CLOUD DEPLOYMENT

TEAM ID	NM2023TMID04391
PROJECT TITTLE	BLOCKCHAIN POWERED LIBRARY MANAGEMENT

1. Introduction

- Blockchain is a new and emergent technology that is expected to change the way current markets work.
- It is a distributed digital ledger and is decentralized. With the current working capacity of blockchain, it has the potential to be the operating system of smart cities.
- Blockchain is technology that is open source and distributed and is used to record transactions between parties. It provides a way to develop a system that is both verifiable and secured.
- Blockchain is open source, so different versions of blockchain are available on the market. Each version is developed depending upon the different needs of the various industries.
- Blockchain is neither owned nor singly controlled by any one authority [1]. Blockchain technology is evolving at a swift pace. It started with Bitcoin, and now there are many types of blockchain. Organizations are developing different versions of blockchain depending upon their need and benefits.
- The critical development in blockchain innovation is that it permits its member to transfer resources across the Internet without the requirement of an incorporated outsider.
- The blockchain concept was created as the fundamental innovation behind the cryptocurrency called Bitcoin. Blockchain technology is currently being tested in many different asset management and procurement services for opportunities and has already led to many applications.

- Similar to today's sophisticated flow of goods, there is a lack of transparency and trust. There are many intermediate people associated with high documentation requirements, which leads to time-consuming processe.
- Still, with a distributed blockchain system, the different interests of participants in a feed chain can be linked to a public register. Blockchain eliminates disclosure and accountability issues.
- Blockchain technology demonstrates high flexibility and has led to lasting changes in business models that could prove to be more profitable than existing ones [2].
- Blockchain is an innovation that permits deals among numerous parties to be addressed in a dependable, non-impermanent, and appropriately secure way.
- A blockchain fills in as a grown-up trail to check the provenance in the food inventory network. In this way, it will prevent lawsuits.
- In international supply chains, blockchain will help if all the nations have a completely working general set of laws and execute the laws.
- The following are some of the prominent contributions of our work:

- Providing a systematic review of Blockchain technology with respect to Cloud Computing
- Exemplifying prominent works discussing the application of Blockchain–Cloud integration
- Providing a detailed bibliometric analysis across five real-world application areas of Blockchain–Cloud integration along with a reference architecture
- Exploring three key areas of Cloud computing which have had the maximum impact of Blockchain integration followed by a bibliometric analysis
- Identifying the top three allied technologies which complement Blockchain–Cloud integration for creating new-age solutions followed by their bibliometric analysis
- Providing a structured overview and description of publication patterns for Blockchain-as-a-Service and leading Cloud Service Providers rendering Blockchain integrated Cloud services.

2. Cloud Computing and Deployment Models

- Cloud computing is an incredible model that enables clients and associations to purchase the administrations they need as indicated by their requirements.
- This model offers many types of assistance, such as stocking, arrangement, and helpful admittance to web administrations
- Load adjusting is a typical issue in the cloud, making it hard to keep up with the exhibition of utilizations connecting Quality of Service (QoS) estimation and to meet the service level agreement (SLA).
- Cloud computing is an inventive organization-based framework that can deal with various solicitations from the cloud and offer quick support to clients.
- It is a computation and preparation model utilized in various parts of the world. Distributed computing can be utilized to further develop the estimating cycle utilizing high.
- The characterization of cloud deployment models is performed, keeping in mind where the deployment of the model resides and who commands the network
- Each model has a variety of necessities, and picking a model to fulfill the requirement of the client or organization is significant.
- of the main deployment choices that you will have to make is which model to choose as per your requirements and needs.
- cloud-deployment model offers different features or services and has a different variety of alternatives depending upon its costs.
- To select the correct model for your organization, you should make an intelligent choice.
- last decade has seen significantly more organizations become dependent on Cloud computing for better effectiveness and adaptability, as well as faster time to take products to the market.
- However, the response as to which cloud model is the best fit for an organization relies upon the organization's demands and needs.
- It assists them with accomplishing the long-term advanced objectives as a feature of their system.
- Picking the right one from the different kinds of cloud deployment models is fundamental.

- It would guarantee your business is provided the protection, security, adaptability, consistence, compliance, and cost-adequacy it needs. Different types of cloud deployment models are listed below.

2.1. Private Cloud

- Private cloud, as its name suggests, is the cloud that is maintained, controlled, and managed by an organization.
- Usually, the entire infrastructure is in the datacenter that an organization controls or manages.
- In this way, the organization is liable for procurement, upkeep, and support services. Resources in the private cloud are confined within a single organization.
- A private cloud is a committed environment for one (client). You do not impart the infrastructure to some other clients. When we need our information to be secure and we want assets that ought to be restricted to a specific measure of groups, private clouds are preferred
- Private clouds are utilized by a restricted measure of individuals, e.g., where an association sets up its cloud only for the utilization of its workers.
- the individuals working in that association can access it. The information put away on the cloud is available just to the chosen group of individuals with the components of improved security, quality, and protection. Generally, all the equipment is yours
- A few examples of private clouds are IBM Bluemix, Rackspace, Red Hat OpenStack, VMware, and Microsoft Azure Stack.
- The private cloud is beneficial for putting away corporate information where just an approved work force can gain access to resources, i.e., data privacy is important in this type of cloud.
- clouds are also great for security purposes. There are more significant levels of safety and better access, as resources are distributed inside the same organization.

