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Interactive Display Device

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ABSTRACT: The creation of an interactive display device for use in colleges, universities, institutions, and classrooms as well as for business purposes across a range of industries. The initiative transformed the way we access and use information, becoming an essential component of our everyday life. The interactive display device, which is a customized digital device with speakers, peripherals, and an LED monitor covered in a sheet of reflective one-way display, offers some of the most basic amenities available, including memory, input, and output devices as well as network and input/output devices. The interactive display's touch and read/listen processing methods enable users to engage with simple commands, functions, and text and information listening.

KEYWORDS: HTML, CSS, JavaScript, LED Display.

I. INTRODUCTION

Interactive display devices have revolutionized the way we access and engage with information in the digital age, and have become an essential part of our daily life. These innovative gadgets have completely changed the way we work, learn, and pass the time. By developing a cutting-edge, intuitive, and educational interactive display device that skillfully bridges the gap between hardware and digital contents, our project seeks to elevate this interaction to a new level.

The way it works is that we will affix miniature screens and unique sensors to commonplace items or hardware parts. Touching or clicking on these things will cause the device to display pertinent information on the screen instantaneously. For example, a plant can tell you its name, how to care for it, and even a few interesting facts if you touch it. Alternatively, by selecting a tool, you can learn its purpose and safe usage methods. The real and digital worlds will be combined in our project. It functions as a bridge connecting actual objects to the internet. This gadget makes learning engaging, interactive, and hands-on. Long online searches and dull texts are over. Simply touch to get started.

With the aid of a stylus or their fingertips, consumers can now interact directly with a digital screen through the usage of touch screen display devices. These days, it's common to find these gadgets in laptops, tablets, cellphones, and public kiosks. Touch screens provide simple and effective ways to navigate, modify, and interact with digital content by doing away with the need for external input devices like keyboards and mice. They have completely changed the way we engage with technology, improving its usability and accessibility for people of all ages.

A wide variety of hardware and software solutions are combined into interactive display devices that allow people to engage with digital content in a static manner. These gadgets, which combine a variety of technologies to produce simple and interesting user experiences, include interactive touchscreen kiosks and digital displays. The integration of peripheral devices that go beyond conventional input, output, memory processing, and network devices is essential to their functionality.

Peripheral devices that allow users to interact with content in comprehensible and natural ways are the heart of interactive display devices. Through the act of bridging the divide between the digital and physical realms, touchscreens enable smooth navigation, content generation, and cooperative engagement.

Strong communication protocols and interoperability standards are necessary for the smooth integration of peripheral devices into interactive display devices. The Universal Serial Bus (USB) interface, which provides plug-and-play convenience and fast data transmission rates, is still widely used to link peripheral devices to interactive displays. The USB connectivity of the mouse guarantees compatibility and ease of use when connecting additional accessories

like keyboards.

Interactive display devices' peripheral device integration improves the user interface and experience, making interactions more accessible, interesting, and easy to use. With the use of touchscreens, users may engage directly with digital material, doing away with the need for additional input devices and making navigating intricate interfaces easier. Interactive displays facilitate collaborative interaction and simultaneous input from numerous users by supporting multi-touch gestures. This feature encourages creativity and teamwork in both educational and professional contexts.

Furthermore, the development of transparent screens and flexible display technology opens the door to interactive installations and readable content form factors that merge harmoniously with architectural settings. These cutting-edge display technologies can be used to create collaborative workspaces, immersive museum displays, or interactive stores.



II. EXISTING SYSTEM

- **ViewSonic Panel Interactive display Device**

By James Chu and viewsonic Corporation

Examine the whole selection of interactive display devices, including viewsonic panels that can be used at home or in a classroom to enhance digital and hybrid learning as well as remote learning. With these amazing interactive display technologies, users may increase productivity and efficiency whether they are generating, sharing, or managing digital content.

