Assignment 1

- **Explore various popular blockchain applications. Create a list of those applications and the industries/businesses they are impacting.**

  ➢ **Asset Management**

  Blockchain plays a big part in the financial world and it is no different in asset management. In general terms, asset management involves the handling and exchange of different assets that an individual may own such as fixed income, real estate, equity, mutual funds, commodities, and other alternative investments. Normal trading processes in asset management can be very expensive, especially if the trading involves multiple countries and cross border payments. In such situations, Blockchain can be a big help as it removes the needs for any intermediaries such as the broker, custodians, brokers, settlement managers, etc. Instead, the blockchain ledge provides a simple and transparent process that removes the chances of error.

  ➢ **Cross-Border Payments**

  Have you ever tried to make cross-border payments in different currencies from one country to another? This can be a long-complicated process and it can take many days for the money to arrive at its destination. Blockchain has helped in simplifying these cross-border payments by providing end-to-end remittance services without any intermediaries. There are many remittance companies that offer Blockchain services which can be used to make international remittances within 24 hours.

  ➢ **Healthcare**

  Healthcare is also a domain where Blockchain technology has been used for storing the details of the patients. This technology ensures that anyone accessing this Blockchain can access patients' data. This database will be highly secure and for checking the data related to the patient-doctor has to log in there with the public key and details, and he can check the patients' data.

➢ **Cryptocurrency**

Perhaps one of the most popular applications of Blockchain is in Cryptocurrency. Who hasn't heard about bitcoin and its insane popularity. One of the many advantages of cryptocurrency using blockchain as it has no geographical limitations. So crypto coins can be used for transactions all over the world. The only important thing to keep in mind is exchange rates and that people may lose some money in this process. However, this option is much better than regional payment apps such as Paytm in India that are only relevant in a particular country or geographical region and cannot be used to pay money to people in other countries.

➢ **Birth and Death Certificates**

There are many people in the world who don't have a legitimate birth certificate especially in the poorer countries of the world. According to UNICEF, one-third of all the children under the age of five don't have a birth certificate. And the problem is similar to death certificates as well. However, Blockchain can help in solving this problem by creating a secure repository of birth and death certificates that are verified and can only be accessed by the authorized people.

➢ **Online Identity Verification**

It is not possible to complete any financial transactions online without online verification and identification. And this is true for all the possible service providers any user might have in the financial and banking industry. However, blockchain can centralize the online identity verification process so that users only need to verify their identity once using blockchain and then they can share this identity with whichever service provider they want. Users also have the option to choose their identity verification methods such as user authentication, facial recognition, etc.
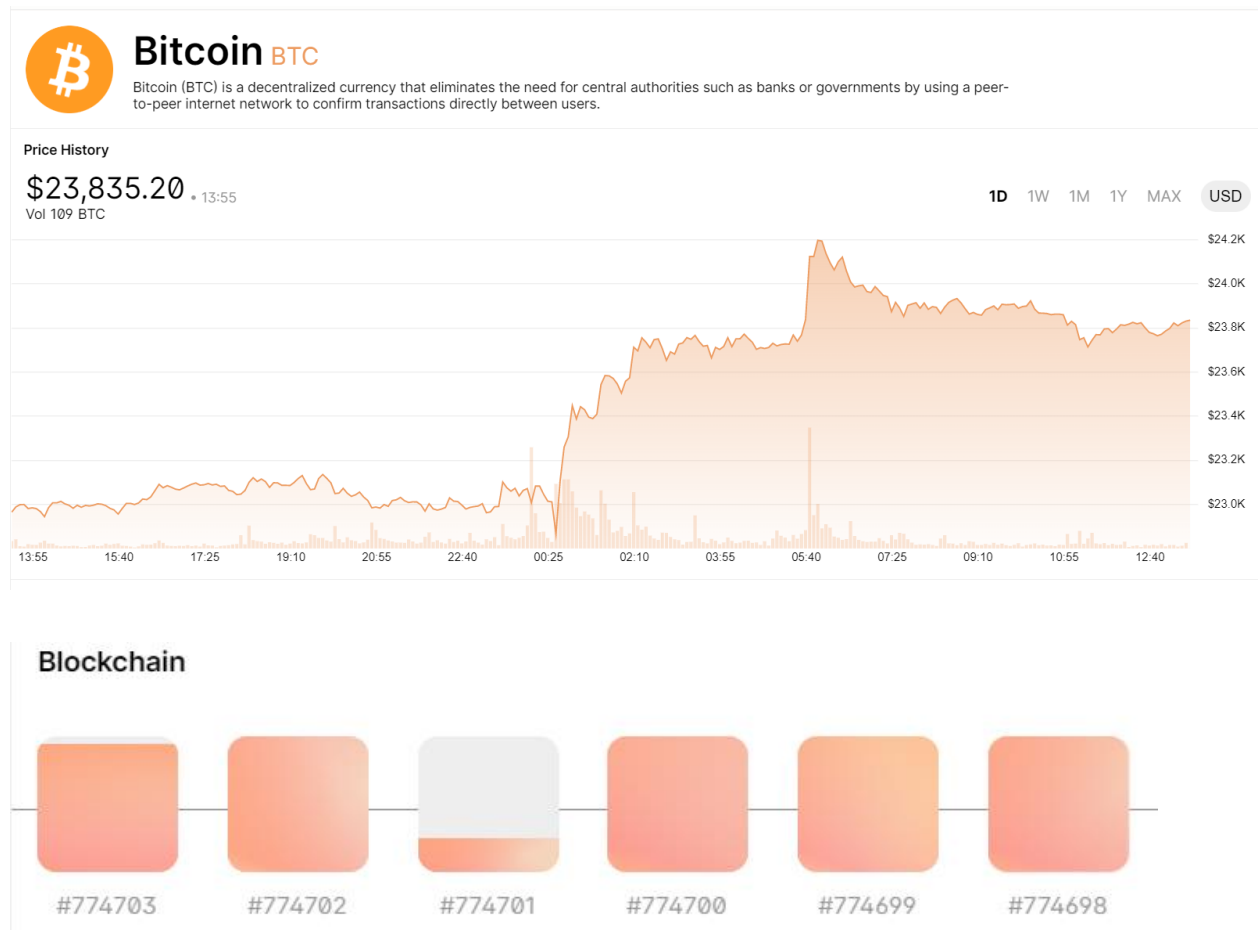
➢ **Internet of Things**

