Date: 13ᵗʰFebruary-2025

ADVANTAGES OF MICROPROCESSOR-BASED SYSTEMS FOR PEOPLE WITH LIMITED ABILITIES

Abasxanova Xalima Yunusovna
Associate Professor, Tashkent University of Information
Technologies named after Muhammad al-Khwarizmi
E-mail: halimaabasxanova@gmail.com
Mamatov Shahzodbek Anvarjon o'g'li
Student, Telecommunication technologies faculty of Tashkent University
of Information Technologies named after Muhammad al-Khwarizmi
Shukurjonova Xurshidabonu A'zamjon qizi
Student, Infocommunication Engineering faculty of Tashkent University
of Information Technologies named after Muhammad al-Khwarizmi

Abstract: Computers significantly help people with disabilities to move around. Information systems provide access to large information banks for people who do not have access to libraries. This, in turn, is one of the most urgent and necessary things.
Keywords: Microprocessor systems, Programming techniques, Hardware implementation, limited liability, Mouth pencil construction, bracket-shaped aluminum pen.

Computers significantly assist individuals with limited mobility in performing various actions. Information systems provide access to vast information databases for individuals who cannot visit libraries. This, in turn, is one of the most crucial and necessary aspects of modern life. We have the ability to program manipulators and other computer-controlled devices to operate according to predefined instructions. Additionally, these devices can detect when they touch an object. This feature allows people with mobility impairments to control objects that help them perform essential tasks such as eating, turning book pages, and changing disks in a computer drive.

Newly developed technologies offer numerous possibilities. They simplify our lives, making them more colorful, vibrant, and convenient. Nowadays, many people own smartphones and tablets, which is no longer surprising. However, it is important to remember that among us are individuals with physical limitations who cannot use their hands. These individuals have to adapt and perform daily tasks in alternative ways, which is not easy. Many companies develop products for people with disabilities, but their high prices often make them inaccessible to most people. Therefore, there is a need to create cost-effective products. Microprocessor-based systems play a crucial role in this regard by enhancing and improving devices that assist individuals in their daily activities.

One such device is a mouth-controlled stylus, which provides individuals with disabilities access to internet services and touchscreen devices. With this device, they can easily use touch keyboards.

147

This is a simple device consisting of a curved aluminum stylus. One end features a mouthpiece designed for the user to hold with their mouth, resembling a snorkel used for breathing underwater. The other end has a special tip that mimics a finger touch on a screen. By using this stylus, individuals can independently operate tablets and smartphones.

In the era of rapidly evolving information technology, every device or software created based on innovative ideas offers unique advantages. These advancements make life easier, fulfill specific needs, and improve living conditions by providing various conveniences. This particular device stands out due to its affordability, simplicity, and high usefulness.

When using the stylus, the tablet or smartphone should be placed on a table. The mouthpiece provides additional comfort, ensuring ease of use. The stylus is made of stainless steel with removable, easy-to-clean cushions for comfort. An integrated microcontroller monitors user movements and adjusts the stylus angle as needed. The tip of the stylus, which touches the mobile device, is highly flexible, allowing it to be bent at a comfortable angle. Additionally, the stylus is highly responsive to touchscreens, ensuring precise control.

Thanks to its flexibility, the stylus minimizes strain on the user's neck muscles, reducing fatigue. Moreover, the head-mounted support structure is sturdy, allowing the stylus to be moved at any desired angle without causing discomfort. It is also adjustable to fit different head sizes. The part that goes around the user's neck is made of stretchable rubber, ensuring that the device stays securely in place. If needed, the device can also be used with a standard keyboard.

With such advanced technological devices, we can help people with disabilities feel more included in society and make their lives significantly easier.

THE LIST OF USED LITERATURE:

1. O'zbekiston Respublikasi Prezidentining 28.01.2022 yildagi PF-60-son farmoni.
2. O'zbekiston Respublikasi Prezidentining 2019 yil 23 oktyabrdagi «O'zbekiston Respublikasi qishloq xo'jaligini rivojlantirishning 2020 — 2030 yillarga mo'ljallangan strategiyasini tasdiqlash to'g'risida»gi PF-5853-son Farmoni
3. Abasxanova X.Yu . Qishloq xo'jaligi maydonlarini monitoring qilish va nazorat qilish uchun geoaxborot tizimlarini ishlab chiqish usullari. Monografiya. Toshkent - 2021. "Fan va texnolo-giyalar nashriyot -matbaa uyi". –132b. https://scholar.google
4. Abasxanova X.Yu. Development of hardware and software complex for monitoring system. Международный научный журнал «Universum: технические науки». 2022, Выпуск: 9(102), часть 5, –P.5-8. https://7universum.com/ru/tech/archive/category/9102.
5. Abaskhanova X.Yu. Analysis of information and communication technologies in green environment monitoring. International Conference on Information Science and Communications Technologies Applications, Trends and Opportunies: ICISCT 2022. https://www.icisct2022.org/

6. Abasxanova X.YU. Raqamli texnologiyalarni agrar sohasida qo'llanish agzalligi . Agro ilm. Аграр- иқтисодий, илмий – амалий журнал. www.qxjurnal.uz.

7. Шукуров Ж.С.,Умарова Д.А. Opportunities for Business Process Outsourcing and Knowledge Process Outsourcing in Uzbekistan "Iqtisodiyot va innovatsion texnologiyalar ilmiy electron jurnali. http://iqtisodiyot.tsue.uz

8. Интеллектуальные технические средства АПК : учеб. пособие / Е. В. Труфляк, Е. И. Трубилин. – Краснодар : КубГАУ, 2016. – 266 с.

9. Ведомственный проект «Цифровое сельское хозяйство»: официальное издание.– М.: ФГБНУ «Росинформагротех».-2019.-48 с.

10. Ткаченко В.В. Разработка комплексной автоматизированной информационной системы поддержки принятия решений в управлении технологическими процессами растениеводства (на материалах АПК Краснодарского края) / В.В. Ткаченко, Н.Н. Лытнев // Вестник Академии знаний. – 2018.-№29 (6).-С. 249-253.

11. Abasxanova X.Yu., Amirsaidov U.B. Mikroprotsessorlar. Oliy o'quv yurtlari uchun o'quv qo'llanma. Toshkent 2017 yil. -350 b. https://scholar.google

12. Abaskhanova X. The role of geographic information system in growing agricultural production Universum: технические науки. – 2022. – №. 1-3 (94). – С. 57-58. https://7universum.com/ru/tech/archive/category/194 DOI: 10.32743/UniTech.2022.94.1-3

13. Abasxanova, X. Raqamli texnika. O'zbekiston Respublikasi Oliy va o'rta maxsus ta'lim vazirligi tomonidan oliy o'quv yurti talabalari uchun uchun darslik sifatida tavsiya etilgan. Toshkent 2022yil. – 300 b. https://scholar.google

14. X.Yu. Abbasxanova, J.B. Baltayev, N.V. Yaronova. Radioaloqaning mikroprotsessor qurilmalari. O'zbekiston Respublikasi Oliy va o'rta maxsus ta'lim vazirligi tomonidan oliy o'quv yurtlarining 5350700 – "Radioelektron qurilmalar va tizimlar" ta'lim yo'nalishi talabalari uchun darslik sifatida tavsiya etilgan. Toshkent 2023yil. – 400 b. https://scholar.google

15. Мансурова М.Я. Методы математического моделирования интегрированной компьютерной системы электронного бизнеса // Universum: технические науки : электрон. научн. журн. 2023. 2(107).

16. URL: https://7universum.com/ru/tech/archive/category/2107