-downloaded content, ensuring uninterrupted access to vital information.

CHAPTER 2

LITERATURE REVIEW

The Cancer Research Data Commons (CRDC) program, established by the National Cancer Institute (NCI) since 2014, has significantly contributed to cancer research by creating a network of data commons. These data commons house a variety of cancer-related data, including genomic, proteomic, imaging, and clinical data. The goal is to facilitate data sharing among researchers involved in NCI-funded studies.

This review discusses a related dissertation on statistical methods for cancer research addresses adaptive Phase I/II clinical trial design and the identification of biomarkers relevant to cancer research. Specifically, it focuses on developing innovative trial designs for immunotherapy and drug combination therapy, as well as identifying biomarkers associated with the risk of severe complications during cancer therapy, such as sinusoidal obstruction syndrome (SOS) after hematopoietic cell transplantation (HCT).

(Zhining Wang *et al.*, 2024)

The study investigates the cost of cancer care for individuals in English prisons compared to those in the general population.

Findings:

Prison Population: 879 cancer diagnoses were identified in individuals in prison.

General Population: 4326 cancer diagnoses were identified in matched individuals from the general population.

Cost Comparison: The adjusted six month cost of cancer care was significantly lower for individuals in prison, primarily due to fewer outpatient attendances.

However, individuals diagnosed with cancer in prison had higher emergency care costs.

The total cost of care for individuals in prison was higher due to security escorts.

(Elizabeth A Davies., 2024).

From this article we have analyzed that CSS expert Lea Verou provides 47 undocumented techniques and tips to help intermediate-to advanced CSS developers devise elegant solutions to a wide range of everyday web design problems. Rather than

focus on design, CSS Secrets shows how to solve problems with code. A wealth of knowledge in Backgrounds and Borders Shapes Visual Effects Typography User Experience Structure and Layout Transitions and Animations.

(Lea Verou and Reilly Media., 2015)

The research paper discusses the utilization of various coding languages and software tools in website development, with a focus on creating self-designed websites using HTML, CSS, and JavaScript. The main objective is to develop unique and highly optimized websites suitable for online business activities such as shopping, blogging, and digital marketing.

(Jaya Chitra *et al.*, 2020)

From this article we have analyzed two major contents they are HTML5 Semantic Markup: Frain emphasizes the use of semantic HTML elements to structure web content in a meaningful way, improving accessibility and SEO and CSS Flexbox and Grid: Frain explores the power of CSS Flexbox and Grid layout techniques for creating complex and responsive page layouts with ease

(Ben Frain., 2022)

Casabona, an experienced web developer and educator, presents the fundamental concepts of web development in a visual and step-by-step format, making it easy for readers to grasp the core principles. Casabona provides clear explanations, accompanied by screenshots and code examples, to help readers understand how HTML and CSS work together to create compelling web pages. Casabona not only explains the theory behind HTML and CSS but also demonstrates how to apply these concepts in real-world projects. Readers can learn essential skills such as creating web forms, styling text and images, and building responsive layouts that adapt to different screen sizes.

Furthermore, the Visual QuickStart format makes it easy for readers to find the information they need quickly. The book is designed for both self-paced learning and reference, with concise explanations and visual aids that facilitate comprehension.

(Joe Casabona., 2020)

CHAPTER 3

AIM AND OBJECTIVE

3.1. AIM

The aim of our project is to revolutionize cancer awareness and support in rural communities by developing an innovative website with voice navigation capabilities. Through this accessible platform, we aim to empower individuals, regardless of their technological proficiency or literacy level, to easily access comprehensive information about cancer prevention, treatment options, and supportive resources. By leveraging cutting-edge technology and user-centered design, our project seeks to bridge the gap in cancer education and support, ultimately striving for a future where every individual has the knowledge and tools to effectively navigate their cancer journey

3.2. OBJECTIVE

- Develop a user-friendly website interface optimized for voice navigation to cater to illiterate individuals in rural areas.
- Curate comprehensive and culturally relevant information on cancer prevention, detection, treatment, and support resources.
- Integrate voice recognition technology to enable seamless interaction with the website solely through voice commands.
- Ensure linguistic diversity by translating content into local languages and dialects prevalent in rural communities.
- Collaborate with local stakeholders to promote the website and conduct outreach activities within rural communities.
- Monitor website traffic, user engagement metrics, and feedback to evaluate effectiveness and identify areas for improvement
- Provide links and resources to connect users with local healthcare services, clinics and support groups.

CHAPTER 4

MATERIALS AND METHODS

4.1. SOFTWARES USED

4.1.1.VISUAL STUDIO

In our project we have used Visual studio to create code for the website. This platform helps combine different languages hence we have combined html, java script, etc.

Visual Studio is an integrated development environment (IDE) developed by Microsoft. It provides a comprehensive set of tools and features for building various types of software applications, including web applications, desktop applications, mobile apps, cloud-based services, and games. Visual Studio offers a powerful code editor with features like syntax highlighting and supports multiple programming languages, including C#, Visual Basic .NET, C++, F#, Python, JavaScript, TypeScript, and more

4.1.2. CSS

In this project, we leverage CSS software to enhance the visual appeal and aesthetics of our application. CSS enables us to creatively manipulate backgrounds, colors, and other visual elements, ensuring a visually engaging and cohesive user experience. By incorporating CSS into our methodologies, we elevate the overall design aesthetics and user interface, contributing to the project's success and user satisfaction.

