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BLOCK CHAIN BASED IDENTITY VERIFICATION SYSTEM

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ABSTRACT

ItisbasedonCybersecuritydatasetCloudserviceshaveincreasedthenumberofdataownersithasbeenstoretheirencryptеddatainthecloud,whileanequalorgreaternumberofdatausersbasedindataretrieval.ItisbasedonBlockchainHybridECCandAESAlgorithmusingtheEncryptedandDecryptedthedataset. Encrypted File will be Stored in Cloud ServerandUserbasedonKeywordSearchingforAlgorithm.UserbasedEnterthekeywordthatalsoEncryptedQueryAfterthatSearchingEncryptedCloudServerFinallyRetrievaltheRelatedFileonQuerybased.UserbasedentertheParticularkeyuserdecryptsFilethebetterperformancebetterperformanceintermsofrecall,rankingprivacy, precision,searchingtime

Keywords: Blockchain, Self-sovereignIdentity,authenticationmechanism,Identifyproofing,claimverification.

I. INTRODUCTION

- Identitytheftistheunauthorizedacquisitionofanotherperson'sconfidentialinformationinordertomisuseit.
- Inanyregistrationprocesswehavetobringphysicaldocumentthatcausesunauthorizedaccessofuserspersonaldocument.
- ABLOCKCHAINTECHNOLOGYcansolvethisproblem.
- Inthis,asystemcalledBlockchain-basedpersonalIdentitysecuritySystemisproposedwherebyitisasystemwhichstoresanindividual'spersonal recordsonthe blockchain.
- Thissystemusesthesecurityfeaturesofblockchaintoalloweveryonetoknowwhohasaccessto theirdata

II. METHODOLOGY

In this research, our motivation is to develop a concept that maximizes the transparency as well as the controloverpersonaldataforusers.MyDatahasproposedahuman-centricapproachthatempowerstheuserbyplacinghimin thecenter ofhisdataecosystem.

Themainfocushereisnotowningthedata(i.e.storingthedataontheuser'sownserver),buttocontrolthedataflowfrom datatoserviceproviderbycontrollingtheassociatedconsentsfromtheusertotherespectiveservice.While the approach of My Data, requires a significant shift in the ecosystem and that service providers agree onthis way of handling data, we sought to develop an approach that can enable a fair balance in the ecosystemwithoutsupportfromtheserviceprovider,but onlythroughtechnologyandlegislativemeans.

III. MODELINGANDANALYSIS

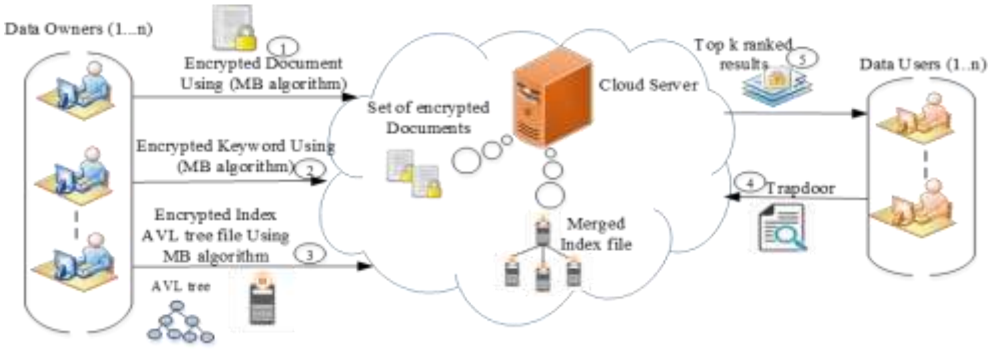

Data Owners (1...n)
1
Encrypted Document Using (MB algorithm)
Encrypted Keyword Using (MB algorithm)
2
Encrypted Index AVL tree file Using MB algorithm
3
AVL tree
Set of encrypted Documents
Cloud Server
Merged Index file
Top k ranked results
5
Data Users (1...n)
4
Trapdoor

