**Interviews Guide**

**OOP Questions/Topics**

* A pie: concepts of OOP
* **Inheritance** defined as deriving new classes (sub classes) from existing ones such as super class or base class and then forming them into a hierarchy of classes.
* **Encapsulation**: In object-oriented computer programming languages, the notion of encapsulation refers to the bundling of data, along with the methods that operate on that data, into a single unit. ... Encapsulation can be used to hide both data members and data functions or methods associated with an instantiated class or object. Access modifiers can be used for hiding purposes.
* **Abstraction** (object): Data Abstraction may also be defined as the process of identifying only the required characteristics of an object ignoring the irrelevant details.
* **Polymorphism**: is the ability of an object to take on many forms. The most common use of polymorphism in OOP occurs when a parent class reference is used to refer to a child class object. It has two types static and dynamic. Static represented through overloading. Dynamic through overriding.
* Overloading occurs when two or more methods in one class have the same method name but different parameters. Overriding means having two methods with the same method name and parameters (i.e., method signature).

**Algorithms and Data Structure Questions/Topics**

* **An Algorithm** is a sequence of instructions where the main goal is to solve a specific problem, perform a certain action or computation.
* **Data Structure** is a way of storing and organising the data in such a way that we can perform operations on these data in an effective way.
* **Data structure types**: Arrays, Stacks, Queues, Linkedlists, trees, hashtables.
* **Sorting algorithms**: Bubble sort, Insertion sort, Selection sort, Merge sort, Quick Sort.
* **Selections sort:** sorts an array by repeatedly finding minimum of the unsorted part and place it at the beginning.
* **Bubble sort:** simplest sorting algorithm that works by swapping the adjacent elements if they are in wrong order.
* **Insertion sort:** the array is splitted into two parts sorted and unsorted. Values from the unsorted part are picked one by one and placed at the correct position in the sorted part.
* **Merge Sort**: it is a divide and conquer algorithm. The array is splitted into two halves and calles itself for the two halves, then merges the two sorted halves.
* **Quick sort:** it is also a divide and conquer algorithm. It picks a pivot and divides the array around it. There’s different types of the quick sort which picks the pivot in different ways. (Always pick first, Always pick last, pick random, pick median).
* **Searching algorithms**: Binary search, linear search.

**JavaScript Questions/Topics**

* + Relation beteeen JavaScript amd html
  + Scope of variables
  + Data types in JavaScript
  + Composition & Inheritance
  + Hoisting

Note that for JavaScript basics refreshment find this helpful online course (Basic JavaScript) provided from FreeCodeCamp: <https://www.freecodecamp.org/learn/javascript-algorithms-and-data-structures>

**Angular 10 helpful links and topics:**

* Typescript vs Javascript: <https://www.javatpoint.com/javascript-vs-typescript>
* Angular Basic Info: <https://youtu.be/k5E2AVpwsko>
* Angular 10 notes (includes angular 8 too but they are very similar). <https://www.javatpoint.com/everything-you-should-know-about-angular-10>
* Why we use Angular: <https://angular.io/features>

**Angular Interviews Questions/Topics**

1. Routing
2. Router-outlet
3. RxJs
4. Promise & Observable
5. Directives
6. Types of directives
7. Pips
8. Separation of concerns
9. Services
10. Dependency Injection
11. Modules
12. Data binding
13. Lifecycle methods
14. Httpclient
15. Behavior Subject
16. Async and await
17. Dynamic Components

**General Questions/Topics**

* Functional programming
* Difference between local storage & session Storage
* Difference between client-side rendering and server-side rendering
* Npm
* Lazy Loading
* Design Patterns