## Most important topics:

1. **Difference between array and linked list**
   https://www.javatpoint.com/ds-array-vs-linked-list
2. **Sorting algorithm: insertion, selection, quick, merge(n), heap (Only Time and space complexity)**
   https://www.interviewkickstart.com/learn/time-complexities-of-all-sorting-algorithms
3. **How BFS/DFS works**
   https://www.tutorialspoint.com/difference-between-bfs-and-dfs#:~:text=BFS%20or%20Breadth%20First%20Search,end%20node%20of%20the%20path

   https://www.geeksforgeeks.org/difference-between-bfs-and-dfs/
   **Sudo code:** https://github.com/Bepul-Hossain/CP/tree/master/DSA/graph
4. **What is a heap data structure?**
   https://prnt.sc/GsDd5Dq4ksqw
   https://www.programiz.com/dsa/heap-data-structure
5. **Stack and queue difference , time complexity of push(), pop() so on**
   https://iq.opengenus.org/time-complexity-of-stack/
   **Stack worst case Time complexity O(n) onno sob somoy O(1)**
   https://iq.opengenus.org/time-and-space-complexity-of-queue/
6. **What is Database Transaction? Define database lock and it's type.**
   https://www.tutorialspoint.com/dbms/dbms_transaction.htm
   https://www.youtube.com/watch?v=a74V14OnDvw&ab_channel=Tutorialspoint
7. **Database Normalization.**
   https://www.youtube.com/watch?v=xoTyrdT9SZI&list=PLLGlmW7jT-nTr1ory9o2MgsOmmx2w8FB3&index=1&ab_channel=StudytonightwithAbhishek
   https://www.scaler.com/topics/denormalization-in-dbms/

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8. **What is polymorphism ?? What is compile time and runtime polymorphism?**
   https://www.mygreatlearning.com/blog/polymorphism-in-cpp/#:~:text=Polymorphism%20in%20C%2B%2B%20means%2C%20the,in%20numbers%2C%20it%20performs%20addition.
9. **Difference between graph and tree**
   https://www.geeksforgeeks.org/difference-between-graph-and-tree/
10. **Priority queue**
11. **Explain the primary key and composite key**
12. **ACID properties**
    https://www.geeksforgeeks.org/acid-properties-in-dbms/
13. **OOP concept**

**https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/**

14. **Four Pillar of OOP**
    **https://www.datatrained.com/post/four-pillars-of-oops/**
15. Constructor and its types
    https://www.geeksforgeeks.org/constructors-c/
16. Constructor vs Destructor
    https://byjus.com/gate/difference-between-constructor-and-destructor-in-c-plus-plus/#:~:text=A%20constructor%20allows%20an%20object,the%20time%20of%20its%20destruction.
17. Access modifiers
    https://www.programiz.com/cpp-programming/access-modifiers
18. Static - variables, Functions, Objects
    https://www.geeksforgeeks.org/static-keyword-cpp/
19. Try-throw catch in c++
    https://www.w3schools.com/cpp/cpp_exceptions.asp
20. DBMS vs RDBMS
    https://www.geeksforgeeks.org/difference-between-rdbms-and-dbms/
21. E-R model
    https://www.javatpoint.com/dbms-er-model-concept
22. The SOLID/KISS Principles
    **https://vpodk.medium.com/principles-of-software-engineering-6b702faf74a6**

    **https://www.boldare.com/blog/kiss-yagni-dry-principles/#:~:text=should%20know%20about-,KISS%2C%20YAGNI%2C%20DRY%20%E2%80%93%20three%20principles%20that,every%20developer%20should%20know%20about&text=Keep%20it%20simple%2C%20stupid%20(KISS,powerful%20digital%20product%20design%20principles.**
23. Real world Example of abstraction
    **https://www.learning.com/blog/examples-of-abstraction-in-everyday-life/**
24. Why we need Inheritance ?
    **https://www.tutorialspoint.com/cplusplus/cpp_inheritance.htm#:~:text=Inheritance%20allows%20us%20to%20define,functionality%20and%20fast%20implementation%20time.**

25. Problems with inheritance
    **https://neethack.com/2017/04/Why-inheritance-is-bad/**

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26. **https://leetcode.com/problems/rotate-image/**
27. **https://leetcode.com/problems/hamming-distance/**
28. **https://leetcode.com/problems/best-time-to-buy-and-sell-stock/**
29. **https://leetcode.com/problems/longest-substring-without-repeating-characters/**

30. Find the third Maximum salary from Employee table (sql query)
31. **Given an arr=[1,5,3,2,8,9,4] and seq = [3, 8, 4]. If seq is exist in the arr and same order then return true other wise return false.**
32. **You have given arr1=[2, 3,12, 5, 7] and arr2=[5, 8, 34, 2, 26]. Given the two minimum. (Problem ta sothik vabe mone nai)**

