Topic : Typescript

Subtopic:

- Why we learn typescript?
- Differences between js and typescript
- advantages of typescript
- Disadvantages of typescript
- Environmental setup (Node.js, typescript)
- Basic Syntax
    1. Identifiers
    2. Keywords
    3. Comments
- Typescript & Object Orientated
- Typescript- Types (number, string, boolean, void, null, undefined & User defined)
- Type Assertions
- Variables (inferred type, Global scope, Class scope, local Scope)
- Operator (Arithmetic, Logical, Relational, Bitwise, Assignment, Ternary/conditional)
- Miscellaneous operator(negation operator, concatenation, Conditional Operator)
- types operator (typeof)
- Control Statement
    1. if statement
    2. if- else statement
    3. else-if and nested if
    4. switch statement
- Loops (While ,for,do-while)
- Functions
    1. optional parameter function
    2. default parameter
    3. Anonymous function
    4. Function Constructor

CW Assignment :

Tip: Trainers will assist for these questions.

1. Demonstrate type assertions.
2. Use of typeof operator.
3. How Control statement work in typescript
5. create optional parameter function for employee details where first name is mandatory and last name is optional parameter
4. Calculate discount offered on price using default parameter function.
5. Multiplication of two number using function constructor

HW Assignment :

Tip: Trainers will not assist for these questions.

1. Find out Greatest number of 3 number use if else statements
2. Find out given number is prime number (take hard coded data time being)
3. Find perfect square from 1 to 100 using while ,for loop

4. Find perfect Cube from 1 to 200 using while ,for loop
5. Find even & odd number from 1 to 500 using while ,for loop
6. Find factorial of given number.
7. Find given number is Armstrong number or not
8. Find Twin prime number in between 1 to 100
9. Find perfect square from 1 to 100 using while ,for loop using function
10. Find factorial of given number using recursive function
11. Create Default parameter function of handloom shop which by default has 10% discount on each item, also they offer total 20%discount during sale on MRP price. Display the discount price & Total selling price
12. Calculate addition ,subtraction ,division of two number using function constructor. Each operation has different function and display the result in console   hint: init values in constructor
13. Count the character is in uppercase within the string For E.g. str="sUmiT" output will be Count=2
14. Write a program to check whether a year is leap year or not. Use year as number Format.
15. Write a program to find power of any number x ^y.
16. Write a program to give Current system Date & time. Also Display only date, only day, only full year, only hours, only time, only minutes, only seconds.
17. Find the Sum of all Digits. e.g num=1234 & output will be 10
18. Count The Spaces from Given String. E.g str="Hefshine P VT LTD " output will be count=4

Interview Questions

1. Is Typescript is case-sensitive?
2. Does Typescript follow OOP?
3. How to compile & execute typescript code?
4. Explain type assertions?
5. 2 Explain default parameter function
6. 3 Explain optional parameter function

Topic :Typescript Advanced Topic

Subtopic:
- Arrow Function
- Typescript Array
- JSON Object
- Class
- Constructor
- Interface
- Inheritance
- Method overriding

CW Assignment
Tip: Trainers will assist for these questions.

1. Create object of employee and display employee details using arrow function
2. Write a class circle which implements draw method of interface ishape
3. Demonstrate multilevel inheritance.

4. Override print method of base class printer in derived class string printer.

HW Assignment :

Tip: Trainers will not assist for these questions.

1. perform Calculator operations using arrow function
2. Create object of student and display name, roll number using arrow function
3. Find out multiples of 5 between 1 to 500 using while loop
4. Find the count of odd values between 0 to 325 using for loop
5. Create classes dog and cat which implement sound method interface animal
6. Create classes Salesmanager, product manager which implements interface manager to define method calculate Salary (salary cal sal=basicsal+hra+da where hra=12% of basicsal,da=8% of basicsal) on total salary deduct 200INR for professional tax.PT tax deduct if Basic Salary is greater than 10000

