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Electronic Component Identification using Voice Recognition

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Abstract: ***Any fundamental discrete device or physical object in an electronic system that affects electrons or the fields around them is referred to as an electronic component. Electrical elements, which are conceptual, should not be confused with electronic components, the majority of which are industrial goods that are only available in a single form. Abstractions used to represent idealised electronic parts and components. There are numerous electrical terminals or leads on electronic components. To build an electronic circuit with a specific purpose (such as an amplifier, radio receiver, or oscillator), these leads link to other electrical components, frequently by wire. Basic electronic components can be integrated inside of discrete packages like semiconductor integrated circuits, hybrid integrated circuits, or thick film devices, as well as arrays or networks of similar components. The list of electrical components that follows concentrates on their discrete form and treats such bundles as independent components.***

Keywords: electrical, terminal, hybrid, circuit, thick, film, device

I. INRODUCTION

Components might be passive, active, or electromechanical. According to the formal physics definition, passive components are those that cannot produce energy themselves, but a battery is an active component because it genuinely serves as a source of energy. Electronic engineers who undertake circuit analysis, on the other hand, utilise a more narrow definition of passivity. When only concerned with signal energy, it is convenient to ignore the so-called DC circuit and pretend that the power supplying components, such as transistors or integrated circuits, are absent (as if each such component had its own battery built in), even though the DC circuit may in fact supply it. The study then focuses solely on the alternating current circuit, an abstraction that ignores the DC voltages and currents (and the power associated with them) present in the real-world circuit. This deception, for example, allows us to see an oscillator as "producing energy" despite the fact that the oscillator consumes considerably more energy from a DC power supply, which we have decided to overlook. Under that constraint, we define the words used in circuit analysis as follows:

• Active components require an energy source (often from the DC circuit, which we have decided to ignore) and can normally pump power into a circuit, but this is not part of the definition.[1] Transistors, triode vacuum tubes (valves), and tunnel diodes are examples of active components.

• Passive components are not permitted to introduce net energy into the circuit. They cannot also rely on a power source other than what is available from the (AC) circuit to which they are connected. like a result, they cannot magnify (raise the power of a signal), but they can increase voltage or current (like a transformer or resonant circuit does). Two-terminal passive components include resistors, capacitors, inductors, and transformers.

• Electromechanical components can perform electrical operations through the use of moving parts or electrical connections. Though there are a few exceptions, most passive components with more than two terminals can be defined in terms of two-port parameters that meet the concept of reciprocity.[2] Active components (those with more than two terminals) often lack this attribute.

II. LITERATURE SURVEY

Architecture for Biometric Electronic Identification Document System Based on Block chain”

This paper proposes a Block chain-based architecture for a biometric electronic identification document (e-ID) system for citizens' identity verification in transactions such as notary, registration, tax declaration and payment, basic health services, and economic activity registration, among others. To eliminate spoofing and other similar attacks, a biometric e-ID system is employed to confirm user authentication. In addition, a digital certificate with the associated public and private key for each citizen is utilised to validate the document by utilising a user's PIN. The suggested transaction validation method was developed using a Block chain system to record and validate all transactions conducted by citizens registered in the electoral census, ensuring security, integrity, scalability, traceability, and no-ambiguity.

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Furthermore, a distributed and decentralised Block chain network design is described, which includes all network nodes, databases, and government agencies such as national register and notary offices.

The consequences of applying a new consensus algorithm to our Blockchain network are also shown, with mining time, memory, and CPU consumption increasing as the number of transactions increases. Autonomous Notarization System Based on Block Chain Using National eID Card The growth of information and communication technology in recent years has resulted in the emergence of e-government, which is the electronic replacement of government functions. E-government is considered to be compatible with block chain technology, prompting numerous studies on the subject.

Notarization, one of the government's tasks, has been specifically studied for the future implementation of block chain technology. However, because the notary public must certify the contents of the document during the notarization process, smart contracts have proven challenging to replace. In this work, we concentrate solely on fixed-date notarizations and propose a completely automated notarization system based on a national eID card, Public Key Infrastructure, and smart contracts. A fixed date is a notarization that allows a notary public to confirm the existence of a document independent of its legitimacy. As a result, a smart contract can take its place. In particular, for electronic documents signed using a national eID card, our proposed solution automatically authenticates the creator and the document and leverages the transaction receipt generated when the information is deposited on the block chain as a certificate of notarization.

A. Existing System

The online manufacturer and distributor catalogues are the first place to look for replacement components. These lists will give you up-to-date information on a wide selection of items, as well as datasheets. Every component has a unique marking, either on the body or on the container. The unique part number, value and tolerance, polarity, and color-coded bands to show resistance will all be included in the individual mark or code.

Disadvantage:

1) Less Accuracy

III. PROPOSED SYSTEM AND ARCHITECTURE

In this paper, we will use a voice identification API or package to transform speech into text, which will be the names of electronic components, which will be shown as an image. Give distinct and loud words while speaking. Only one word is permitted.