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33. **https://leetcode.com/problems/valid-anagram/**
34. **https://leetcode.com/problems/set-matrix-zeroes/**
35. **https://leetcode.com/problems/missing-number/**
36. **https://leetcode.com/problems/product-of-array-except-self/description/**
37. **https://leetcode.com/problems/majority-element/**
38. **https://leetcode.com/problems/maximum-depth-of-binary-tree/**
39. **https://leetcode.com/problems/container-with-most-water/description/**
40. **https://leetcode.com/problems/climbing-stairs/description/**
41. **https://leetcode.com/problems/n-th-tribonacci-number/**
42. **https://leetcode.com/problems/merge-sorted-array/**
43. **longest palindromic subsequence**
44. **Zero Mover code**
45. **Given five positive integers, find the minimum and maximum values that can be calculated by summing exactly four of the five integers. Then print the respective minimum and maximum values as a single line of two space-separated long integers. arr = [3,7,1,9,5] Output: 16 24**
46. **Find an algorithm to find the second smallest element in an array with O(n) complexity.**
    **https://prnt.sc/dgcNUJmbhTI7**
    **https://prnt.sc/pnNbwlDLfujf**

## Average important topics:

1. Friend class and virtual functions
   https://www.geeksforgeeks.org/difference-between-friend-function-and-virtual-function-in-cpp/
2. Denormalization
   https://www.geeksforgeeks.org/denormalization-in-databases/

3. Indexing
   https://www.tutorialspoint.com/dbms/dbms_indexing.htm#:~:text=Indexing%20is%20a%20data%20structure,based%20on%20its%20indexing%20attributes.

4. Triggers and Procedures

https://techdifferences.com/difference-between-trigger-and-procedure.html#:~:text=Trigger%20and%20Procedure%20both%20perform,when%20it%20is%20explicitly%20invoked.

5. What is a difference between “IS-A” Relationship and “HAS-A” Relationship in OOP
   https://stackoverflow.com/questions/36162714/what-is-the-difference-between-is-a-relationship-and-has-a-relationship-in
   https://www.youtube.com/watch?v=QtVU03w6L6I&ab_channel=AllAboutCSIT
6. https://leetcode.com/problems/implement-queue-using-stacks/
7. How to call a method without making an object of that class?
   **https://www.youtube.com/shorts/Q5-DVS5Fcz0**
   **https://www.youtube.com/watch?v=GqLdMfoSec0&ab_channel=vatsavkumar**
8. What is the benefits and drawback of quicksort?
   https://www.techquintal.com/advantages-and-disadvantages-of-quick-sort/

9. What is a volatile variable
   https://www.techopedia.com/definition/22856/volatile-variable
10. Difference between server side rendering and browser side rendering
    **https://clockwise.software/blog/client-side-vs-server-side-vs-pre-rendering/**
    **https://www.youtube.com/watch?v=ObrSuDYMl1s&ab_channel=Smoljames**
11. How javascript run inside a browser?
12. What is Namespace in C++
13. Vertical(add more cpu or ram, ex: mysql) Scaling and Horizontal(add more machine) Scaling
14. Abstraction and Interface Difference??
    **https://www.youtube.com/watch?v=BkrlSFxSn-4**
15. Inheritance and Dimond Shape Inheritance
    https://www.geeksforgeeks.org/multiple-inheritance-in-c/

16. **Graph Representation types, and which is better on what situation**
    https://www.geeksforgeeks.org/graph-and-its-representations/
17. Deletion and insertion of circular linked list
    https://www.javatpoint.com/deletion-in-circular-singly-linked-list-at-end
18. Scope of Private, Protected, and public variables?
19. Code swapping value without using Temp variable.
20. Write a function to describe polymorphism.
    **https://prnt.sc/pXxVGbL4nXaR**
21. How to removed cycle in linked list?
22. Deletion and insertion of circular linked list
23. upcasting

    https://www.javatpoint.com/upcasting-and-downcasting-in-java

24. **linear data structure**

25. **stack, queue, circular queue**

    https://www.programiz.com/dsa/circular-queue

26. The `super` keyword refers to superclass (parent) objects.
27. **A binary search tree property**
28. **Write a code to delete the duplicate items from a given array**

    https://www.javatpoint.com/remove-duplicate-elements-from-an-array-in-c

29. searching

    Write sudo-code

30. Tree traversal Algorithms (Pre-order, inorder, postorder traversal)
31. Trie data structure
32. KMP algo
33. merger sort
34. What's the difference between selection sort and insertion sort?
35. It was a binary search tree and giving their explanation about how it works and why is called a binary search tree