METHODOLOGY

CSS stands for Cascading Style Sheets. It is a style sheet language used to define the presentation and layout of HTML documents, including colors, fonts, spacing, and positioning of elements on a web page. CSS allows web developers to control the appearance of their web pages and create visually appealing designs.

Separation of Content and Presentation: CSS separates the content of a web page (defined in HTML) from its presentation. This separation makes it easier to maintain and update the design of a website without altering its underlying content.

Style Rules: CSS consists of style rules that define how HTML elements should be displayed. A style rule typically consists of a selector (which specifies the HTML element) and one or more declarations (which define the style properties and values).

Selectors: Selectors are patterns used to select the elements to which a style rule applies. Selectors can target specific HTML elements, classes, IDs, or other attributes.

Properties and Values: CSS properties define the visual aspects of an element, such as color, font size, margin, padding, and border. Each property is assigned a value that determines its appearance.

Cascading: CSS uses a cascading mechanism to determine the final styles applied to an element. Styles can be inherited from parent elements, overridden by more specific rules, or applied based on the order of precedence.

External, Internal, and Inline Styles: CSS can be applied to HTML documents in three ways: externally (using an external style sheet file referenced in the HTML document), internally (using a <style> element within the HTML document), or inline (using the style attribute directly within HTML elements).

4.1.3. HTML

In our project, HTML serves as the foundational building block for creating webpages and organizing our content. By harnessing the power of HTML, we structure and present our information in a clear, accessible, and standardized format. HTML's versatility allows us to seamlessly integrate various types of content, including text, images, multimedia elements, and interactive components, ensuring an engaging and cohesive user experience.

USE:

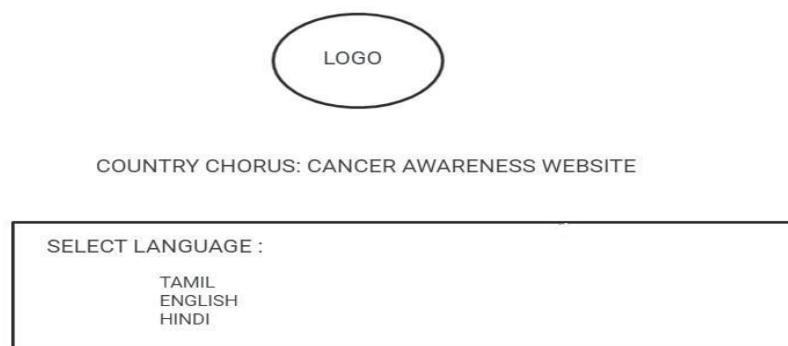
HTML, or Hypertext Markup Language, is the standard language for creating and structuring web pages. It uses tags to define content elements like headings, paragraphs, links, and images. HTML provides the basic structure of a webpage and is essential for web development.

4.1.4 JAVASCRIPT

In our project, JavaScript serves as the dynamic backbone, enabling advanced functionality such as voice navigation. It is a versatile programming language commonly used for web development. By harnessing the power of JavaScript, we empower users to interact with our application using voice commands, enhancing accessibility and user experience. JavaScript's versatility and interactivity elevate the project's capabilities, providing a seamless and intuitive interface for users to navigate and engage with our content effectively. It's widely supported by web browsers and is essential for creating modern, engaging web experiences.

4.2. METHODOLOGY:

PAGE 1:



LOGO

COUNTRY CHORUS: CANCER AWARENESS WEBSITE

SELECT LANGUAGE :

TAMIL
ENGLISH
HINDI

Figure 4.2.1: The logo page of our idea for the website

PAGE 2:

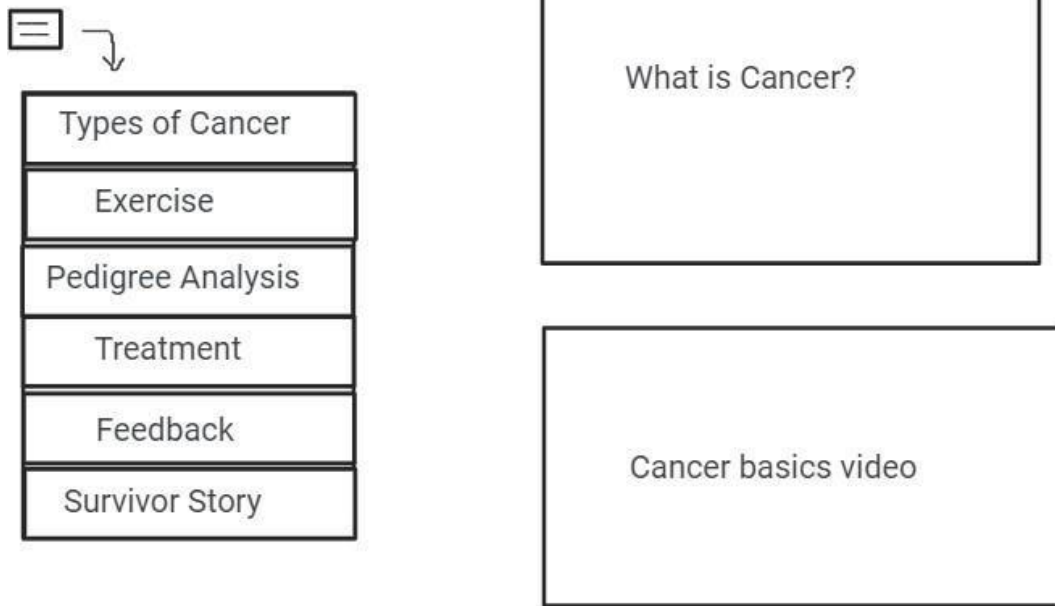


Figure 4.2.2: Main page of idea used in the website

PAGE 3:

TYPES OF CANCER

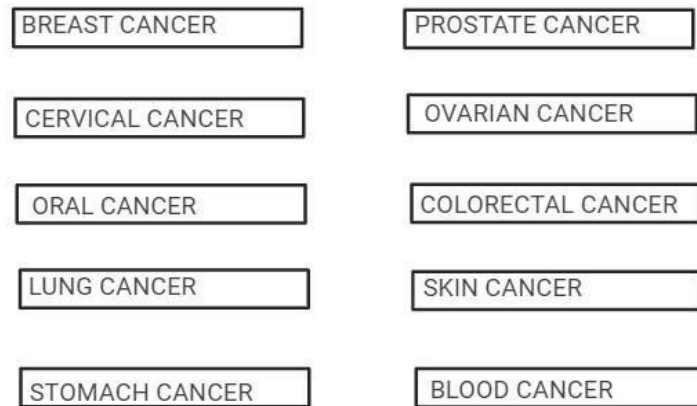


Figure 4.2.3: Outline of types of cancer to be included in website

PAGE 3 A:

BREAST CANCER

definition

Symptoms

Self examination

prevention

causes

Figure 4.2.4: Breast Cancer Slide

PAGE 4 :

EXERCISE :

General exercise

Specific exercise

Figure 4.2.5: Exercise slide to be added in website

PAGE 5:

PEDIGREE ANALYSIS

VIDEOS

Figure 4.2.6: Pedigree analysis Slide

PAGE 6 :

TREATMENT

major treatments

specific

Figure 4.2.7: Treatment slide to be added in website

PAGE 7 :

FEEDBACK:

descripton

video

Google form link

Figure 4.2.8: Feedback slide

PAGE 8 :

SURVIVOR STORY

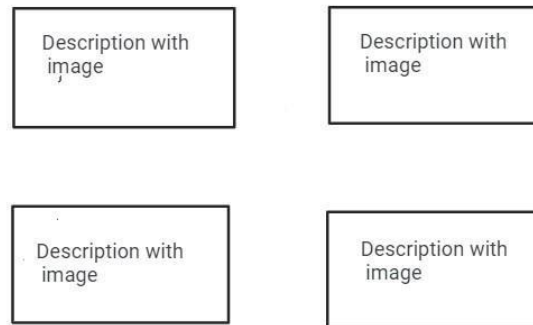


Figure 4.2.9: Survivor Story

Project Setup

Open Visual Studio: Launch Visual Studio and create a new project.

Select Project Template: Choose a suitable web development template such as ASP.NET Core Web Application.

Choose Web Application: Select the Web Application template and proceed.

Designing the Website:

UI Design: Using HTML, CSS, and JavaScript to design the website's user interface. Focusing on creating an intuitive layout with clear navigation elements.

Accessibility: Ensuring the website design follows accessibility standards to accommodate users with disabilities, including those who may rely on voice navigation.

Implementing Voice Navigation:

Integration with Voice Recognition API: Choosing a suitable voice recognition API or library (e.g., Web Speech API) to enable voice navigation.

Voice Commands: Define voice commands for navigating the website, such as "About cancer".

Feedback Mechanism: Providing auditory feedback to users to confirm successful recognition of voice commands and execution of navigation actions.

Content Development:

Cancer Awareness Information: Gathered comprehensive information about different types of cancer, symptoms, risk factors, prevention measures, treatment options, and support resources from articles and official databases.

Content Organization: Structured the content logically into sections and sub-sections for easy navigation.

Multimedia Integration: Incorporating multimedia elements such as videos to enhance engagement and understanding.

Testing and Refinement:

Testing Voice Navigation: Thorough testing of voice navigation features across different devices and browsers to ensure compatibility and reliability.

User Feedback: Gather feedback from users, including individuals affected by cancer, to identify any usability issues or areas for improvement.

By following these steps and leveraging Visual Studio's development environment, we created a cancer awareness website with voice navigation that effectively educates and supports users in navigating the complexities of cancer.

