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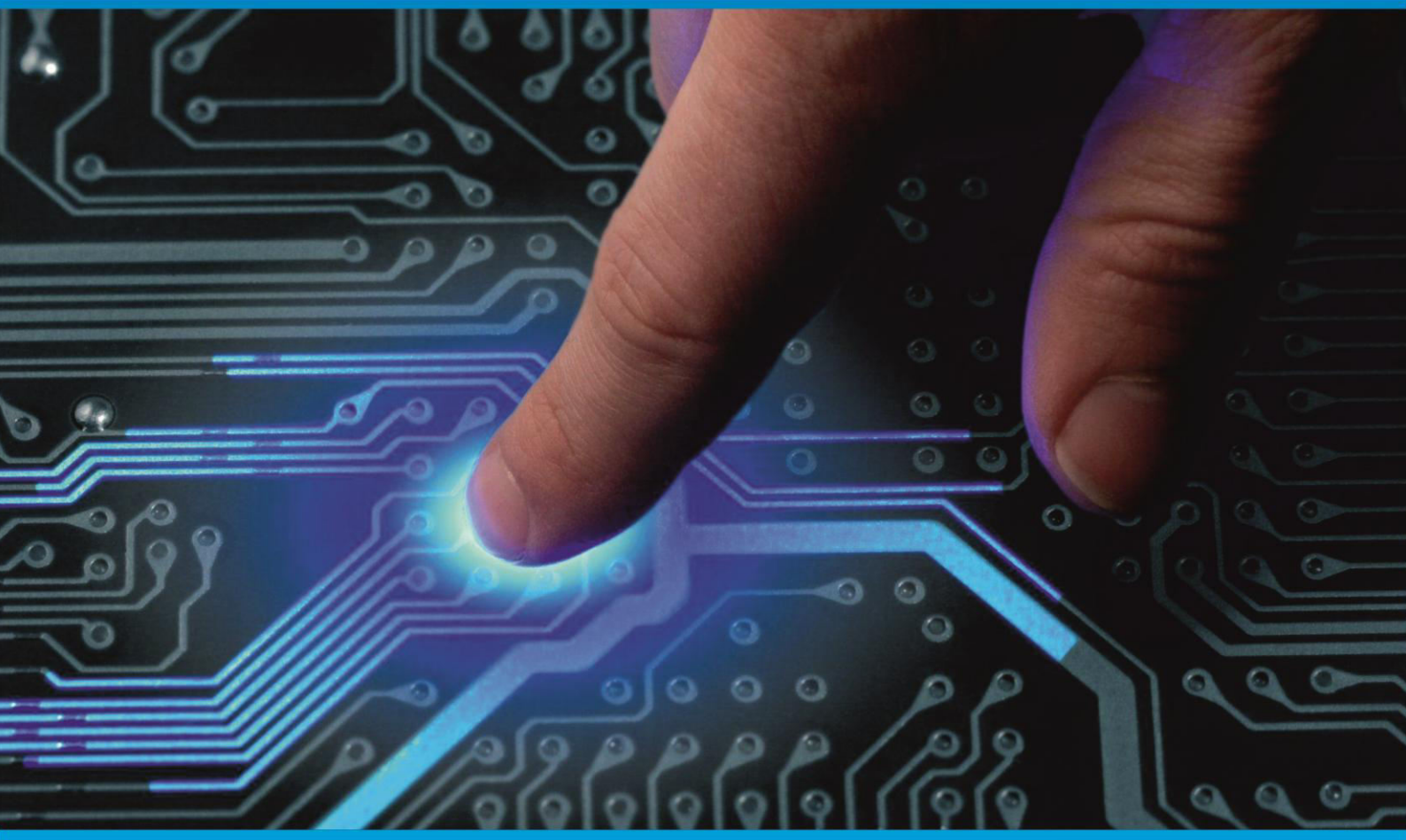

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An Efficient Approach of Taking Quick and Simple Notes in the Air through Smart Note Taker

S.R.Nivetha[1], Suja A.Alex[2]

[1]UG Scholar, Department of Electronics and Communication Engineering, St.Xavier's Catholic College of Engineering, Chunkankadai, Nagercoil, India

[2]Assistant Professor, Department of Information Technology, St.Xavier's Catholic College of Engineering, Chunkankadai, Nagercoil, India

ABSTRACT:Today's modern lifestyle is creating a great hype in each and everyone's livelihood. On the off chance if we take a glance at the entire view there is a race going ahead amongst individuals and everybody needs to succeed. To overcome this rodent race innovation acts as a weapon. So in today's modern and mechanical life a weapon like smart note taker satisfies the requirements of the common population. This gadget can be extremely beneficial for the general population who wishes to take fast notes. This innovation has one exceptional quality that it allows you to take notes in the air and then the notes can be stored on the memory chip in the device. These composed notes are then readable in the digital medium once they are finished. The Smart Note Taker is such a valuable product that fulfills the needs of the people in today's fast and technological life. This will facilitate life and save time. There will be an additional feature on this product which will monitor the notes, which were taken before, on the application program used in the computer. It is very useful for preceptors in presentation time. They don't need to present lectures. Instead, the drawn picture and stored notes can be processed and directly received by the server. The server computer then broadcasts the stored notes through the network to all the computers. In this way, the lectures are hoped to be more efficient. The product will be able to sense 3D shapes. The sensed information will be processed and then transferred to the memory chip. This product will be very simple and more powerful in future generations.