A. Advantage

1) More Accuracy

B. Modules Information

We created the following modules to help us carry out this paper .

1) *Begin Recording:* The process or business of storing sounds or moving pictures using electronic equipment in order to hear or see them later: a studio for recording. a digital recording, a live performance.

2) *Recording is now complete:* The term "complete record" refers to information about the origin, treatment, germination, and purity (including variety) of each lot of seed. Seed samples and records of declaration, labelling, purchases, sales, cleaning, bulking, treatment, handling, storage, analyses, testing, and examinations are examples of records.



Figure 1: The Architecture of the Proposed System

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C. Non-functional requirement

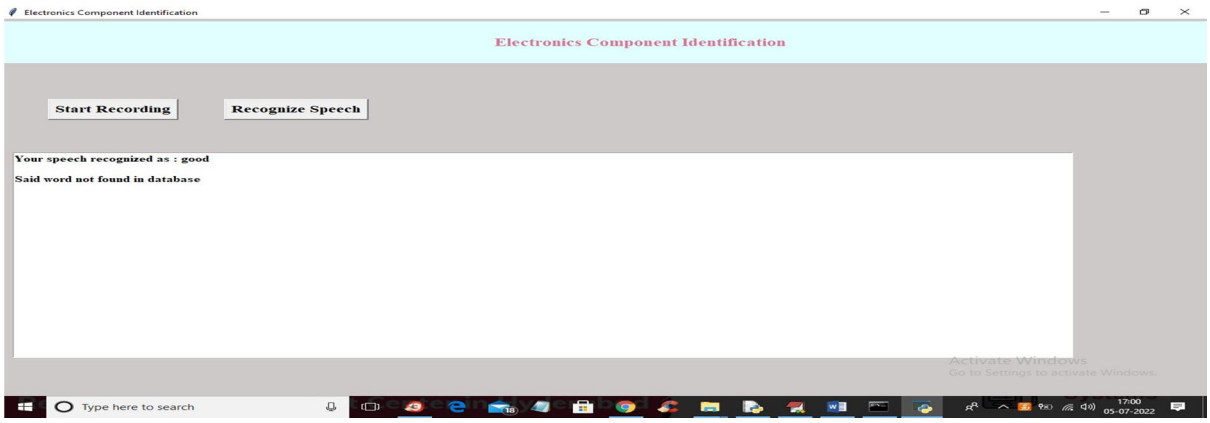
Usability is a quality criterion that evaluates how simple user interfaces are to use. The term "usability" also refers to techniques for increasing usability during the design phase. (How easy it was to manage the entire paper)

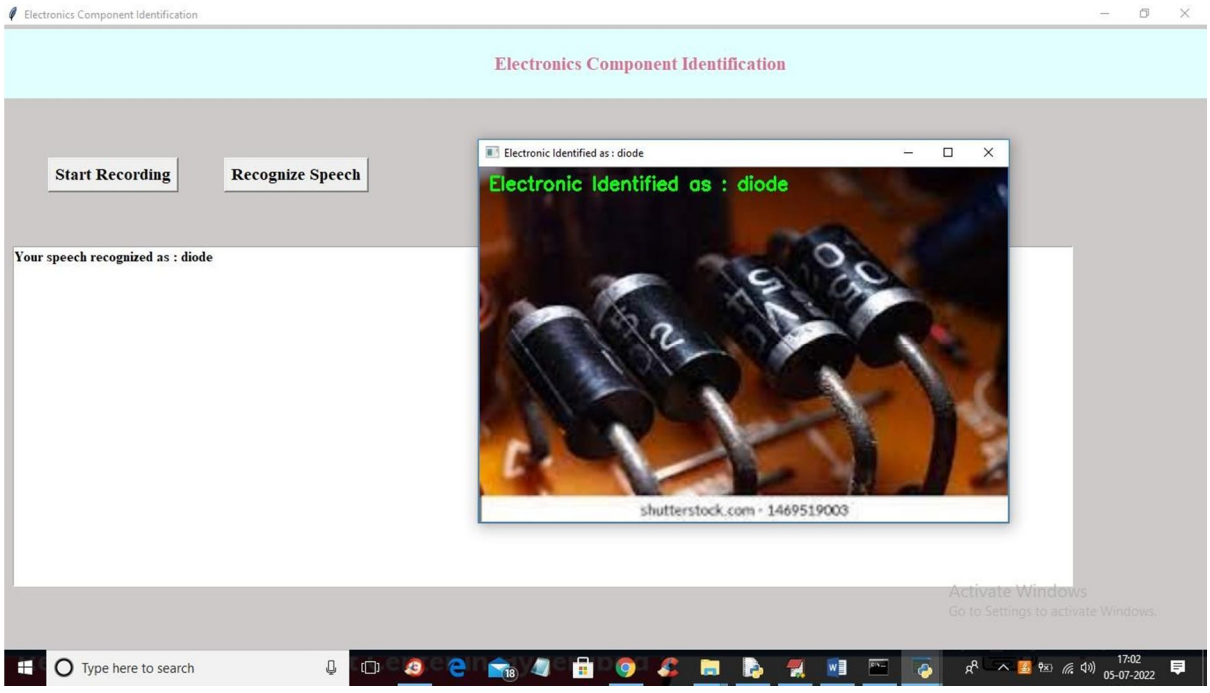
Security is defined as the attribute or state of being secure, such as a: freedom from danger: safety. b: the absence of dread or worry. c: employment security without the threat of getting laid off.