4.3. GENERAL CODE USED IN PROJECT

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Breast Cancer Information</title>
  <style>
    /* Add your CSS styles here */
    body {
      font-family: Arial, sans-serif;
      margin: 0;
      padding: 0;
    }

    header {
      background-color: #007bff;
      color: #fff;
      padding: 20px;
      text-align: center;
    }

    main {
      padding: 20px;
    }
  </style>
</head>
<body>
  <div class="header">
    <h1>Breast Cancer Information</h1>
  </div>
  <div class="main">
    <div class="text">
      <p>Breast cancer is a common type of cancer that starts in the breast tissue. It can spread to other parts of the body if not treated early. Early detection and treatment can significantly improve outcomes. For more information, please consult a healthcare professional.</p>
    </div>
    <div class="image">
      <img alt="Illustration of a woman's chest with a red heart symbol, representing breast health." data-bbox="100 400 400 600"/>
    </div>
    <div class="text">
      <p>If you are experiencing any symptoms or have concerns about your breast health, please contact your doctor immediately. Regular breast exams and mammograms are essential for early detection.</p>
    </div>
  </div>
</body>
</html>
```

```
h2 {  
    color: #007bff;  
}  
  
.accordion {  
    background-color: #f4f4f4;  
    color: #333;  
    cursor: pointer;  
    padding: 20px;  
    width: 100%;  
    text-align: left;  
    border: none;  
    outline: none;  
    transition: 0.4s;  
    border-bottom: 1px solid #ddd;  
}  
  
.active, .accordion:hover {  
    background-color: #ddd;  
}  
  
.panel {  
    padding: 0 20px;  
    display: none;  
    background-color: white;  
    overflow: hidden;
```

```

        overflow: hidden;
        border-bottom: 1px solid #ddd;
    }

    /* Add more styles as needed */
</style>
</head>
<body>
    <header>
        <h1>Breast Cancer Information</h1>
    </header>
    <main>

        <button class="accordion" onclick="togglePanel(this)">What is Breast Cancer?</button>
        <div class="panel">
            <p>The cancer that most commonly develops in cells from the lining of milk ducts and the lobules that supply the ducts with milk. It can occur in both men and women, but it is much more common in women.

            In addition , there are more than 18 other sub - types of breast cancer. Some cancers develop from pre - invasive lesions such as ductal carcinoma in situ.
            </p>
        </div>

        <button class="accordion" onclick="togglePanel(this)">Signs and SYMPTOMS</button>
        <div class="panel">
            <p>A lump in the breast - the most common first sign.
            <li>1) the lump may feel it is attached to the skin or chest wall and cannot be moved.</li>
            <li>2) The lump may feel hard , irregular in shape and very different from the rest of the breast</li>
            tissue.</p>
            <p>Breast cancer is a type of cancer that forms in the cells of the breasts. It is one of the most common cancers among women worldwide.</p>
        </div>
        <h2>Skin Changes</h2>
        <ul>
            <li>1) The skin of the breast may become dimpled or puckered.</li>
            <li>2) Redness, swelling and increased warmth may be a sign of inflammatory breast cancer.</li>
            <li>3) A lump in the armpit (axilla).</li>
            <li>4) Sometimes small, hard lumps in the armpit may be a sign that breast cancer has spread to the lymph nodes. Although these lumps are often painless, they may be tender.</li>
            <li>• A change in breast shape</li>
            <li>• Dimpling of the skin</li>
            <li>• Fluid from nipple</li>

        </ul>
        </div>
        <button class="accordion" onclick="togglePanel(this)">Risk factors</button>
        <div class="panel">
            <li>• Genetics</li>
            <li>• Lack of childbearing or lack of breastfeeding</li>
            <li>• Higher levels of certain hormones</li>

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<li>ü Higher levels of certain hormones</li>
<li>ü Certain dietary patterns</li>
<li>ü Obesity</li>
<li>ü Exposure to light pollution</li>
</div>

<h2>Genetics</h2>
<p>In those with a first degree relative with the disease the risk of breast cancer between the age of 40 and 50 is double that of the general population.</p>
<p>In less than 5% of cases, genetics plays a more significant role by causing a hereditary breast - ovarian cancer syndrome.</p>

<h2>Medical Condition</h2>
<p>Breast changes found in benign breast conditions such as fibrocystic breast changes, are correlated with an increased breast cancer risk. Diabetes mellitus might also increase the risk of breast cancer.
</p>
<button class="accordion" onclick="togglePanel(this)">DIAGNOSIS</button>
<div class="panel">

<ul>
<li>ü These include: clinical and self-breast exams, mammography, genetic screening, ultrasound, and magnetic resonance imaging.
</li>
<li>ü A clinical or self-breast exam involves feeling the breast for lumps or other abnormalities. Clinical breast exams are performed by health care providers, while

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</li>
<li>ü A clinical or self-breast exam involves feeling the breast for lumps or other abnormalities. Clinical breast exams are performed by health care providers, while self-breast exams are performed by the person themselves.
</li>
<li>ü Mammographic screening for breast cancer uses X-rays to examine the breast for any uncharacteristic masses or lumps. During a screening, the breast is compressed and a technician takes photos from multiple angles. A general mammogram takes photos of the entire breast, while a diagnostic mammogram focuses on a specific lump or area of concern</li>
</ul>
</div>

