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AI and Blockchain using Secured Voting System Project Report

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Abstract—Artificial intelligence was founded as an academic discipline in 1956, and in the years since has experienced several waves of optimism, followed by disappointment and the loss of funding (known as an "AI winter"),followed by new approaches, success and renewed funding. AI research has tried and discarded many different approaches since its founding, including simulating the brain,modeling humanproblem solving,formal logic,large databases of knowledgeandimitating animal behavior.

The main purpose of the paper is to avoid the critical process of Maintain Queue in the election time and reduce the time consuming to generate the voting result. The voter can easily verify their booth detail before the election time and easily put their vote without any unwanted procedures. This system helps the election commission to easily update the voter details and verify if the correct voter has attend the voting system. Fingerprint verification used to authenticate voter's identity. This is useful towards secure voting system. As a result of our proposed system, the concept of AI and the security methodology which it uses, immutable hash chains, has become flexible to polls and elections. In future we Send to add additional functionality of image validation for the security constraint and uniqueness which will provide very strong security for the confidential information for voting.

Keywords— Artificial intelligence , Fingerprint verification , voting result. etc

I. INTRODUCTION

AArtificial intelligence (AI) isintelligencedemonstrated bymachines,asopposed to natural intelligence displayed byanimalsincludinghumans.Leading AI textbooks define the field as the study of "intelligent agents":any system that perceives its environment and takes actions that maximize its chance of achieving its goals. Some popular accounts use the term "artificial intelligence" to describe machines that mimic "cognitive" functions that humans associate with thehuman mind,such as "learning" and "problem solving", however, this definition is rejected by major AI researchers.

AI application include advanced web search engines (e.g.,Google), recommendation system (used by YouTube Amazon and Netflix), understanding human speech (such as siri and Alexa),self driving cars (e.g., Tesla)(such aschessandGo).As machines become increasingly capable, tasks considered to require "intelligence" are often removed from the definition of AI, a phenomenon known as theAI effect.For instance,optical character recognitionisfrequently excluded from things considered to be AI, having become a routine technology.

. In the first decades of the 21st century, highly mathematical statisticalmachine learninghasdominated the field, and this technique has proved highly successful, helping to solve many challenging problems throughout industry and academia. Contracts area unit written into the blockchain and area unit changeless, they cant be (illegally) removed nor manipulated once written. Hence, they will work properly, autonomously and transparently forever, with none external stimuli. As already mentioned, with its distinctive distributed and secure idea, the blockchain innovation could address a

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few issues separated from advanced exchange. It would be fully suitable response for e-voting comes. E-voting is being studied widely, and lots of implementations area unit tried and even utilized for a moment. However, only a few implementations area unit reliable enough and area unit still in use. Of course, there area unit several productive samples of on-line polls and questionnaires, nevertheless we will in general cant guarantee a comparable for on-line decisions for governments and organizations. Thats principally as a result of official elections area unit essential parts of the democracy and democratic administrations, that area unit the foremost most popular body methodology within the times. More, what is most valued in democratic societies may be a strong constituent strategy that has transparency and privacy. Today, tons of selections area unit being created by individuals (and members in organizations).means that of such choice systems area unit employed in tons of fields starting from the law and act referendums to the TV shows. Fingerprints are one of the types of biometrics used to distinguish people and confirm their identity. Fingerprint verification is automated method for confirming a match between two human fingerprints. In this project fingerprint verification used to authenticate voters identity.

A. APPLICATION OF AI

AI is relevant to any intellectual task. Modern artificial intelligence techniques are pervasive and are too numerous to list here. Frequently, when a technique reaches mainstream use, it is no longer considered artificial intelligence; this phenomenon is described as theAI effect.

In the 2010s, AI applications were at the heart of the most commercially successful areas of computing, and have become a ubiquitous feature of daily life. AI is used insearch engines(such asGoogle Search),targeting onlineadvertisements,recommendation systems(self-drivingcars),automatic language translation(Microsoft Translator,Google Translate),facialrecognition(Apple'sFace IDorMicrosoft'sDeepFace),imagelabeling(used byFacebook,Apple'siPhotoandTikTok)andspam filtering.

There are also thousands of successful AI applications used to solve problems for specific industries or institutions. A few examples are:energy storage,deepfakes,medical diagnosis, military logistics, or supply chain management. Game playinghasbeen a test of AI's strength since the 1950s.DeepBluebecame the first computer chess-playing system to beat a reigning world chess champion,Garry Kasparov,on11 May 1997. In 2011, in a Jeopardy quizshowexhibition match,IBM'squestion answering system,Watson,defeated the two greatest Jeopardy champions,Brad RutterandKen Jennings,bya significant margin. In March 2016,AlphaGowon4 out of 5 games ofGoina match with Go championLee Sedol,becoming the firstcomputerGo-playing system to beat a professional Go player withouthandicaps.Other programs handleimperfectinformationgamesPluribusandCepheus.Deep Mindinthe 2010s developed a "generalized artificial intelligence" that could learn many diverseAtarigames on its own.