Figure1: Architecture

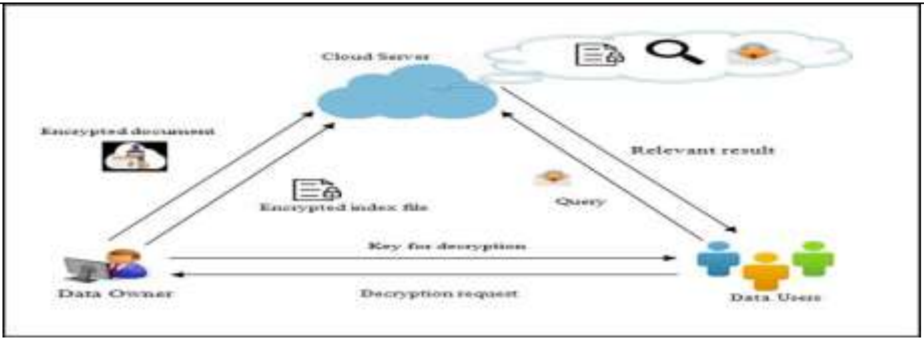


Figure2: BlockchainBasedIdentityVerificationSystem

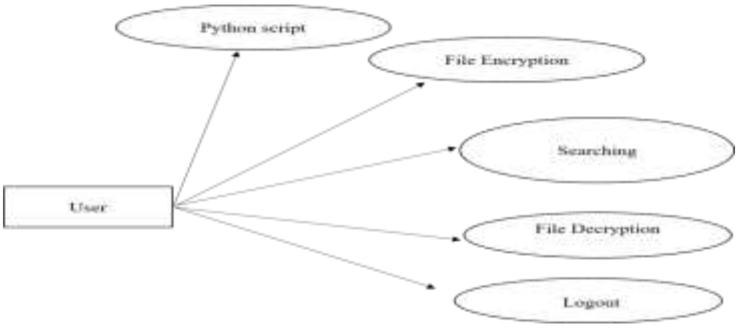


Figure3: UseCaseDiagram

- Auserwants toaccessaservice,whichtheproviderrequestsinformationfor
- Theuserauthenticateshimselfto the personaldatastoragethroughhisprivatekey
- A consent transaction is created on the blockchain with a shared identity of the service provider andtheuser.This gives theprovideraccesstothatdata point aswellas the identityblockchain
- The service provider can read run the information through the stored hash and verify the informationtheuser has successfullyidentifiedhimself andthe providerhasonlythe informationneeded.

IV. DATASELECTION

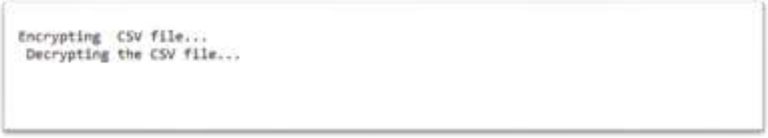
- Cybersecurityistheuseoftechnologies,processes,andcontrolstodefendagainstcyber-attacksonsystems,networks,programs,devices,anddata.
- Itsgoalistoreducetheriskofcyber-attacksandtoprotectagainstunauthorizeduse ofsystems,networks,andtechnologies.
- CybersecurityProtocolsReferenceandKeywords
- Inthisstep,wehavetoloadthedatawiththehelpofpanda’spackages

V. DATAPREPROCESSING

- Datapre-processingistheprocessofremovingtheunwanteddatafromthedataset.
- Prerocessingdatatransformationoperationsareusedtotransformthedatasetintoastructuresuitableformachinelearning.
- Missingdataremoval:Inthisprocess,thenullvaluessuchasmissingvaluesandNanvaluesarereplacedby0.
- asvariableswithafinitesetoflabelEncodingCategoricaldata:Thatcategoricaldataisdefinedvalues.

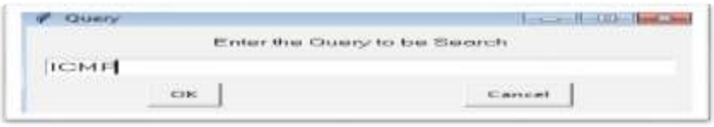
VI. HYBRID ECCAND AESALGORITHM

- ECCElliptic CurveCryptograph AlgorithmbasedonPublic andPrivateKey
- ECCand AESbasedonEncrypted data
- ThequickexplanationisthatkeysusingEllipticCurveCryptography(ECC)areasymmetric(publicandprivate),whereasAES-256usesasymmetric cypher(key)
- ECCand AESbased onitPublicand Privatekey



```
Encrypting  CSV file...
 Decrypting the CSV file...
```

- HybridAESandECCbasedon **128 bitkey** GeneratedForEncrypteddataWise



Query

Enter the Query to be Search

ICMR

VII. Key Generation

- HybridAESand ECCbasedon128bitkeyGeneratedForEncrypteddataWise
- Aencryption systemisdesigned bycombiningthecharacteristicsoftheAESand ECC
- WhichCansolveSecurityProblemitself
- Efficientlyrealizetheinformation,dataencryption,signature,andidentityverification

VIII. Cloud Me

- EncryptedFileWillbeStored indataforSecuritypurpose

  AcloudcomputingmodelinwhichdataisstoredontheInternetviaacloudcomputingproviderwho managesand operatesdata storage asa service CloudServer willbeusedonCloudme Software

IX. RESULTSANDDISCUSSION

Regardingthetestingwhichispartofthetransitionphase,thereweretwotypesoftestingdone:systemandacceptancetesting.ThesummaryoftestcasesisinTable2,wherebytherewereatotalof18casesforeachofthefunctionalitiesinthe web application as well as the Android application. The functionalities are as follows: authority, requester and userregistration,authorityand userlogin,uploaduser details, andrequestuserdetails.

X. CONCLUSION

HybridECCand AESAlgorithmusingtheEncryptedandDecryptedthedataset

Encrypted File will be Stored in Cloud Server and User based on Semantic Searching method Algorithm.UserbasedkeywordEnteringisdonetoretrievethecorrespondingdatafilefromthecloudstorage.

FinallyRetrievetheRelatedFilebasedonQuery.ThiswilleasilyFindout**CybersecurityProblem**like,thefaultfilewillbedetected

XI. REFERENCES

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