Readability is the ease with which a reader can comprehend a written material.

The execution of an action: deed, feat.: the fulfilment of a claim, promise, or request: implementation. 3.: the act of playing a character in a play. Availability: the condition or quality of being available in an effort to increase the availability of affordable homes. 2: a person or thing that is available. Scalability is a measure of a system's ability to improve or degrade performance

IV. RESULTS





V. CONCLUSION AND FUTURE ENHANCEMENT

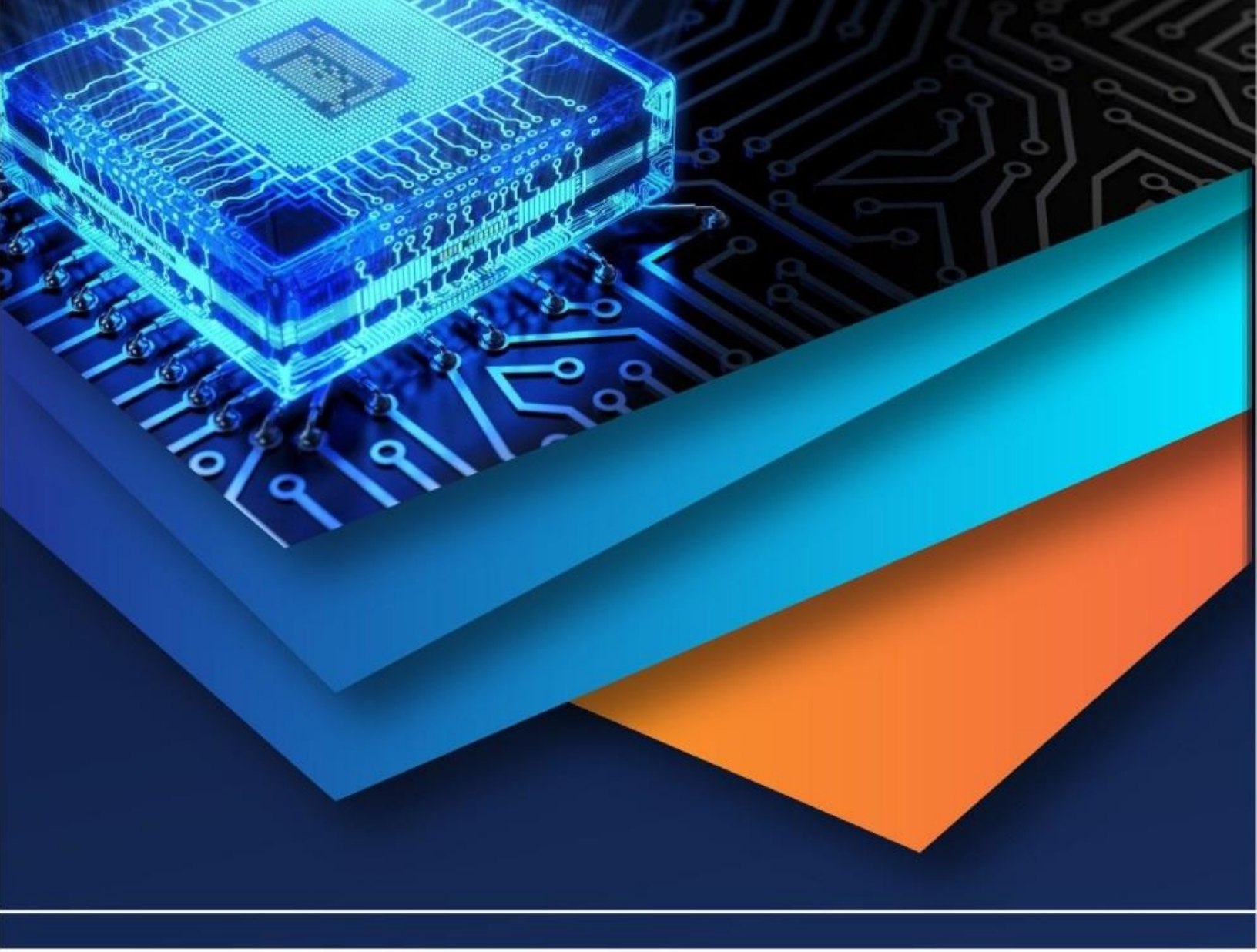
In this paper, we will use a voice identification API or package to transform speech into text, which will be the names of electronic components, which will be shown as an image. This paper can be improved further by updating it to the most recent technology and employing the most recent voice recognition technologies.

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