Deep learning is a machine learning technique that teaches computers to do what comes naturally to humans, to learn by example. Innumerable developers are leveraging the latest deep learning innovative technologies to take their business to the new high. There are large numbers of fields of Artificial Intelligence technology like autonomous vehicles, computer vision, automatic text generation, and the like, where the scope and use of deep learning are increasing. Take an example of Self Driving feature in cars like Tesla(Autopilot), where Deep learning is a key technology behind enabling them to recognize a stop sign or to distinguish a pedestrian from a lamppost.

AI has the ability to execute the same kind of work over and over again without breaking a sweat. To understand this feature better, let's take the example of Siri, a voice-enabled assistant created by Apple Inc. It can handle so many commands in a single day! From asking to take up notes for a brief, to rescheduling the calendar for a meeting, to guiding us through the streets with navigation, the assistant has it all covered. Earlier, all of these activities had to be done manually which used to take up a lot of time and effort. The automation would not only lead to increased efficiencies but also result in lower overhead costs and in some cases a safer work environment.

II. LITERATURE REVIEW

1. L. J. González-Soler, L. Chang, J. Hernández-Palancar, A. Pérez-Suárez, and M. Gomez-Barrero, 'Fingerprint presentation attack detection method based on a bag-of-words approach

Fingerprint-based biometric systems have experienced a large development in the past. In spite of many advantages, they are still vulnerable to attack presentations (APs). Therefore, the task of determining whether a sample stems from a live subject (i.e., bona fide) or from an artificial replica is a mandatory requirement which has recently received a considerable attention. Nowadays, when the materials for the fabrication of the Presentation Attack Instruments (PAIs) have been used to train the Presentation Attack Detection (PAD) methods, the PAIs can be successfully identified in most cases. However, current PAD methods still face difficulties detecting PAIs built from unknown materials and/or unknown recepies, or acquired using different capture devices. To tackle this issue, we propose a new PAD technique based on three image representation approaches combining local and global information of the fingerprint. By transforming these representations into a common feature space, we can correctly discriminate bona fide from attack presentations in the aforementioned scenarios. The experimental evaluation of our proposal over the LivDet 2011 to 2019 databases, yielded error rates outperforming the top state-of-the-art results by up to 72% in the most challenging scenarios. In addition, the best representation achieved the best results in the LivDet 2019 competition (overall accuracy of 96.17%).

2. L. J. González-Soler, M. Gomez-Barrero, L. Chang, A.

P. Suárez, andC. Busch, ``On the impact of different fabrication materials on ngerprint presentation attack detection,"

Presentation Attack Detection (PAD) is the task of determining whether a sample stems from a live subject (bona fide presentation) or from an artificial replica (Presentation Attack Instrument, PAI). Several PAD approaches have shown high effectiveness to successfully detect PAIs when the materials used for the fabrication of these PAIs are known a priori. However, most of these PAD methods do not take into account the characteristics of PAIs' species in order to generalise to new, realistic and more challenging scenarios, where materials might be unknown. Based on that fact, in this work, we explore the impact of different PAI species, fabricated with different materials, on several local-based descriptors combined with the Fisher Vector feature encoding, in order to increase the robustness to unknown attacks. The experimental results over the well-established benchmarks of the LivDet 2011, LivDet 2013 and LivDet 2015 competitions reported error rates outperforming the top state-of-the-art in the presence of unknown attacks. Moreover, the evaluation revealed the differences in the detection performance due to the variability between the PAI species.

3. D.Valdes-Ramirez, M. A. Medina-Pérez, R. Monroy, O. Loyola-González,J. Rodríguez, A. Morales, and F. Herrera, ``A review of ngerprint feature representations and their applications for latent ngerprint identication: Trends and evaluation,"

Latent fingerprint identification is attracting increasing interest because of its important role in law enforcement. Although the use of various fingerprint features might be required for successful latent fingerprint identification, methods based on minutiae are often readily applicable and commonly outperform other methods. However, as many fingerprint feature representations exist, we sought to determine if the selection of feature representation has an impact on the performance of automated fingerprint identification systems., identify trends in fingerprint feature representation, and observe that representations designed for verification are commonly used in latent fingerprint identification. Therefore, we introduce and apply a protocol that evaluates minutia descriptors for latent fingerprint identification in terms of the identification rate plotted in the cumulative match characteristic (CMC) curve. From our experiments, we found that all the evaluated minutia descriptors obtained identification rates lower than 10% for Rank-1 and 24% for Rank-100 comparing the minutiae in the database NIST SD27, illustrating the need of new minutia descriptors for latent fingerprint identification.

4. E. Ramírez-Sáyago, O. Loyola-González, and M. A. Medina-Pérez,``Towards inpainting and denoising latent fingerprints: A study on the impact in latent finngerprint identification,"

In this project, we provide a study about the impact of the most prominent inpainting and denoising solutions on the latent fingerprint identification. From an in-depth analysis, we show how some of the analyzed inpainting and denoising solutions can improve up 63% for Rank-1 and 26% for Rank-20 the fingerprint identification rates when state-of-the-art minutiae extractors are used. Nevertheless, it is necessary to create new denoising and inpainting solutions that are specifically built to deal with latent fingerprints and their associated issues.