2.2. Public Cloud

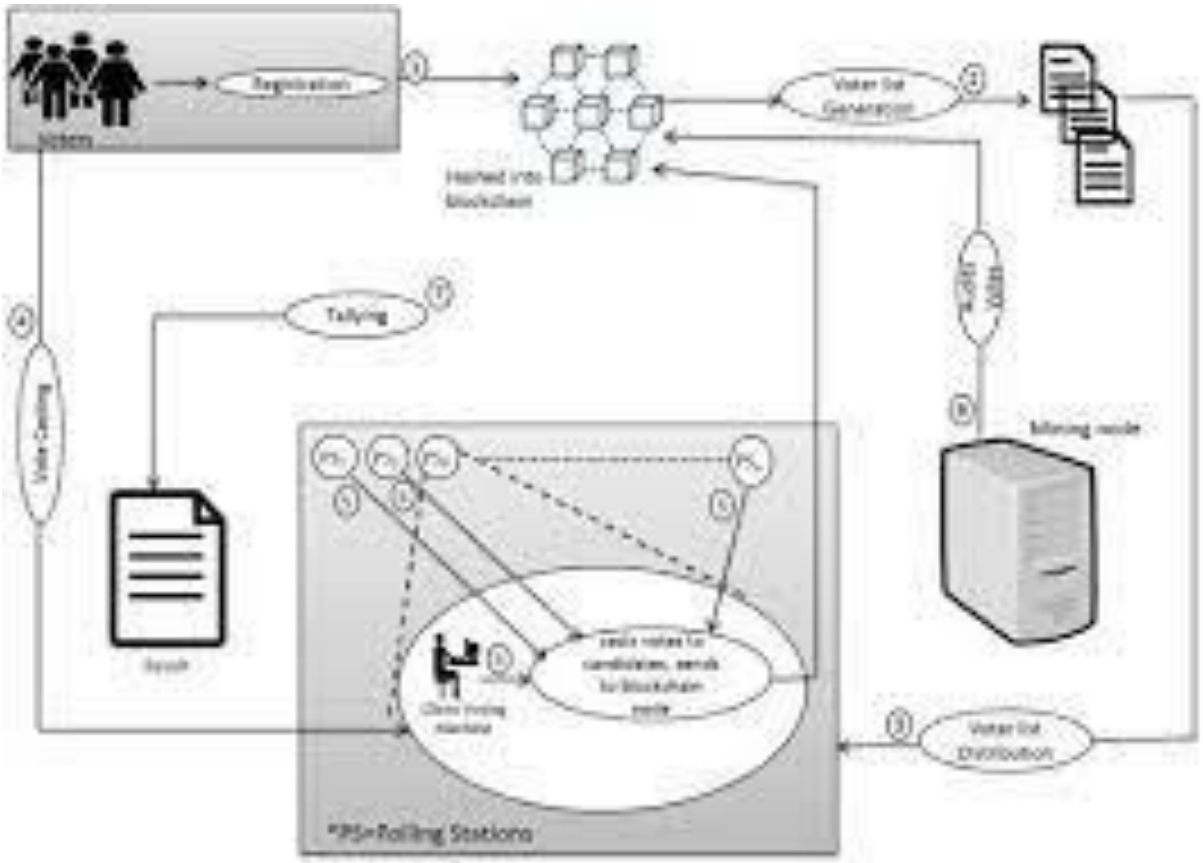
- The public cloud is accessible for everybody, for example, every last one of us is qualified for use and can store information. Generally, single clients utilize it.

2.4. Community Cloud

- The community cloud is used for a gathering of individuals that have comparative interests, regularly known as a community
- At the point when at least two associations have comparative necessities, they counsel to a community cloud that holds services that are normal for organizations.
- can end up being of extraordinary advantage to the organizations that are dealing with joint tasks/projects. Data transmission or limits on the capacity are fixed in this type of deployment model.
- This cloud is committed to a couple of organizations from similar communities
- A community cloud is neither public nor private, as it is not open for the public, and it is also not governed by a single organization or vendor but is governed by group of organizations.
- A community cloud is shared by a gathering of associations that have a common reason or objective. The cloud is mostly used to assist them with accomplishing that objective.
- community cloud is ideal where investment is smaller and setup benefits are good.

2.5. Multi-Cloud

- In a Multi-Cloud model, each cloud vendor is used in turn. This model uses private and public clouds, and is very much similar to a Hybrid cloud. You would utilize more than one type of cloud in this model.
- The Multi-cloud model gives you far better accessibility of services than any other type of deployment model.
- One more justification behind utilizing a multi-cloud is the point at which you want a particular infrastructure or services from one public cloud and explicit help from another public cloud.
- The Multi-cloud model provides various options to the organizations for expanding service dependability.


Registration
Voter list Generation
Hashed into Blockchain
Tallying
Vote Casting
Result
Mining node
Voter list Distribution
*PS=Polling Stations