Below are the most asked problems in Adobe, Microsoft, Amazon and Google which are on GeekforGeeks:

Arrays

1. Subarray with given sum
2. Count the triplets
3. Kadane’s Algorithm
4. Missing number in array
5. Merge two sorted arrays
6. Rearrange array alternatively
7. Number of pairs
8. Inversion of Array
9. Sort an array of 0s, 1s and 2s
10. Equilibrium point

String

1. Reverse words in a given string
2. Permutations of a given string
3. Longest Palindrome in a String
4. Recursively remove all adjacent duplicates
5. Check if string is rotated by two places
6. Roman Number to Integer
7. Anagram
8. Remove Duplicates
9. Form a Palindrome
10. Longest Distinct Characters in the string

Linked list

1. Finding middle element in a linked list
2. Reverse a linked list
3. Rotate a Linked List
4. Reverse a Linked List in groups of given size
5. Intersection point in Y shaped linked lists
6. Detect Loop in linked list
7. Remove loop in Linked List
8. n’th node from end of linked list
9. Flattening a Linked List
10. Merge two sorted linked lists

Stack and queue

1. Parenthesis Checker
2. Next larger element
3. Queue using two Stacks
4. Stack using two queues
5. Get minimum element from stack
6. LRU Cache
7. Circular tour
8. First non-repeating character in a stream
9. Rotten Oranges
10. Maximum of all subarrays of size k

Tree

1. Print Left View of Binary Tree
2. Check for BST
3. Print Bottom View of Binary Tree

4. Print a Binary Tree in Vertical Order
5. Level order traversal in spiral form
6. Connect Nodes at Same Level
7. Lowest Common Ancestor in a BST
8. Convert a given Binary Tree to Doubly Linked List
9. Write Code to Determine if Two Trees are Identical or Not
10. Given a binary tree, check whether it is a mirror of itself

Heap

1. Find median in a stream
2. Heap Sort
3. Operations on Binary Min Heap
4. Rearrange characters
5. Merge K sorted linked lists
6. Kth largest element in a stream

Recursion

1. Flood fill Algorithm
2. Number of paths
3. Combination Sum – Part 2
4. Special Keyboard
5. Josephus problem

Hashing

1. Relative Sorting
2. Sorting Elements of an Array by Frequency

3. Largest subarray with 0 sum
4. Common elements
5. Find all four sum numbers
6. Swapping pairs make sum equal
7. Count distinct elements in every window
8. Array Pair Sum Divisibility Problem
9. Longest consecutive subsequence
10. Array Subset of another array

Graph

1. Depth First Traversal
2. Breadth First Traversal
3. Detect cycle in undirected graph
4. Detect cycle in a directed graph
5. Topological sort
6. Find the number of islands
7. Implementing Dijkstra
8. Minimum Swaps
9. Strongly Connected Components
10. Shortest Source to Destination Path

Greedy

1. Activity Selection
2. N meetings in one room
3. Coin Piles
4. Maximize Toys
5. Page Faults in LRU

6. Largest number possible
7. Minimize the heights
8. Minimize the sum of product
9. Huffman Decoding
10. Minimum Spanning Tree

Dynamic programming

1. Minimum Operations
2. Max length chain
3. Minimum number of Coins
4. Longest Common Substring
5. Longest Increasing Subsequence
6. Longest Common Subsequence
7. 0 – 1 Knapsack Problem
8. Maximum sum increasing subsequence
9. Minimum number of jumps
10. Edit Distance

Divide and conquer

1. Find the element that appears once in sorted array
2. Search in a Rotated Array
3. Binary Search
4. Sum of Middle Elements of two sorted arrays
5. Quick Sort
6. Merge Sort
7. K-th element of two sorted Arrays

Backtracking

1. N-Queen Problem
2. Solve the Sudoku
3. Rat in a Maze Problem
4. Word Boggle
5. Generate IP Addresses

Bit manipulations

1. Find first set bit
2. Rightmost different bit
3. Check whether K-th bit is set or not
4. Toggle bits given range
5. Set kth bit
6. Power of 2
7. Bit Difference
8. Rotate Bits
9. Swap all odd and even bits
10. Count total set bits