5. M. A. Medina-Pérez, A. M. Moreno, M. Á. F. Ballester, M. García-Borroto, O. Loyola-González, and L. Altamirano-Robles, ``Latent ngerprint identication using deformable minutiae clustering,"

Automatic latent fingerprint identification is a useful tool for criminal investigation. However, the accuracy of identification reported in the state-of-the-art literature is low due to the distortion in latent fingerprint images. In this paper, we describe a new algorithm based on the use of clustering which is independent of the minutiae descriptors. The proposed technique improves the robustness of identification in the presence of large non-linear deformation which is associated with latent fingerprint images. The new algorithm finds multiple overlapping clusters of matching minutiae pairs which are merged together to find matching minutiae. Several experiments performed using latent fingerprint databases show that our proposed algorithm achieves higher accuracy than those presented in state-of-the-art literature. Moreover, the results show that the proposed algorithm is successful in dealing with the large distortion associated with latent fingerprints formed under the worst conditions.

6. Ruhi Taş and Ömer Özgür Tanrıöver, ``A Manipulation Prevention Model for Blockchain-Based E-Voting Systems"

Security and trust are seen as the most important issues in electronic voting systems. Therefore, it is necessary to use cryptographic procedures to ensure anonymity, security, privacy, and reliability in these systems. In recent years, blockchain has become one of the most commonly used methods for securing data storage and transmission through decentralized applications. E-voting is one of these application areas. However, data manipulation is still seen as a major potential problem in e-voting systems. In theproposed model, administrators or miners are prevented from previewing election results which are normally accessible data due to the blockchain structure. A double-layer encryption model is proposed and tested to prevent manipulations that may occur with the election results. It is ensured that the election results can be counted after the participation of all stakeholders at the end. In this way, potential manipulations may be prevented during the election period. As a result of the model, the privacy of voters is ensured, no central authority is needed, and the recorded votes are kept in a distributed structure.

7. Ruhi Taş and Ömer Özgür Tanrıöver, ``A Finger Print based Voting System"

Biometric Finger print devices are used in the Electronic Voting machine for voter verification. We have designed a finger print based voting machine where there is no need for the user to carry his ID which contains his required details. The person at the polling booth needs only to place his

Finger on the device, thus allowing the acquisition of an on-spot fingerprint from the voter which serves as an identification. This Finger print reader reads the details from the tag. This data is passed onto the controlling unit for the verification. The controller fetches the data from the reader and compares this data with the already existing data stored during the registration of the voters. If the data matches with the pre-stored information of the registered fingerprint, the person is allowed to cast his vote. If not, a warning message is displayed on LCD and the person is barred from polling his vote. The vote casting mechanism is carried out manually using the push buttons. LCD is used to display the related messages, warnings and ensuing results.

8. Aravind , Gokul Raj ,Mohanraj and Dr.W.Gracy Theresa, ``Blockchain And Finger Print Enabled EVoting"

Election Polling is a complex system as well as costly system. Here we are presenting a novel Secure, Privacy Preserving and cost effective election polling concept which uses Internet Connectivity, BlockchainStorage and Homomorphic encryption.

EVoting is a web based application which uses Blockchain storage and Fingerprint for secured voting. The Votes are converted into encrypted data and stored in Blockchain Technology. A Blockchain is animproving list of transcription which are converted to blocks using cryptography. Each block contains cryptographic of the preceding block a timestamp of voting and data transaction. Fingerprint is used for validation to identify fake voters with their id by comparing with the Fingerprint and Fingerprint in database. This system is used by Election Officer and Booth Manager for checking the voters those who are process of polling. This system promote many votes and the votes are transferred correctly, securely, permanently and transparently.

9. J. Rodríguez-Ruiz, M. A. Medina-Pérez, R. Monroy, and O. LoyolaGonzález, ``A survey on minutiae-based palmprint feature representations, and a full analysis of palmprint feature representation role in latent identication performance,"

Latent palmprint identification is a crucial element for both law enforcement and integrated automated fingerprint identification systems because approximately 30% of the imprints found in a crime scene originate from a human's palms. To find the person whom the palmprint belongs to, forensic experts use systems that automatically compare the imprints found, called latent, against thousands of potential palmprints. Identification systems rely on features obtained from the palmprint, and different feature representations to include discriminative information. However, there is no consensus as to which representation allows for a better matching between latent palmprints, and those with a known identity. Furthermore, evaluating the identification performance when matching palmprints obtained when using different representations has not been done fairly. The current manner of evaluating palmprint identification methods uses different datasets, performance measures, and does not allow to discern the contributions of the feature representation and the methods for matching the palmprints. We aim with our results to provide a baseline for new research in latent palmprint identification feature representations, allowing for a fair comparison of newly developed representations in the future, which would enhance the whole latent palmprint identification methods. For this purpose, we also publicly provide our dataset, methodology implementation, and the feature representations implementation tested in our experiments.

10. Ankit K. Kothawade1 , Akash V. Bhopale2 , Akash Yogesh S. Patil3 ,, A Novel Method of E-Voting System Using Biometrics Thumb Impression and Face Recognition."