## OOP Coding challenge:

https://erlerobotics.gitbooks.io/erle-robotics-cpp-gitbook/content/object-oriented_programming__oop_and_inheritance/exercises_oop.html

https://www.codesdope.com/practice/cpp-classes-and-objects/

https://www.hackerrank.com/domains/cpp/classes/difficulty/all/page/2

## Behavioural Question

- Could you please introduce yourself?
- where do you live? Who is there in your family? What are they doing?
- Why did you choose this company?
- Why should we hire you?
- Your Weakness
- Your biggest strength
- Where do you want to see yourself in 5 years?
- What are the hardest tasks that you solved at the time of your project, Mention one of them and how do you solve them
- What is your salary expectation
- Learning Curve
- How you generally learn a new Technology

- What are the tools/frameworks you have learned recently?
- Do you have any plans for higher study?
- Why you leave your current job?

## Design pattern

Factory design pattern
https://hasin.me/2014/05/13/factory-design-pattern/
singleton-design-pattern
https://hasin.me/2014/05/14/singleton-design-pattern/

https://logicalforhad.wordpress.com/2013/05/29/%E0%A6%85%E0%A6%AC%E0%A6%9C%E0%A6%BE%E0%A6%B0%E0%A6%AD%E0%A6%BE%E0%A6%B0-%E0%A6%AA%E0%A7%8D%E0%A6%AF%E0%A6%BE%E0%A6%9F%E0%A6%BE%E0%A6%B0%E0%A7%8D%E0%A6%A8-observer-pattern/

## JS:

https://www.interviewbit.com/javascript-interview-questions/

1. Explain Hoisting in javascript.
2. Explain Implicit Type Coercion in javascript.
3. difference var and let
4. What is NaN property in JavaScript?
5. Explain passed by value and passed by reference.
6. Explain Higher Order Functions in javascript
7. Explain “this” keyword.
8. What is the difference between exec () and test () methods in javascript?
9. What is currying in JavaScript?
10. Explain Closures in JavaScript.
11. What are callbacks?
12. What is the use of a constructor function in javascript?
13. What are arrow functions?
14. 35. What is the rest parameter and spread operator?
15. 37. What is the use of promises in javascript?
16. 38. What are classes in javascript?
17. 41. Why do we use callbacks?
18. 43. What is Object Destructuring?
19. 44. Difference between prototypal and classical inheritance
20. Is JavaScript a pass-by-reference or pass-by-value language?Ans: It's always pass by value, but for objects the value of the variable is a reference.
21. Async/Await
22. Define anonymous function

## Node

**https://www.simplilearn.com/tutorials/nodejs-tutorial/nodejs-interview-questions**

1. Why is Node.js Single-threaded?
2. Do you know NPM?

## Express

**https://mindmajix.com/express-js-interview-questions**

1. 3. Mention the arguments that are available in an Express JS route handler function.
2. 6. Mention some third-party middleware provided by Express JS
3. 10. What is meant by CORS in Express JS? And what are the ways by which it can be achieved?
4. 12. How are the properties configured with process.ENV?
5. 8. What is Middleware, and what are its functions?

## MongoDB

https://mindmajix.com/mongodb-interview-questions

1. 1) What is MongoDB?
2. 3)What type of NoSQL database MongoDB is?
3. 7) Why MongoDB is the best NoSQL database?
4. 19) Explain Sharding and Aggregation in MongoDB?
5. 20) What is the importance of profiler in MongoDB?
6. 21) Define Collection?
7. 30) How do we perform sorting and Explain Project in MongoDB?
8. 31) How can MongoDB simulate subquery or join?
9. 39) What is the syntax of the limit() and sort() method?
10. 40) What do you know about NoSQL databases? What are the various types of NoSQL databases?
11. 43) Why do we use the pretty() method?
12. 46) What does ObjectId contain?
13. 50) What are the substitutes for MongoDB?
14. 59) How do we control the MongoDB Performance?
15. 60) What are the aggregate functions of MongoDB?
16. 61) What are the CRUD operations of MongoDB?
17. 62) What are the datatypes of MongoDB?
18. 65) How do we use a primary key in MongoDB?
19. 68) Explain how to start the MongoDB Instance or Server?
20. 69) Differences between MongoDB and RDBMS

21. 71) What are the different kinds of Indexes in MongoDB?
22. 71) Define BSON?
23. 73) Does MongoDB support ACID Transaction? Define ACID Transaction?
24. 75) How do we find array elements with multiple criteria?

## Mongoose

https://climbtheladder.com/mongoose-interview-questions/

1. 1. What is Mongoose?
2. 4. How do the Schema and Model objects work together?
3. 6. How do we specify validation rules for data fields when defining our schema?
4. 10. What are middleware functions in Mongoose?