<button class="accordion" onclick="togglePanel(this)">medications</button>
<div class="panel">
<ul>
<li>Drugs used after and in addition to surgery are called adjuvant therapy. Chemotherapy or other types of therapy prior to surgery are called neoadjuvant therapy. Aspirin may reduce mortality from breast cancer.</li>
<li>There are currently three main groups of medications used for adjuvant breast cancer treatment: hormone-blocking agents, chemotherapy and monoclonal antibodies.
</li>
</ul>
</div>
<button class="accordion" onclick="togglePanel(this)">Chemotherapy</button>
<div class="panel">
<p>Chemotherapy is predominantly used for cases of breasts cancer in stages 2-4, and is

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Chemotherapy is predominantly used for cases of breasts cancer in stages 2-4, and is particularly beneficial in estrogen receptor-negative (ER-) disease, the chemotherapy medications are administered in combinations, usually for periods of 3 – 6 months. Most chemotherapy medications work by destroying and /or fast-replicating cancer cells, either by causing DNA damage upon replication or by other mechanisms.

SURGERY

ü Surgery involves the physical removal of the tumour, typically along with some of the surrounding tissue. One or more lymph nodes may be biopsied during the surgery: increasingly the lymph node sampling is performed by a sentinel lymph node biopsy

ü Standard surgeries include:

MASTECTOMY:

Removal of the whole breast.

QUADRANTECTOMY:

Removal of one quarter of the breast.

LUMPECTOMY:

Removal of a small part of the breast.

ü Once the tumour has been removed, if the patient desires, breast reconstruction surgery, a

ü Once the tumour has been removed, if the patient desires, breast reconstruction surgery, a type of plastic surgery, may then be performed to improve the aesthetic appearance of the treated site. Alternatively, women use breast prostheses to stimulate a breast under clothing, or choose a flat chest. Nipple/areola prostheses can be used at any time following the mastectomy.

PREVENTION:

1. Regular breast cancer screening:

ü Early detection through regular mammograms, clinical breast exams, and breast self-exams can help detect breast cancer at an early stage when it is most treatable.

2. Healthy lifestyle choices:

ü Adopting a healthy lifestyle, including maintaining a healthy weight, being physically active, limiting alcohol consumption, and avoiding smoking, can help reduce the risk of breast cancer.

3. Breastfeeding:

ü Breastfeeding may help reduce the risk of breast cancer, especially if done for a longer duration.

4. Genetic counseling and testing:

ü Individuals with a strong family history of breast cancer or known genetic mutations associated with the disease may benefit from genetic counseling and testing to assess their risk and make informed decisions about screening and prevention strategies.

5. Hormone therapy:

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        <li>Avoiding hormone replacement therapy (HRT) and oral contraceptives that
contain estrogen may help reduce the risk of breast cancer in certain women,
particularly those at higher risk.</li>

    <h2>SELF EXAMINATION FOR BREAST CANCER:</h2>
    
</main>
<footer>
    <p>&copy; Breast Cancer Awareness</p>
</footer>

<script>
    function togglePanel(element) {
        element.classList.toggle("active");
        var panel = element.nextElementSibling;
        if (panel.style.display === "block") {
            panel.style.display = "none";
        } else {
            panel.style.display = "block";
        }
    }
</script>
</body>
</html>

<script>

```

```

<script>
    function togglePanel(element) {
        element.classList.toggle("active");
        var panel = element.nextElementSibling;
        if (panel.style.display === "block") {
            panel.style.display = "none";
        } else {
            panel.style.display = "block";
        }
    }

    function togglePanel(element) {
        element.classList.toggle("active");
        var panel = element.nextElementSibling;
        if (panel.style.display === "block") {
            panel.style.display = "none";
        } else {
            panel.style.display = "block";
            speakText(panel.textContent);
        }
    }

    var recognition = new webkitSpeechRecognition() || new SpeechRecognition();
    recognition.lang = 'en-US';
    recognition.continuous = true;
    var isGuidanceEnabled = false;

    recognition.onresult = function(event) {
        var result = event.results[event.results.length - 1][0].transcript.toLowerCase();
        var result = event.results[event.results.length - 1][0].transcript.toLowerCase();
        if (!isGuidanceEnabled && result.includes("breast cancer")) {
            isGuidanceEnabled = true;
            speakText("Voice commands enabled. You can now say 'open what is breast cancer', 'open signs and symptoms', 'open skin changes', 'open Risk factors', 'open Genetics', 'open Medical Conditions', 'open Diagnosis', 'open medications', 'open chemotherapy', 'open surgery', 'open prevention', and so on to view information about breast cancer.");
            highlightCommands();
        } else if (isGuidanceEnabled) {
            if (result.includes("open what is breast cancer")) {
                togglePanel(document.querySelectorAll(".accordion")[0]);
            } else if (result.includes("open signs and symptoms")) {
                togglePanel(document.querySelectorAll(".accordion")[1]);
            } else if (result.includes("open skin changes")) {
                togglePanel(document.querySelectorAll(".accordion")[2]);
            } else if (result.includes("open Risk factors")) {
                togglePanel(document.querySelectorAll(".accordion")[3]);
            } else if (result.includes("open Genetics")) {
                togglePanel(document.querySelectorAll(".accordion")[4]);
            } else if (result.includes("open Medical Conditions")) {
                togglePanel(document.querySelectorAll(".accordion")[5]);
            } else if (result.includes("open Diagnosis")) {
                togglePanel(document.querySelectorAll(".accordion")[6]);
            } else if (result.includes("open medications")) {
                togglePanel(document.querySelectorAll(".accordion")[7]);
            } else if (result.includes("open chemotherapy")) {
                togglePanel(document.querySelectorAll(".accordion")[8]);
            } else if (result.includes("open surgery")) {
            }
        }
    }