The project is mainly aimed at providing a secured and user-friendly Online Voting System. The problem of voting is still critical in terms of safety and security. This the system deals with the design and development of an application-based voting system using fingerprint, face recognition as well and aadhaar card or voting-id in order to provide high performance with high security to the voting system. The proposed Voting System that allows the voters to scan their face afterwards scan their fingerprint, which is then matched with an already saved data within a database that is retrieved from aadhaar card database of the government.

III. SYSTEM ANALYSIS

EXIXSTING SYSTEM

In India first election using electronic voting is scheduled to hold from April 20 to May 10, 2004. India is the world largest democracy with a population of more than 1 billion, India has an electorate of more than 668 million and covers 543 parliamentary constituencies, and will require more than one million electronic voting machines (EVMs). The legal approval in 1989 to allow the use of EVMs, they have been used in many state elections but never used an entire general election. Electronic Voting Machines prepared by Electronics Corp of India and Bharat Electronics. In India, Electronic Voting Machines used for voting. Electronic Voting means any system in which voter casts his/her votes using an electronic system, rather than paper vote. The EVM comes in a reusable carry pack, and can operate on a battery power source in remote areas. According to Election Commission officials, each EVM can record five votes minute or nearly 3,000 votes in a polling day. Electronic Voting Machine is used to record votes in place of paper and boxes.

ALGORITHM

KNN Algorithm

In pattern recognition,the k-nearest neighbours algorithm (k-NN) is a nonparametricmethod used for classificationandregression.Inboth cases, the input consists of the k closest training examples in the feature space.The output depends on whether k-NN is used for classification or regression:

- In k-NN classification, the output is a class membership. An object is classified by a majority vote of its neighbour, with the object being assigned to the class most common among its k nearest neighbour (k is a positive integer,typically

small). If k = 1, then the object is simply assigned to the class of that single nearest neighbour.

• In k-NN regression, the output is the property value for the object. This value is the average of the values of its k nearest neighbour.

KNN algorithm as derived as :

BEGIN

Input: D={(X1,C1),….,(Xn,Cn)}

X=(X1,…, Xn) new instance to be classified

For each labeled instance(Xi,Ci) calculate d(Xi,X)

Order d(Xi,X) from lowest to highest, (i-1,…,N)

Select the K nearest instances to X:DKX

Assign to X the most frequent class in DKX

End

LIMITATION OF EXISTING SYSTEM

- Physical security of machine
- Secure storage of castes votes
- Risk of vote tampering

PROPOSED SYSTEM

This proposed system overcomes all drawbacks in the manual voting. It is beneficial to both voter and election commission. This proposed system is the user friendly application which is efficient to the voter. This system has the facility to reduce the waiting time of the voter. This system provides the facility to the election commission to verify the voter details while voting. In this system finger print is used to identify the user. This method is to avoid the forgery voting system. This will helps to the election commission to conduct election. This system will helps the election commission board easily to conduct election and can be reduce election expense vote counting and the result declaration. The important benefit of the system is the voter can easily verify the candidate details and their booth details. the system also provide high level security to avoid illegal polling.

ALGORITHM

In machine learning,support vector machines (SVMs, also support vector networks) are supervised learningmodels with associated learning algorithmsthat analyse data used for classificationand regression analysis.Given a set of training examples, each marked as belonging to one or the other of two categories, an SVM training algorithm builds a model that assigns new examples to one category or the other, making it a non-probabilisticbinarylinear classifier(although methods such as Plattscalingexist to use SVM in a probabilistic classification setting). An SVM model is a representation of the examples as points in space, mapped so that the examples of the separate categories are divided by a clear gap that is as wide as possible. New examples are then mapped into that same space and predicted to belong to a category based on on which side of the gap they fall. In addition to performing linear classification, SVMs can efficiently perform a non-linear classification using what is called the kernel trick,implicitly mapping their inputs into high-dimensional feature spaces. when data are not labelled, supervised learning is not possible, and an unsupervised learningapproach is required, which attempts to find natural clustering of the datato groups, and then map new data to these formed groups. The clustering algorithm which provides an improvement to the support vector machines is called support vector clustering and is often used in industrial applications either when data are not labelled or when only some data are labelled as a pre-processing for a classification pass.

Support Vector Machine(SVM) is a machine learning tool that is based on the idea of large margin data classification. The tool has strong theoretical foundation and the classification algorithms based on it give good generalization performance. Standard implementations, though provide good classification accuracy, are slow and do not scale well. Hence they cannot be applied to large-scale data mining applications. They typically need large number of support vectors. Hence the training as well as the classification times are high.

Algorithm

Input : Input data matrix, class information

Output : Set of Basis vectors begin Repeat

For every candidate example - examples not in current set of BVs Include it in the model efficiently Observe the generalization performance on the regarding points End for candidate examples

ADVANTAGES

• This system provides the facility to the election commission to verify the voter details while Voting.