BLOCKCHAIN TECHNOLOGY

NAME : UJJWAL CHAUHAN
BRANCH / COURSE : B.TECH CSE
COURSE ENROLLMENT DATE : 18.10.2022
COURSE DURATION : 8 WEEKS
SECTION : H
ROLL NO. : 66
ENROLLMENT NO. : 21011497

THE HISTORY OF BITCOIN

2008	2009	2010	2011
Idea was published under the pseudonym Satoshi Nakamoto	Start of the Bitcoin Network	Fist cryptocurrency stock exchange is launched	One Bitcoin equals one USD

THE HISTORY OF BITCOIN

2013	2014	2017
1 Bitcoin equals 100 USD	Microsoft accepts Bitcoin	1 Bitcoin equals 10,000 USD

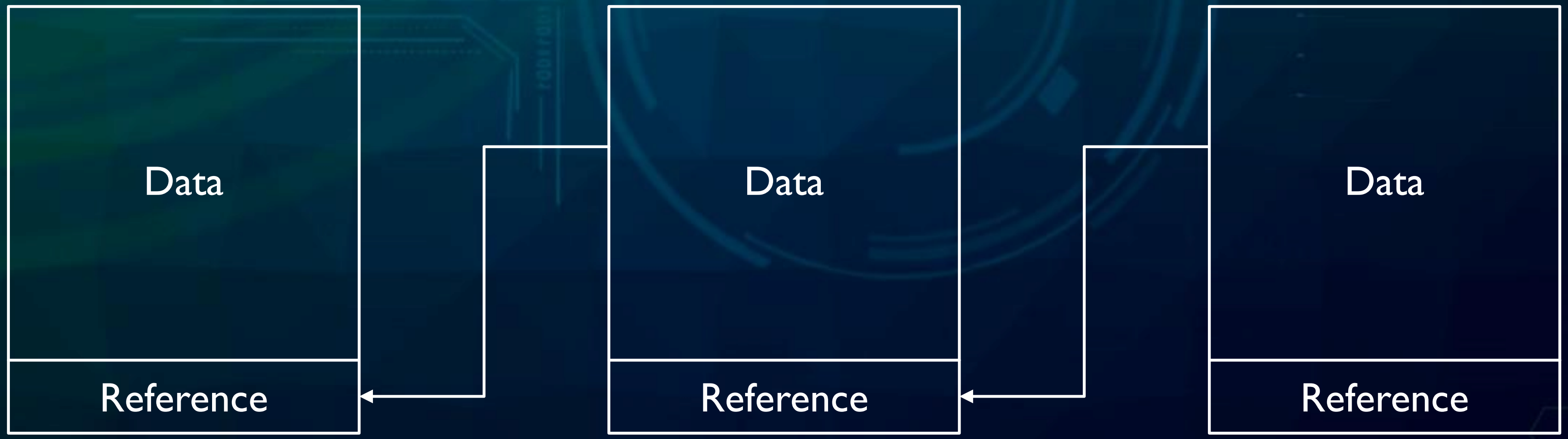
BITCOIN ≠ BLOCKCHAIN

Is an application of blockchain technology

Is the underlying datastructure, which can be used for many things, including cryptocurrencies

WHAT IS A BLOCKCHAIN?

A blockchain is a growing list of data blocks that are linked together.

