**SMT.TANUBEN AND DR. MANUBHAI TRIVEDI COLLEGE OF INFORMATION SCIENCE [BCA]**

AFFILIATED TO

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SURAT (VNSGU)

**Seminar report**

**On**

**Blockchain**

**As partial requirement for the degree**

**Of**

**Bachelor of computer application [BCA]**

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Guided by:submitted by:

Prof. BHAUTIKA PATEL PREET S. PATEL (exam no:2019047348)

Organization

SMT. TANUBEN & DR. MANUBHAI TRIVEDI COLLEGE OF INFORMATION SCIENCE (B.C.A.)

WADIA WOMEN’S COLLEGE CAMPUS, ATHWALINES, SURAT – 395001

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Your Sincerely

Preet S. Patel

**Personal profile**

|  |  |
| --- | --- |
| Field | Descriptions |
| Name: | PATEL PREETKUMARI SHRIKESHBHAI |
| Address: | 106, Sarvodaya Nagar, Bhimpore, Airport Road, Surat |
| Contact No: | 9558432205 |
| Email ID: | patelpreet@gmail,com |
| Study Center: | **SMT.TANUBEN AND DR. MANUBHAI TRIVEDI COLLEGE OF INFORMATION SCIENCE [BCA]** |
| Exam No: | 2019047348 |
| Academic Year: | 2021-2022 |

**Abstract**

A blockchain is a **distributed** database that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format. Blockchains are best known as Bitcoin for their crucial role in cryptocurrency systems, such as for maintaining a secure and decentralized record of transactions. The innovation with a blockchain is that it guarantees the fidelity and security of a record of data and generates trust without the need for a trusted third party.

One key difference between a typical database and a blockchain is how the data is structured. A blockchain collects information together in groups, known as **Blocks** that hold sets of information. Blocks have certain storage capacities and, when filled, are closed and linked to the previously filled block, forming a chain of data known as the blockchain. All new information that follows that freshly added block is compiled into a newly formed block that will then also be added to the chain once filled.

A database usually structures its data into tables, whereas a blockchain, like its name implies, structures its data into chunks (blocks) that are strung together. This data structure inherently makes an irreversible time line of data when implemented in a decentralized nature. When a block is filled, it is set in stone and becomes a part of this time line. Each block in the chain is given an exact time stamp when it is added to the chain.

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**Introduction**

A blockchain is a distributed, **peer-to-peer** database that hosts a continuously growing number of transactions. Each transaction, referred to as a “**block**,” is secured through cryptography, timestamped, and validated by every authorized member of the database using consensus algorithms (i.e., a set of rules).

A transaction that is not validated by all members of the database is not added to the database. Every transaction is attached to the previous transaction in sequential order, creating a chain of transactions (or blocks). A transaction cannot be deleted or edited, thereby creating an immutable audit trial. A transaction can only be changed by adding another transaction to the chain.