Internet of things is a network of interconnected devices that can interact with others and collect data that can be used for gaining useful insights. Any system of "things" becomes IoT once it is connected. The most common example of IoT is perhaps the Smart Home where all the home appliances such as lights, thermostat, air conditioner, smoke alarm, etc. can be connected together on a single platform. But where does Blockchain come into this? Well, Blockchain is needed for providing security for this massively distributed system. In IoT, the security of the system is only as good as the least secured device which

is the weak link. Here Blockchain can ensure that the data obtained by the IoT devices are secure and only visible to trusted parties.

➢ **Copyright and Royalties**

Copyright and royalties are a big issue in creative sectors like music, films, etc. These are artistic mediums and it doesn't sound like they have any link with Blockchain. But this technology is quite important in ensuring security and transparency in the creative industries. There are many instances where music, films, art, etc. is plagiarized and due credit is not given to the original artists. This can be rectified using Blockchain which has a detailed ledger of artist rights. Blockchain is also transparent and can provide a secure record of artist royalties and deals with big production companies. The payment of royalties can also be managed using digital currencies like Bitcoin.

- **Explore the bitcoin blockchain on blockchain.info and prepare a document containing your inferences.**

Bitcoin Block 774,702

Mined on February 02, 2023 01:40:13 • All Blocks

Ultimus

Coinbase Message •
▓/ultimus/783▓▓;▓5▓ 9z>mmT#"▓80:Obt2a|▓>gX▓▓g0▓,8▓L▓P
h▓▓▓▓▓▓▓▓▓▓▓▓▓<▓▓S▓▓▓▓▓▓

A total of 4,770.65 BTC ($113,595,192) were sent in the block with the average transaction being 3.0522 BTC ($72,676.73). Ultimus earned a total reward of 6.25 BTC $148,820. The reward consisted of a base reward of 6.25 BTC $148,820 with an additional 0.1903 BTC ($4,531.28) reward paid as fees of the 1,563 transactions which were included in the block.

Details

Hash	00000-aa26d	Depth	2
Capacity	117.51%	Size	1,232,147
Distance	20m 35s	Version	0×2001e000
BTC	4,770.6502	Merkle Root	7d-85
Value	$113,595,192	Difficulty	39,350,942,467,772.63
Value Today	$113,728,818	Nonce	3,686,629,907
Average Value	3.0522394291 BTC	Bits	386,344,736
Median Value	0.02706560 BTC	Weight	3,993,353 WU
Input Value	4,770.84 BTC	Minted	6.25 BTC
Output Value	4,777.09 BTC	Reward	6.44032233 BTC
Transactions	1,563	Mined on	Feb 02, 2023, 1:40:13 PM
Witness Tx's	1,257	Height	774,702
Inputs	6,788	Confirmations	2
Outputs	4,480	Fee Range	0-450 sat/vByte
Fees	0.19032233 BTC	Average Fee	0.00012177
Fees Kb	0.0001545 BTC	Median Fee	0.00003536
Fees kWU	0.0000477 BTC	Miner	Ultimus

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Bitcoin Transaction

Broadcasted on 02 Feb 2023 01:51:40 GMT+5:30

Hash ID
1ef0c77c569d426fbb7bfe955bf41f28def6e71c8c8
243b4d4f427c9ce8af31a

Amount	0.00360029 BTC • $85.78
Fee	4,102 SATS • $0.98
From	32rbP-mZ5PC
To	2 Outputs

Pending

This transaction paid ~40% more in fees due to inefficiencies associated with older wallets.

Learn More

Summary

This transaction was first broadcasted on the Bitcoin network on February 02, 2023 at 01:02 AM GMT+5:30. This transaction is unconfirmed. The current value of this transaction is now $85.78.

Advanced Details

Hash	1ef0-f31a	Time	02 Feb 2023 01:51:40
Age	1m 28s	Inputs	1
Input Value	0.00364131 BTC	Outputs	2
	$86.75	Output Value	0.00360029 BTC
Fee	0.00004102 BTC		$85.78
	$0.98	Fee/B	10.153 sat/B
Fee/VB	19.258 sat/vByte	Size	404 Bytes
Weight	851	Weight Unit	4.820 sat/WU
Coinbase	No	Witness	Yes
RBF	No	Locktime	0
Version	1	BTC Price	$23,825.09

Overview   JSON

From

1   32rbPCpFNhZt7h19iWKPk3WbdB28UmZ5PC
0.00364131 BTC • $86.75

To

1   bc1q0utan50se42nduuqdwq7cwlwkw2n5dxnyjaxqq
0.00126056 BTC • $30.03

2   32rbPCpFNhZt7h19iWKPk3WbdB28UmZ5PC
0.00233973 BTC • $55.74