KEYWORDS:JAVA applet, Display technology, Hand writing recognition

I. INTRODUCTION

The Smart Note Taker is very helpful for people to take notes in the air while being engaged in their work [1]. The data are stored in the memory chip of a pen. The stored information will be monitored on the display device [3]. This technology lowers the user's time. The written notes will be able to read in a digital medium. This product helps blinds to think and write freely [7]. This product also plays an important role, in where two people talks on the phone. The two peoples are far apart while their talk and they want to use texts or figures to understand themselves. It's very useful for instructors in presentation time. The instructor may not want to present a lecture. The stored notes and drawn pictures can be processed and directly sent to the server. The server computer then broadcasts the stored notes through the network to all the computers [12]. This way, the lectures are aimed to be well organized. It can also sense 3D shapes. The processed data will be sent to the memory chip.

II. SYSTEM OVEVIEW

Construction: Since the JAVA applet is suitable for both the strings and drawings, all these applications can be operated by developing a single JAVA applet program. The particular Java code will be installed in the pen. So the processor in the pen will be able to draw desired text on the display panel.

Applet: Applet is a function of java that contains a set of programs made in java. Java is a high-level language that is used widely in making various applications based on java. An applet is one of the best features of java. Various strings and drawings are made using a class file. It will not be a single file but a set of files linked together.

Database: The system installed in the pen consists of a database that helps the processor to recognize different words made visually in the air. Each word written visually in the air will resemble a word in the database. The particular word present in the database will be printed. This is the basic principle of the working of an efficient smart note taker.

Working: Smart note taker will be a simple and powerful tool. It senses 3D shapes and motions that the user tries to draw. The sensed information will be processed and given to the memory chip and then it will be monitored on the

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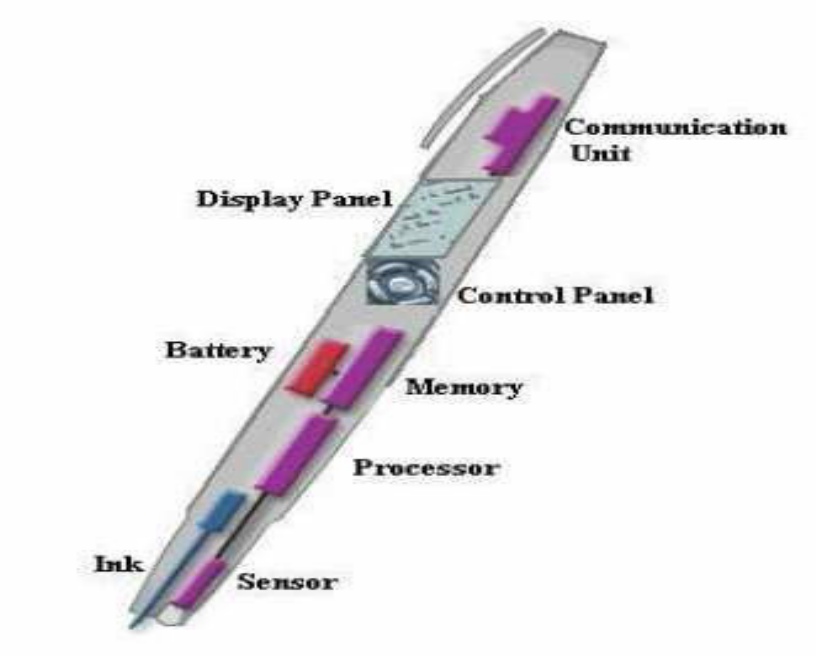
display device. The drawn shape can be transmitted to the network or sent to any device. There is an additional feature in this product that monitors the notes that were taken before, on the application program used in the computer. This program can be an image file or a word document. Then, the sensed information will be recognized with the help of the software program and the particular character will be printed in the word document. If the application program is a paint-related program, then the most similar shape will be chosen and then printed on the screen.

III. INTERIOR STRUCTURE

Fig (a) shows the interior structure of smart note taker.



(a)

IV. TECHNOLOGIES USED

Display technology: Here figure 1 represents the image of internal structure of smart note taker. Kopin Corp's Cyber Display technology is the technology used in Smart Note Taker [9]. Cyber Display is a¼ inch diagonal LCD that has circuitry built on a silicon wafer, then removed and mounted on the glass. The displays are integrated into miniature monitors using their packaging backlighting, ICS, and optics.