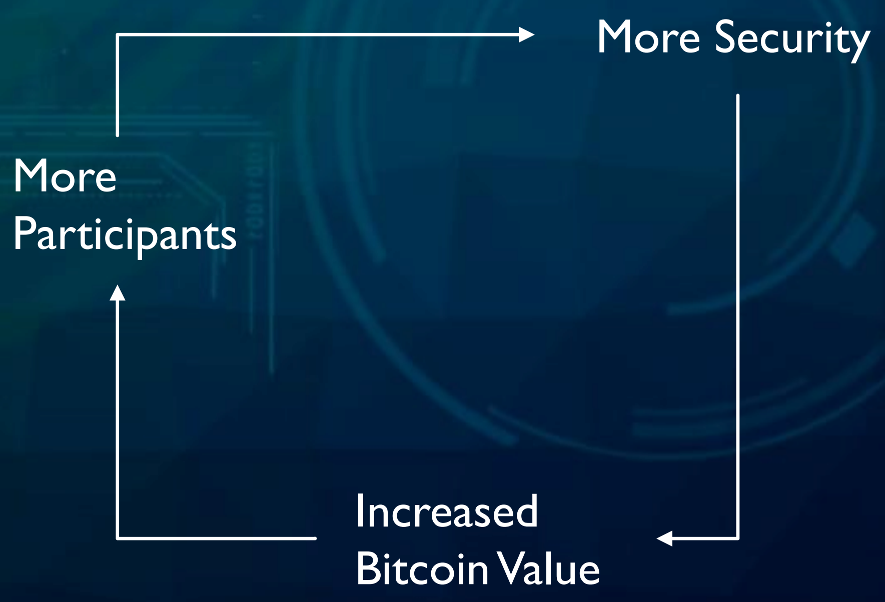


BITCOIN ECOSYSTEM

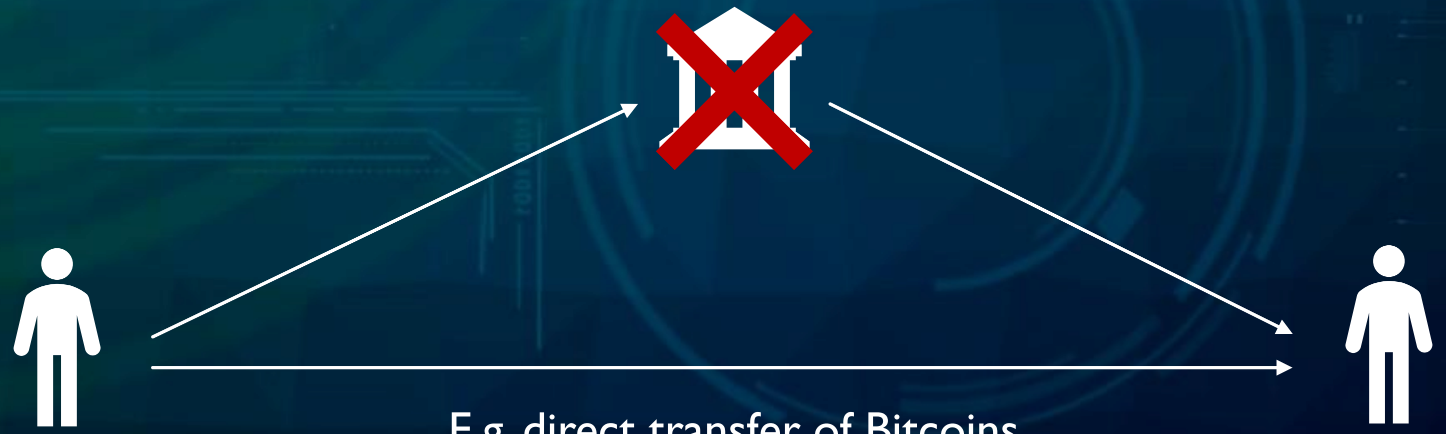
A public network in which anyone, including a malicious participant, can participate without restriction.

Even though it is not organized by a central authority, it works!

BITCOIN ECOSYSTEM



CUTTING THE MIDDLEMAN



E.g. direct transfer of Bitcoins

BUILDING CONSENSUS

After a finite time, all participants agree on a single state.

E.g. on who owns how many Bitcoin.

CREATING WITNESSES

If something is published on a public blockchain, all participants become witnesses.

This is used, for example, by OriginStamp to create a secure timestamp for documents.

KEY FEATURES

Write-only, immutable, transparent data storage

Decentralized, no need for intermediaries

Consistent state across all participants

Resistant against malicious participants

Open to everyone

CHALLENGES

Energy consumption

Scalability

Money laundering

Personal responsibility

Thank
You