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        }else if (result.includes("open chemotherapy")) {
            togglePanel(document.querySelectorAll(".accordion")[8]);
        }else if (result.includes("open surgery")) {
            togglePanel(document.querySelectorAll(".accordion")[9]);
        }else if (result.includes("open prevention")) {
            togglePanel(document.querySelectorAll(".accordion")[10]);
        }
    }
}

function highlightCommands() {
    var buttons = document.querySelectorAll(".accordion");
    buttons.forEach(function(button) {
        button.classList.add("active");
        setTimeout(function() {
            button.classList.remove("active");
        }, 2000); // Remove the highlight after 2 seconds
    });
}

function speakText(text) {
    var utterance = new SpeechSynthesisUtterance();
    utterance.text = text;
    utterance.volume = 1;
    utterance.rate = 1;
    utterance.pitch = 1;
    window.speechSynthesis.speak(utterance);
}

```

```

    }

    function speakText(text) {
        var utterance = new SpeechSynthesisUtterance();
        utterance.text = text;
        utterance.volume = 1;
        utterance.rate = 1;
        utterance.pitch = 1;
        window.speechSynthesis.speak(utterance);
    }

    function startListening() {
        recognition.start();
    }

    function stopListening() {
        recognition.stop();
    }

</script>
<button onclick="startListening()">Start Listening</button>
<button onclick="stopListening()">Stop Listening</button>
</body>
</html>

```

CHAPTER 5

RESULTS AND DISCUSSION

Our Cancer Awareness Website with Voice Navigation aims to provide a user-friendly platform for individuals. It utilizes advanced voice recognition technology to enable navigation, ensuring accessibility for users with limited web navigation skills. There is no need to download any Apps or high data content ensuring a simple and knowledgeable experience. Content is organized into easily digestible sections covering basic information, treatment options, causes, symptoms, exercise guidelines, and nutrition recommendations. Our website's objectives include improving accessibility, educating users about cancer, empowering informed decision-making, and fostering engagement. Overall, it represents a significant step towards democratizing access to vital cancer-related information and empowering individuals to confront cancer with confidence and resilience.

While the referenced study evaluates Automatic Speech Recognition (ASR) technologies for translating video content, our website utilizes HTML, CSS, and JavaScript to provide intuitive voice navigation for rural communities' cancer awareness. The study compares ASR tools like Google Cloud Speech-to-Text, Limecraft Transcriber, and VoxSigma, selecting Google Cloud for its extensive language support. In contrast, our website prioritizes user-friendly navigation and accessibility, offering a tailored platform for accessing comprehensive cancer information. While the study focuses on translation capabilities, our website's emphasis lies in delivering targeted content efficiently, catering specifically to rural populations' health education needs.

(Thomas K Houston *et al.*, 2016)