- **Touch and Display Integration with Force**

By kurth Reynold, Petr Shepelev, Arnulf Graf

- **5 Pen Pc Technology**

By Rose Mol Joy Dept of computer science, Carmel college mala Thrissur, India

- **Real Time Examples:**

- Railway ticket machine
- ATM machine
- Washing machine
- Touch Screen laptop



IV. NEED OF THIS PROJECT

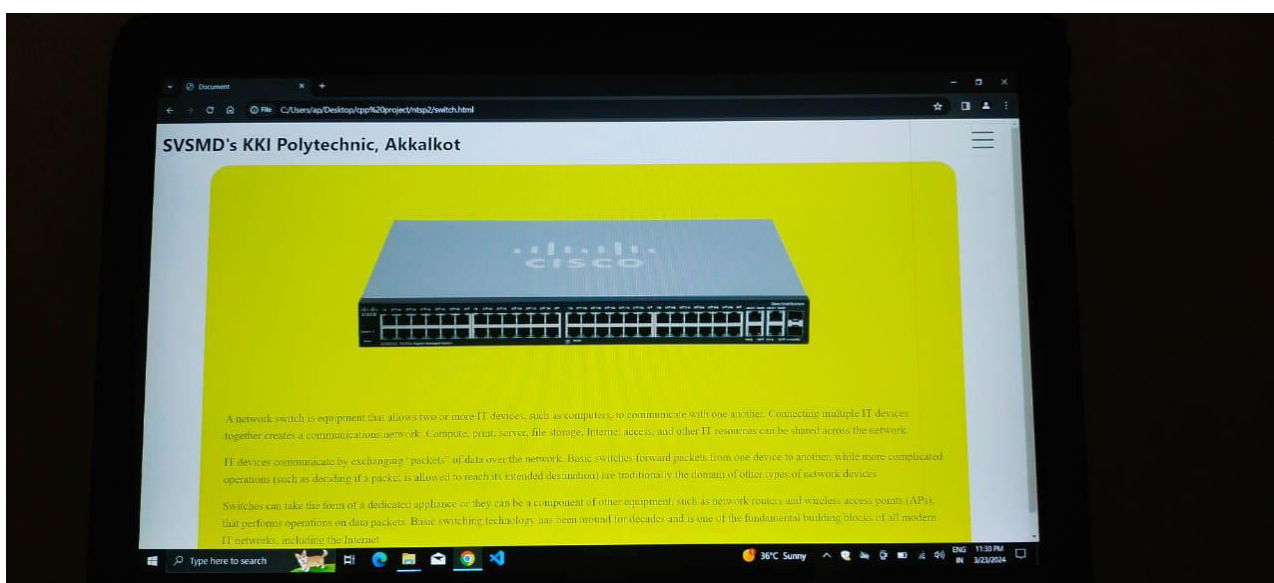
You are a first-year computer science student who is just starting out in the technological world. You have a strong desire to gain knowledge and insight into the fascinating field of computer systems and hardware components. An interactive display device project becomes an interesting and useful tool for you in this situation. Let's examine the reasons behind the importance of this project for first-year computing students. To summarize, there is a definite requirement for first-year computer students to complete an Interactive Display Device assignment. It gives students a realistic, interesting, and hands-on learning experience that helps them close the knowledge gap between theory and practice. This project encourages curiosity, teamwork, and problem-solving abilities—all of which are critical in the field of computer science. It lowers anxiety, makes learning enjoyable, and paves the way for future innovation. This project is more than just a tool for first-year computer students; it's a doorway to a world of fascinating technological possibilities.

V. PROPOSED SYSTEM

To develop hardware displays with interactive touch screens that provide an optimal and effective user experience. These displays are made to be able to adapt to changing needs of users in a variety of fields and applications, which will ultimately improve digital content interaction and productivity.

The interactive display device facilitates improved teamwork within our workforce. Its dynamic layout and effective touch-screen features encourage team members to actively participate, guaranteeing that different viewpoints are smoothly included into our project planning procedure. It improves our collective comprehension and recall of intricate ideas by enabling real-time content alteration and dynamic visualization, which promotes a more coherent and knowledgeable decision-making process. Its ability to accommodate multiple users and function with different software programs allows us to share insights, coordinate our efforts, and generate ideas, all of which contribute to a productive and cooperative work environment. All four team members always have access to the most recent and pertinent information because to the device's seamless connection with a variety of data sources and project management applications. This gives us the ability to make well-informed judgments and modify our planning tactics as necessary. Furthermore, its ability to produce interactive and aesthetically appealing presentations helps us to successfully explain our project's goals and tactics to stakeholders, encouraging participation and buy-in. All things considered, the interactive display gadget is a flexible and indispensable resource that helps our team plan, communicate, and work together efficiently, all of which contribute to the success of our group's projects.

This approach's primary goal is to enable students to easily access information from peripheral devices while engaging in daily activities like reading books and hanging out with friends. It is capable of operating on a basic display device, such as a smart touch screen tablet, and doesn't require a lot of processing power. Through an interface, consumers can engage with our application on our platform. Initially, using a menu on the screen, users can access content or information from a peripheral device by using a touchscreen put on top of our program. Second, users can use a web interface on their mobile devices, which can read material and retrieve information from peripheral devices.



VI. METHODOLOGY

The methodology for solving the identification problem for an interactive display device could include the following steps:

- Requirement Analysis: Conduct surveys and interviews with potential users to understand their specific needs and challenges related to interactive display devices.
- Literature Review: Gather insights from existing research and studies to understand the current state of interactive display technology and identify the key areas of improvement.
- Prototype Development: Create initial prototypes of the interactive display device, integrating improved display resolution, touch responsiveness, and compatibility with various software applications.



- User Testing and Feedback: Gather feedback from users through usability testing sessions to assess the effectiveness of the prototype in addressing the identified problems.
- Iterative Design Refinement: Incorporate user feedback and iterate on the design to further enhance the device's usability, display quality, and compatibility with different software and devices.
- Collaborative Development: Engage with a multidisciplinary team, including engineers, designers, and educators, to ensure a holistic approach to problem-solving and product development.
- Quality Assurance and Testing: Conduct rigorous testing to ensure that the interactive display device meets the highest standards in terms of performance, durability, and compatibility.
- Pilot Implementation and Evaluation: Deploy the refined interactive display device in pilot settings such as classrooms or collaborative work environments to assess its practical usability and effectiveness in addressing the identified problems.
- Continuous Improvement: Gather ongoing feedback from users and stakeholders to implement necessary updates and improvements, ensuring that the interactive display device remains relevant and effective in meeting user needs and expectations.

VII. CONCLUSION

In conclusion, the integration of interactive display devices within both collage classrooms and hardware labs and beginners offers a multifaceted approach to improve the educational experience. These devices not only promote static engagement and collaborative learning in traditional academic settings but also provide a versatile platform for hands-on experimentation and visualization in hardware labs. By leveraging interactive technology, colleges can enhance student comprehension, foster innovation, and prepare individuals for the demands of modern industries.

VIII. FUTURE WORK

The future scope of interactive display devices looks promising. They could become more widespread in various areas like education, business, and entertainment. Imagine interactive screens that make learning fun, interactive presentations in meetings, or immersive gaming experiences. As technology advances, these devices may become more affordable and user-friendly, enhancing our daily interactions with information and entertainment.

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