• In this system finger print is used to identify the user. This method is to avoid the forgery voting system

IV. SOFTWARE DESCRIPTION

Dot Net OVERVIEW Visual Studio .NET

Visual Studio .Net is the fast application improvement device for BASIC. Visual Studio .Net offers complete mix with ASP.NET and empowers to move and customize server controls and outline Web Forms as they ought to show up when client sees them. A percentage of alternate points of interest of making BASIC applications in Visual Studio .Net are

• Visual Studio .Net is a Rapid Application (RAD) apparatus. Rather than adding every control to the Web Form automatically, it serves to include these controls by utilizing tool stash, sparing programming endeavours.

• Visual Studio .Net backings custom and composite controls. Can make custom controls that embody a typical usefulness that may need to use in various applications.

• Visual Studio .Net makes a glorious showing of rearranging the creation and utilization of Web Services. Mush of the software engineer neigbhourly stuff (making all the XML-based reports) happens consequently, without much exertion on the developer's side.

• A characteristic based writing computer program is an effective idea that empowers Visual Studio .Net to mechanize a considerable measure of software engineer unpleasant assignments.

.NET programming dialects

The .NET Framework gives an arrangement of instruments that assistance to assemble code that works with the .NET

Framework, Microsoft gives an arrangement of dialects that are as of now .NET perfect. Fundamental is one of those dialects.

ASP.NET environment

Dynamic Server Pages were discharged by Microsoft to empower the formation of element pages taking into account client information and cooperation with a Web website. ASP.NET enhances the first ASP by giving code-behind. With ASP.NET and code-behind, the code and HTML can be isolated.

ASP.NET Web administrations are XML-construct benefits that are presented with respect to the Internet that can be gotten to by other Web administrations and Web administration customers.

ASP.NET

ASP.NET is more than the following form of Active Server Pages (ASP); it is a brought together Web advancement stage that gives the administrations important to designers to fabricate undertaking class Web applications. While ASP.NET is to a great extent sentence structure perfect with ASP, it likewise gives another programming model and foundation for more secure, versatile, and stable applications. ASP.NET is an assembled, .NET-based environment; you can creator applications in any .NET perfect dialect, including VisualBasic.NET, BASIC, and

JScript.NE T. Furthermore, the whole .NET Framework is accessible to any ASP.NET application. Engineers can undoubtedly get to the regale of these advances, which incorporate oversaw normal dialect runtime environment, sort wellbeing, legacy, et cetera.

ASP.NET has been intended to work consistently with WYSIWYG HTML editors and other programming instruments, including Microsoft Visual Studio .NET. Does this make Web improvement simpler, as well as gives every one of the advantages that these apparatuses bring to the table, including a GUI that designers can use to drop server controls onto a Web page and completely coordinated investigating backing. Engineers can browse the accompanying two elements when making a " ASP.NET application, Web Forms and Web administrations, or consolidate these in any capacity they see fit.

• Web Forms permits you to assemble intense structures based Web pages. At the point when building these pages, you can utilize ASP.NET server controls to make normal Ul components, and system them for basic assignments. These controls permit you to quickly assemble a Web Form out of reusable implicit or custom segments, rearranging the code of a page.

• An XML Web administration gives the intends to get to server usefulness remotely

Interoperability

Because computer systems commonly require interaction between newer and older applications, .NET Framework provides means to access functionality implemented in newer and older programs that execute outside .NET environment. Access toCOMcomponents is provided in System. Runtime. Interop Services and System. Enterprise Services namespaces of the framework; access to other functionality is achieved using the P/Invokefeature.

Common Language Runtime engine

Common Language Runtime(CLR) serves as the execution engine of .NET Framework. All .NET programs execute under the supervision of CLR, guaranteeing certain properties and behaviours in the areas of memory management, security, and exception handling.

Language independence

NET Framework introduces aCommon Type System, or CTS. CTSspecificationdefines all possibledata typesandprogrammingconstructs supported by CLR and how they may or may not interact with each other conforming toCommon Language Infrastructure(CLI) specification. Because of this feature, .NET Framework supports the exchange of types and object instances between libraries and applications written usingany conforming .NET language.

Framework Class Library

Framework Class Library(FCL) is a library of functionality available to all languages using .NET Framework. FCL providesclassesthat encapsulate a number of common functions, includingfilereading and writing,graphicrendering,databaseinteraction,XMLdocument manipulation, and so on. It consists of classes, interfaces of reusable types that integrate CLR.

Simplified deployment

.NET Framework includes design features and tools which help manage theinstallationofcomputer software to ensure that it does not interfere with previously installed software, and that it conforms to security requirements.

Security

The design addresses some of the vulnerabilities, such asbuffer overflows,which have been exploited by malicious software. Additionally, .NET provides a common security model for all applications.

Portability

While Microsoft has never implemented the full framework on any system except Microsoft Windows, it has engineered the framework to be platform agnostic, and cross-platform implementations are available for other operating systems (seeSilverlightand§ Alternative implementations).Microsoft submitted the specifications for CLI (which includes the core class libraries, CTS, and theCommon Intermediate Language),C#,and C++/CLI to bothECMAandISO,making them available as official standards. This makes it possible for third parties to create compatible implementations of the framework and its languages on other platforms.