When comparing Google Translator with our website's voice navigation feature, we find distinctive differences in functionality and purpose. While Google Translator primarily focuses on translating text from one language to another, our website prioritizes providing comprehensive information and guidance on cancer awareness, specifically tailored for rural communities. While Google Translator offers voice assistance, it primarily relies on

user input for translation. In contrast, our website incorporates voice navigation, allowing seamless access to essential cancer-related information without the need for extensive user input. By prioritizing voice navigation, we aim to bridge the accessibility gap for rural populations, offering easy-to-navigate resources on cancer prevention and care. (Davies., 2019)

The image shows a web interface for language selection. At the top center is a circular logo with a colorful, abstract design. Below the logo, the text "Select a Language:" is displayed. Underneath, there is a label "Choose a language:" followed by a dropdown menu. The dropdown menu is open, showing the word "Tamil" as the selected option. Below the dropdown menu is a large blue button with the word "Submit" in white text.

Figure 5.1: The Logo page of our website

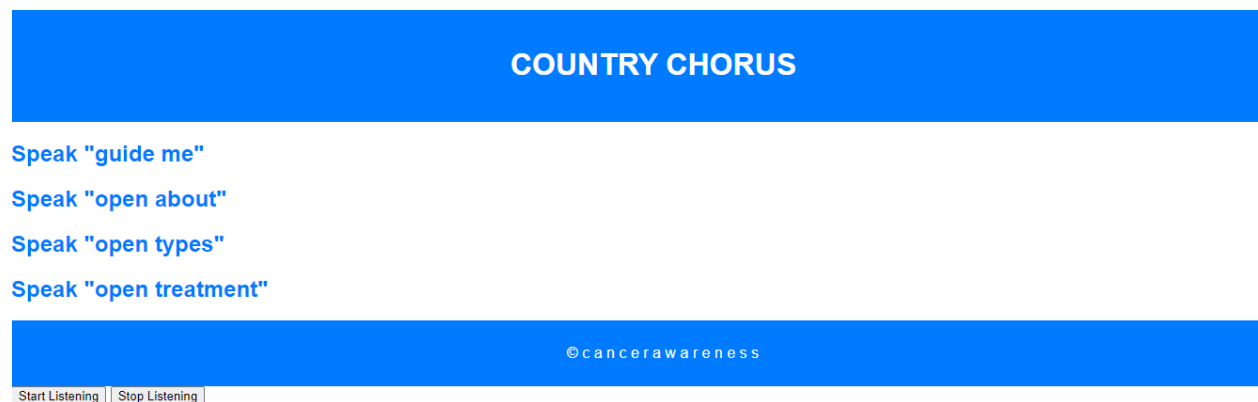
The image shows the main page of the website. It has a solid blue background. At the top, the text "COUNTRY CHORUS" is written in white, bold, uppercase letters. Below this, there are four lines of text in a lighter blue color: "Speak 'guide me'", "Speak 'open about'", "Speak 'open types'", and "Speak 'open treatment'". At the bottom of the page, there is a white footer area. In the center of the footer, the text "©cancerawareness" is displayed. Below the footer, there are two small buttons: "Start Listening" and "Stop Listening".

Figure 5.2: Main Page of our Website

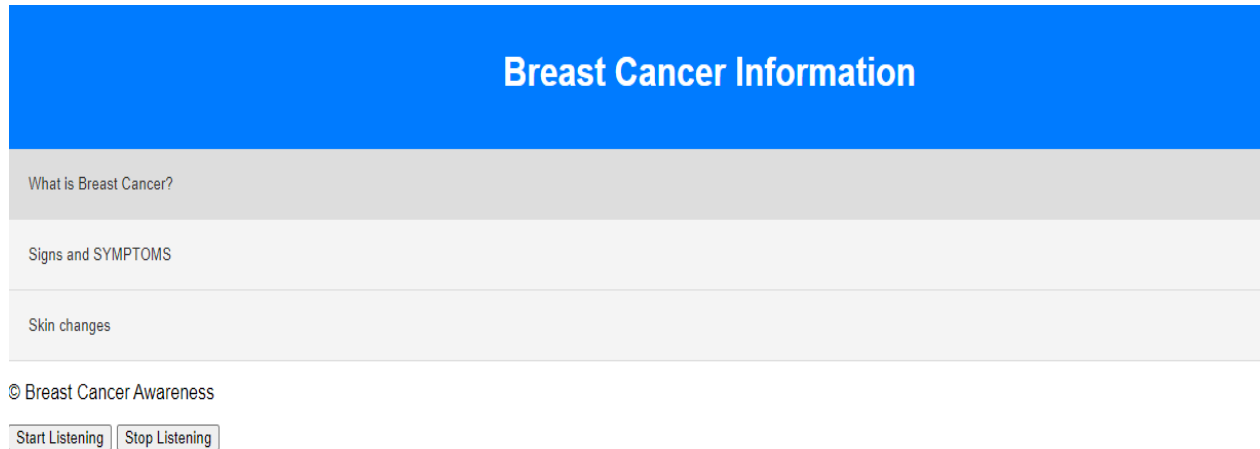


Figure 5.3: Breast Cancer Webpage

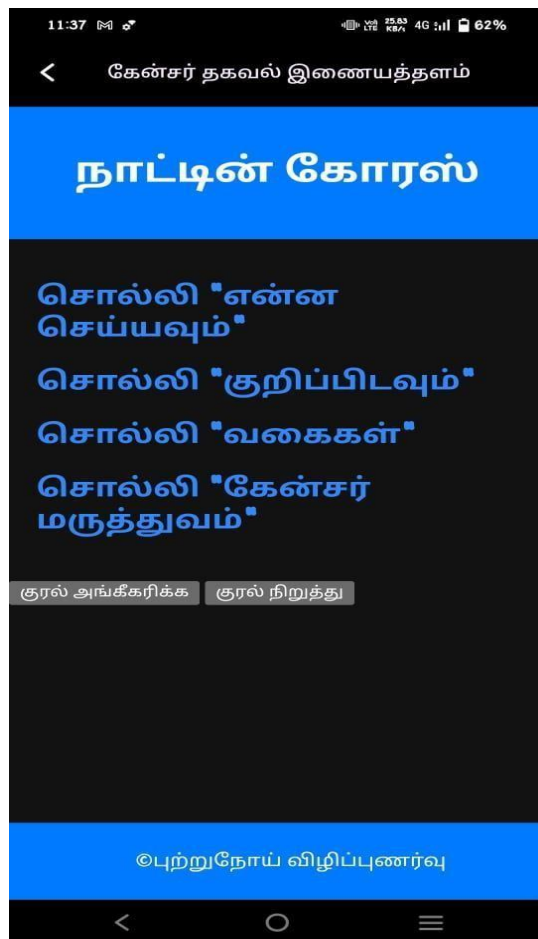


Figure 5.4: Tamil language webpage

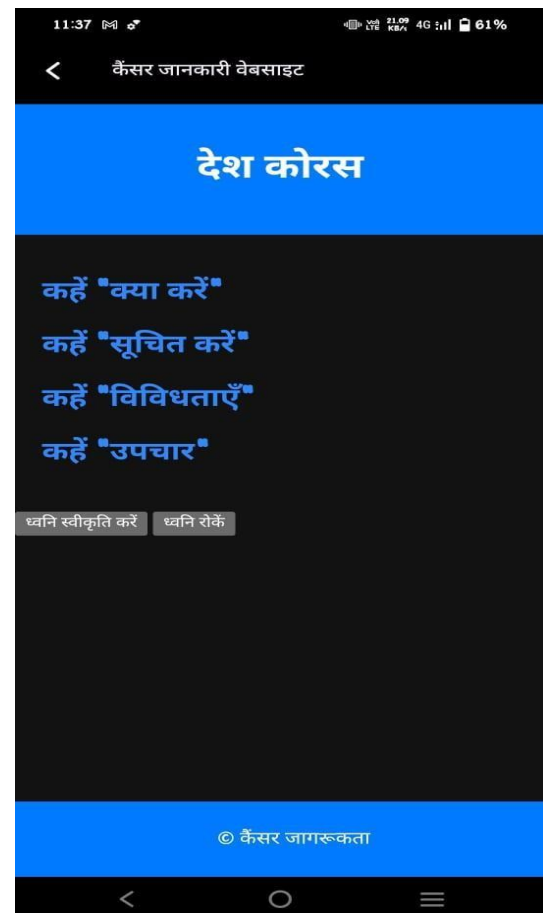


Figure 5.5: Hindi Language webpage

5.1. Role of Visual Studio in Development

Visual Studio, a comprehensive integrated development environment (IDE) provided by Microsoft, serves as the cornerstone of our development process.

5.1.1. Comprehensive Toolset

Visual Studio provides a diverse array of tools and features, encompassing code editing, debugging, testing, and project management functionalities. The unified nature of Visual Studio eliminates the need for developers to juggle multiple tools, ensuring a seamless and efficient development experience.

5.1.2. Increased Productivity

Advanced code editing features, such as IntelliSense and code refactoring, empower developers to write clean and efficient code with greater speed and accuracy.

Powerful debugging tools, including breakpoints, watch windows, and real-time diagnostics, facilitate the identification and resolution of software bugs, thereby enhancing productivity.

5.1.3. Rich Ecosystem

Visual Studio boasts a vibrant ecosystem of extensions, plugins, and third-party integrations available through the Visual Studio Marketplace. These resources enable developers to customize and extend the functionality of the IDE according to the specific requirements of our project, enhancing our development capabilities.

5.1.4. Seamless Collaboration

Integration with version control systems, such as Git, enables seamless collaboration among team members, facilitating code sharing, branching, merging, and code reviews within the IDE. Effective