Handwriting Recognition: Accelerometers measure the hand movements in 2 or 3 planes. Smart Note Taker works by measuring the pen's movements that match the letters and words programmed into its memory [6]. It's similar to the way how microphone detects the sound. Consistency of handwriting rather than neatness is the only condition for better accuracy. There are the two techniques used for handwriting recognition:

- Accelerometer technology
- Handwriting recognition software

Accelerometer Technology: An accelerometer is a device used for measuring motion. A tiny accelerometer in a pen will be used to detect the arcs, stops, starts, and loops of handwriting, and then transmit this information to a small microprocessor that would make sense of it as text. It also has a possibility for viewing a full page of text through a special monocular magnified "virtual" screen which is built at the end of the pen. Invisible writing in the air is achieved through this unique technology. An accelerometer that monitors hand movements and can also be used as a 'virtual hinge' to scroll around the small screen of the pen. It also detects left or right-handed use. It records the movements by using the earth's gravity system and records whether it is written in the air or on paper. Hence it is independent of the surface used. Movements in the air are stored within the Smart Note Taker. This information is transmitted to a small microprocessor that would make sense of it as text displayed on the sleek built-in screen. There are 2 types of accelerometers available here. Two axes accelerometer measures the acceleration in two axes and three axes accelerometer measures acceleration in three axes. These accelerometers provide proper acceleration. This is not

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necessarily the same as the coordinate acceleration (change of velocity of the device in space) but it is rather the type associated with the phenomenon of weight experienced by a test mass that resides in the frame of reference of the device.

V. CURRENT PRODUCTS

Mobile Note taker:

(b)

Here figure (b) represents the image of mobile note taker. The Ultimate Handwriting Capture Device Mobile Note Taker is the first portable handwriting capture device on which natural handwriting is an input. Attached with the plain paper of any kind and use Pegasus the electronic pen to capture, store and share notes, handwritten drawings, sketches, and memos at conferences, meetings, and lectures. Mobile Note Taker has a built-in LCD to confirm input. The on board flash memory can store up to 50 pages.

PC Note taker:

(c)

Here figure (c) represents the image of PC note taker. Based on a revolutionary electronic pen, PC Notes Taker displays the user's handwritten essentials, such as health, educational and financial sectors. Supplied notes, memos, or drawings on the computer, and stores the image for future use. PC Notes Taker is ideal for markets where handwritten input is with user-friendly software, PC Notes Taker is more compatible with PCs and notebooks [2].
Smart pen:

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(d)

Here figure (d) represents the image of smart pen. The Smart pen is a device that resembles a stylus or a fat pen but contains a tiny computer and a set of sophisticated sensors that record and analyse every motion, and then transmit this information to a nearby computer via radio, infrared, or direct electric signal. A Smart Pen helps a computer to recognize handwritten or drawn input. A computer is treated as 1 level of Complexity higher in its ability to recognize the handwriting of anybody who uses a Smart Pen. It costs $50.

VI. ADVANTAGES

Smart note taker can be used as a standard pen and can carry anywhere without stressing the mind to carry it. With the help of a smart note taker, we can write notes on any surface even in the air without using paper. It is light weighted and easily portable. It can be used in phone talks.

VII. DISADVANTAGES

Smart note taker is very expensive and has no templates and other sophisticated formats available. It can't drag items to other tabs directly. More awareness is required.

VIII. APPLICATIONS

1. With the help of this product handwritten notes will be instantly converted into editable text.
2. This product can play an important role where two people talk each other on their phone. When the subscribers are far apart from each other while talking they can use figures or text to understand themselves better.
3. It can be used by teachers directly and indirectly for teaching purpose of the students.
4. Smart note taker is reliable and more powerful.
5. It is for helpful for blinds to think and write freely [11].
6. Smart note taker is very useful for instructors during the presentations.
7. It is used along with JAVA Graphics and paint. Thus, smart note taker is more compatible with all graphics software.

IX. FUTURE SCOPE

Companies had succeeded to make similar products and put them on the market. Introducing a newly invented, innovative product in the market is so not easy. The prices for the similar product in the market must be well observed. The prices of 2-D digital pens are about only 50 to 90 dollars. So the price of a smart note taker will be comparatively high. So this disadvantage should be eliminated in future. Future models could receive pager messages and e-mails via wireless messaging system and could use digital signature recognition for security purposes. Work can be done on improving the handwriting recognition software to make it understand cursive can be done in future.

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X. CONCLUSION

This system will try to improve to help people to get rid of typing problems on the computer [4]. Besides taking notes, it also supports all other classic pens. Therefore, it increases the capacity of noting the texts, lessons, and projects on which you work on [5, 8]. Hence we can conclude that our product has many advantages over digital pen, since the smart note taker is a device that can store visual recordings and thus can be used widely.

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