Common Language Infrastructure (CLI)

The purpose of CLI is to provide a language-neutral platform for application development and execution, including functions forexception handling,garbage collection,security, and interoperability. By implementing the core aspects of .NET Framework within the scope of CLI, this functionality will not be tied to a single language but will be available across the many languages supported by the framework.

Microsoft's implementation of CLI is CLR.

Common Intermediate Language(CIL) code is housed inCLI assemblies

Security

.NET has its own security mechanism with two general features:Code Access Security(CAS), and validation and verification. CAS is based on evidence that is associated with a specific assembly. Typically the evidence is the source of the assembly. CAS uses evidence to determine the permissions granted to the code. Other code can demand that calling code is granted a specified permission. The demand causes CLR to perform a call stack walk: every assembly of each method in the call stack is checked for the required permission; if any assembly is not granted the permission a security exception is thrown.

.NET Framework includes a set ofstandardclass libraries. The class library is organized in a hierarchy ofnamespaces.Most of the built-in APIs are part of either System.* or Microsoft.* namespaces..NET class libraries are available to allCLI compliant languages..NET Framework class library is divided into two parts: FCL andBase Class Library(BCL).

FCL includes a small subset of the entire class library and is the core set of classes that serve as the basicAPIofCLR. Classes in mscorlib.dll and some classes in System.dll and System.core.dll are part of FCL. FCL classes are available in .NET Framework as well as its alternative implementations including.NET Compact Framework,Microsoft SilverlightandMono.

BCL is a superset of FCL and refers to the entire class library that ship with .NET Framework. It includes an expanded set of libraries, includingWindows Forms,ADO.NET,ASP.NET,Language Integrated Query,Windows Presentation Foundation,Windows Communication Foundationamong others. BCL is much larger in scope than standard libraries for languages likeC++,and comparable in scope tostandard libraries of Java.

FEATURES

Intuitive C++ based Language

Utilize a dialect displayed on C++ linguistic structure, instantly commonplace to C++ and Java designers, and also natural new dialect builds that incredibly streamline advancement errands

Reliable Interoperability

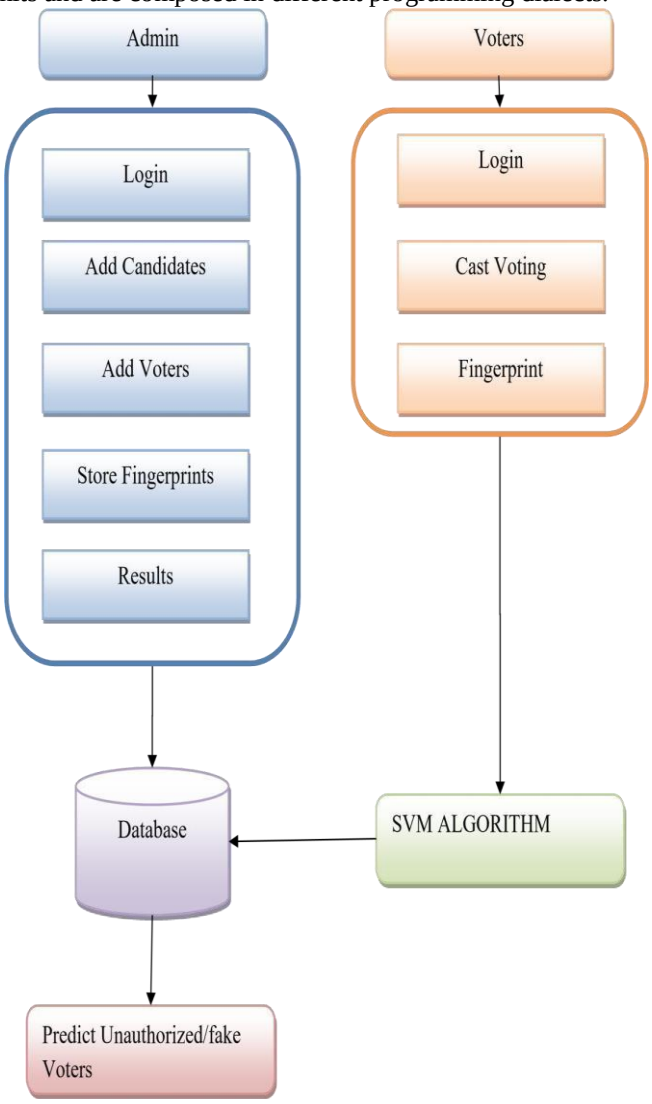
Utilize code to call local Windows APIs, use pre-constructed COM parts, and influence existing ActiveX controls to flawlessly coordinate existing applications and segments.

Advanced, Component-Oriented Language

Exploit inborn backing for properties, indexers, delegates, single and multidimensional clusters, propelled legacy, traits, forming, and XML remarks.

Capable Debugging and Testing Tools

ASP .NET incorporates a capable remote and multi-dialect debugger, empowering engineers to test applications and fabricate solid multi-level arrangements that compass process limits and are composed in different programming dialects.