collaboration enhances team coordination and accelerates the development cycle of our cancer awareness website.

5.1.5 Cross-platform Development

Visual Studio's support for cross-platform development allows us to target multiple platforms, including web, mobile, and desktop, with a single codebase. This capability ensures the accessibility of our website across various devices and platforms, maximizing its reach and impact.

5.1.6 Continuous Improvement

Microsoft regularly updates and enhances Visual Studio with new features, improvements, and bug fixes, ensuring that developers have access to the latest tools and technologies. By leveraging these continuous improvements, we can stay competitive in the ever-evolving landscape of software development and incorporate cutting-edge capabilities into our cancer awareness website.

5.2. Significance and Impact of Visual Studio

Visual Studio plays a pivotal role in empowering our development team to create an innovative and high-quality cancer awareness website with voice navigation functionality. By providing a user-friendly interface, robust development tools, and extensive customization options, Visual Studio accelerates our development process and enhances the overall quality and functionality of our website. Ultimately, the utilization of Visual Studio contributes to our mission of raising awareness about cancer and providing valuable resources and support to individuals affected by this disease.

CHAPTER 6

SUMMARY AND CONCLUSION

cancer awareness website features voice navigation capabilities. This innovative platform is designed to assist individuals who may struggle with traditional online search methods. By incorporating voice recognition technology, users can effortlessly navigate through various sections of the website simply by speaking commands. The website will cover a wide range of topics including basic information about cancer, treatment options, causes, symptoms, exercise regimes, nutritional guidance, and more. By providing accessible and user-friendly access to crucial information, your project aims to empower and support those affected by cancer in their journey towards better understanding and management of the disease.

In conclusion, our cancer awareness website with voice navigation represents a crucial step forward in spreading awareness about this pervasive disease. By providing accessible information and resources through voice-guided navigation, we aim to empower individuals to understand, prevent, and cope with cancer effectively. Through our project, we've emphasized the importance of early detection, lifestyle choices, and support systems in the fight against cancer.

Our website not only serves as a valuable resource for those directly affected by cancer but also for their loved ones and the broader community. By leveraging voice navigation technology, we've ensured inclusivity for users with varying abilities, making vital information available to all.

Moving forward, it's imperative to continue updating and expanding our website with the latest research, survivor stories, and support networks. Together, we can make strides in raising awareness, promoting prevention, and supporting those on their cancer journey. Let's stand united in the fight against cancer and strive for a future where no one has to face it alone.

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