NET FRAMEWORK CLASS LIBRARY

Addition experienced and capable, constructed in usefulness, including a rich arrangement of accumulation classes, systems administration bolster, multithreading bolster, string and customary expression classes, and wide backing for XML, XML patterns, XML namespaces, XSLT, XPath, and SOAP.

Powerful Web Development Environment:

Make Web-based arrangements in C# utilizing the mutual Web Forms Designer and XML Designer. Engineers can likewise utilize IntelliSense elements and label finish or pick the WYSIWYG manager for move and customize creating to construct intelligent Web applications.

. NET Framework

Microsoft planned VB from the beginning to exploit its new .NET Framework. The .NET Framework is comprised of four sections, the Common Language Runtime, an arrangement of class libraries, an arrangement of programming dialects, and the ASP.NET environment. The .NET Framework was

composed on account of three objectives. In the first place, it was planned to make Windows applications considerably more solid, while likewise furnishing an application with more prominent level of security.

The .NET Framework gives a component rich application environment, streamlined improvement and simple mix between various diverse advancement dialects. The .NET Framework is dialect nonpartisan. At present it bolsters C++, C#, Visual Basic, and Jscript. Microsoft's Visual Studio.NET is a typical advancement environment for the new .NET Framework.

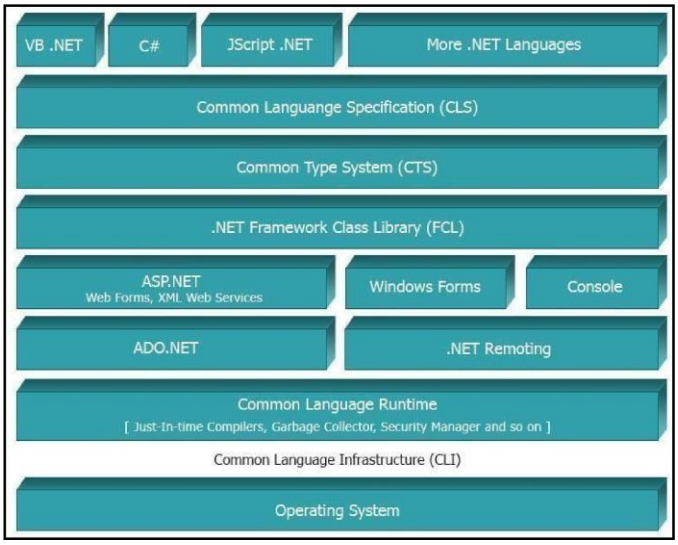
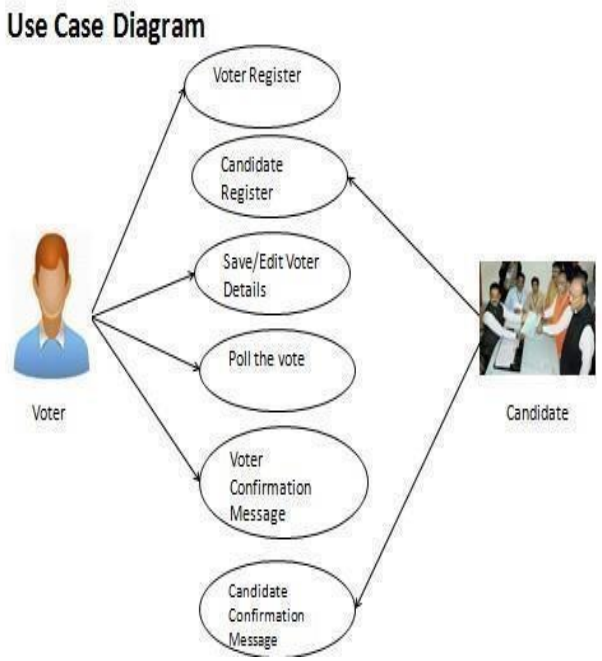


Fig 1 : ASP DOT NET ARCHITECTURE



Coordinating with IIS

IIS is the web server is utilized here. IIS 5.0 or above is key for the ASP.NET for the earth. This arrival of ASP.NET uses IIS 5.0 as the host environment.

IIS dependably accept that an arrangement of accreditations maps to a Windows NT record and uses them to verify a client. There are three various types of validation accessible in IIS 5.0: BASIC, DIGEST, and INTEGRATED WINDOWS

Authentication (NTLM or Kerberos). You can choose the kind of verification to use in the IIS regulatory administrations.

Web Service

Web administrations are ostensibly the most energizing and improve elements of Microsoft's. NET activity and they are liable to significantly influence the way business collaborate utilizing PC application. Rundown of conceivable Web administrations is as changes as the rundown of conceivable business opportunities. Web administration would normally perform a business administration, for example, client confirmation, Visa approval, valuing a derivates security, submitting a buy request for a stock or estimating a same-day shipment.

this administration to be called, there are various components that must be set up. To start with, the guest must' know how to call the administration. Second, the call must be made over the Web. At long last, the “web administration must know how to react”.

SQL Server 8.0

Social database frameworks are the most critical database frameworks utilized as a part of the product business today. A standout amongst the most remarkable frameworks is Microsoft SQL Server. SQL Server is a database administration framework created and showcased by Microsoft. It runs solely under Windows NT and Windows 95/98.

 The most critical parts of SQL Server 8 are:

- SQL Server is anything but difficult to utilize.
- SQL Server scales from a portable tablet to symmetric multiprocessor frameworks.
- SQL Server gives information warehousing elements that as of recently have just been accessible in Oracle and other more costly DBMSs.

 A database framework must give the accompanying elements:

- A mixture of client interfaces
- Physical information autonomy
- Logical information autonomy
- Query advancement
- Data honesty
- Concurrency control
- Backup and recuperation
- Security and approval

SQL Server is a Relational Database Management System. The SQL Server social dialect is called Transact-SQL.SQL is resource arranged dialect. This implies that SQL can inquiry numerous lines from one or more tables utilizing only one announcement. This component permits the utilization of this dialect at a coherently larger amount than procedural dialects. Another vital property of SQL is it’s

nonprocedurally. SQL contains two sub dialects DDL and DML.

The SQL Server chairman's essential device for connecting with the framework is Enterprise Manager. The Enterprise Manager has two primary purposes: Administration of the database server and Management of database items.

A Windows NT client record or a SQL server login name permits a client to sign into the SQL server framework. A client who hence needs to get to a database of the framework needs a database client record to work in the DB. In this manner clients must have a DB client represent each DB they need to utilize. In the event that there is no such record the client may be permitted to work in the DB under the visitor account."

A DBMS handles 2 sorts of honesty requirements:

 Declarative Integrity limitations characterized utilizing CREATE& ALTER TABLE articulations.

 Procedural honesty requirements took care of by triggers.

A trigger is an instrument that is conjured when a specific activity happens on a specific table. Every trigger has 3 general parts:

- A name
- The activity
- The execution

V.MODULES

A. LIST OF MODULES

- Admin Modules
- Admin initialization
- Maintain the voters details
- View/Add/Remove Voters details (Finger Print)
- Voting Count
- Send Confirmation message to candidate and voter

Candidate Module

- Candidate enrollment
- Confirmation message

Users Modules

- User Initialization
- Save/Edit Voters Details
- Voting
- Fingerprint Verification

B. MODULES DESCRIPTION

Admin ModulesAdmin Initialization

This module is handled by administrator alone. Admin have a unique login and password. After that admin have to login and then only he can access the entire process.

View/Add/Remove Voter details (Finger Print)

Admin can view/add/remove the voters details. In that stage admin only have rights to do all the modification in that database.

Maintain Voters Details

In these modules admin maintain the voters details. Because every voter's details saved into the centralized server admin maintain the details. Hackers may hack the voters details or modify their details so admin secure and maintain the details.

Voting Count

This modules will be used after polling by voters. This modules do only calculation process. Every voters submit their vote to some candidate, that count will add into our database and admin can only access it.

Send confirmation message to candidate and voter

The acknowledgement will be sent to the candidate and voter in the form of confirmation message through mobile.

Candidate Module, Candidate enrollment

The candidate should log on to the online voting system and enroll his/her appropriate details that has been required by the admin. The candidates can upload their photo as well as the symbol or logo certificates and as well as the nomination certificates.

User ModulesUser Initialization

Every user have to login into our website otherwise user have to register their details which includes their finger print. After completing registration user get a unique id and password after that only user can login along with their finger print. Save/ Edit Voters Details

Voting

Electronic voting is a voting system that uses electronic means of casting and counting votes It actual working of overall voting process. Workflow of voting system is as follows: Each voter has an unique ID number. For voting purpose The voter goes to a valve and receive a token, using the ID number. Each ID number is only grant to earn one token. Voter verification can be done by fingerprint recognition. Candidates list will displayed on web panel. The voter can vote online by dispatching the token to the account of the candidate they select. That voter cannot vote again, but the voter can examine the blockchain to verify that the vote was correctly recorded, and also see the total votes for each candidate at anytime.

Live result will displayed at admin panel. Each vote is verified by the server, if valid then it digitally signed by the server for valid transaction. Invalid truncation where drops after verification.

Fingerprint Verification

Fingerprint verification is a process of confirming that a user is who they claim to be. It is one of the well known biometrics solution for authentication on computerized system. It is also known as fingerprint matching. In our system fingerprint verification used to validate voters identity.

VI. CONCLUSION

This system focused on the analysis and development of fingerprint Voting Application using AI. The usability of this system is very high and it will be used in real time election process. It will definitely helpful for the users who wish to vote and the voting process will be made very easy by using this application. However, after having tested the system, The main purpose of the project is to avoid the critical process of Maintain Queue in the election time and reduce the time consuming to generate the voting result. The voter can easily

verify their booth detail before the election time and easily put their vote without any unwanted procedures. This system helps the election commission to easily update the voter details and verify if the correct voter has attend the voting system. Fingerprint verification used to authenticate voter's identity. This is useful towards secure voting system. As a result of our proposed system, the concept of AI and the security methodology which it uses, immutable hash chains, has become flexible to polls and elections. In future we Send to add additional functionality of image validation for the security constraint and uniqueness which will provide very strong security for the confidential information for voting.

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