   Only Salesmanager gets 1000INR as petrol allowance & product manager gets 500 medical allowance
7. Create classes rectangle, square, triangle to define area as method declared in shape interface
8. Using Classes - car, luxury cars, rolls Royce demonstrate multilevel inheritance
9. Override method display() of base class -BankAccount in derived classes-SavingAccount & LoanAccount; where dispaly() of base class shows account holder's name, address and mobile no. and its overridden method in LoanAccount class shows loan amount. also, display() of SavingAccount class shows savings balance. hint: use super in derived class display() method
10. Write a Employee class which has method print details on console. Print ID, Name, Salary
11. Create a array of Object of Employee having key is first name, last name, Basic salary, calculate salary. For calculate salary you have to pass 3 parameters hra,ta ,basic sal for that to create another object has name saldistrubution has key is hra, ta & then Display the Employee information.
12. Create industry json object has key status, data & error check if status is success then parse the data & display it, in data key should be minimum has 5 object. Second if error is there then don't parse the data
13. Create a number array and find out cube of each element using map function
14. Create 2 array is number type array. Using switch case +,-,/,* check if + operator is there then perform addition of each element & store in new array & display the result.
15. Find out Greatest number of 3 number use if else statements .Make a class and method Implement logic in method (take hard coded data time being)
16. Find out given number is prime number Make a class and method Implement logic in method (take hard coded data time being)

Interview Questions:

1. Does typescript support multiple inheritance?
2. Is Method overloading possible?
3. Does typescript support all oops concept?
4. How does typescript supports optional parameters in function?
5. Can we write more than one Constructor in typescript?
6. Explain Rest Parameter Function
7. Difference between soap & rest web serivce

8. Use of slice method
9. Explain About JSON Object
10. Explain arrow function
11. Can we import multiple class, function and Variable?
12. Explain Multitype array

Topic- Angular Basics

Subtopic:
- What is angular
- Angular Version History
- Architecture of Angular Apps
- Setting up the Environmental setup
- Structure of Angular Projects
- Creation of component manually & Through CMD
- String Interpolation

CW Assignments
Tip: Trainers will assist for these questions.

1 Manually create component in angular.
2 Create component through command in angular.
3 Demonstrate String interpolation using template & template url
4 create Project & explain project structure

Hw Assignment :
Tip: Trainers will not assist for these questions.

1 Create component Manually whose name is student component & display "welcome student component" on web page.
2 Create component through command Manually whose name is student component & display "welcome student component" on web page.
3 Using String interpolation display "Welcome Hefshine " with the both the ways (template & template url) ,also implement one method whose name is gettitle().
4 Create web page to render Number of authors and display the author name s using Component & services. Refer below image

Angular

3 Authors

- author1
- author2
- author3

5 Design Log-in web page in angular Apply CSS style for page become attractive.
Create nested lists containing a hierarchy of cities in states, of respective countries

7 Display Table as below use Appropriate HTML Tag

Company	Contact	Country
TCS	ABC	Germany
Infosys	XYZ	Mexico
L&T	SDG	India
Tech Mahindra	STR	India
Renuka Group	RSA	Canada
Capgemini	KSL	Italy

Hint: Apply color even row for that use css property
tr:nth-child(even) {background-color: #f2f2f2;}

8 Design a web page having first name, last name, gender[use radio button], qualification 10th,12th,Graduation[use check box], mail address field, mobile number and a submit button.

Interview Question:

1 Which command is used to create a component through CMD?
2 What is String interpolation
3 Explain File structure of angular project ?
4 Which Languages used in Full stack developments?
5 Explain Features of angular
6 Difference between angular & angular JS

Topic- Data binding & Handling Events

Subtopic:
- String Interpolation Vs Property Binding
- Property Binding

- Event Binding
	- (click) event
	 - (change)
	 - (keyup)
	- (keydown)
-Style binding
- Two way binding
- bind- use as keyword
- Pipe
- Directives
- Structural directives
	1 *ngIf, *ngIf else, *ngIf then else
	2*ngFor
	3 ngStyle
	4 ngClass
	5 ng-template
- Template reference variables
-angular array population [push()]
- removal of element/s from array [splice() and pop() methods]
-iterating an array with index

CW Assignments:
Tip: Trainers will assist for these questions.

1 Display image using property Binding
2 Implementation of Event binding in angular.
3 Implementation of Two way binding in angular [banana box notation].
4 Using course array use of all ngif directives
5 Create Course object containing fields- id & name & display the result using ngFor directive
6 Add and remove array elements from Array.
7 Demo on Template reference variable.
8 Demo on Combination of style binding & event Binding

Hw Assignment :
Tip: Trainers will not assist for these questions.

1 Display Text in div using String interpolation & property Binding.
2 Design web page such as page has one input text & one button, on button click display the the message in text box "Welcome Hefshine" Use Event binding & (String interpolation or Property Binding)
3 Find square & cube of number on click event. Take number as hard coded for time being & display the result in 2 text box, square & cube respectively.
4 Design web page such as page has one input text & one button, initially text box display "Hi". Afteron button click display the the message in text box "Hi Welcome Hefshine" Use Event binding & (String interpolation or Property Binding).On Multiple button click "Hi Welcome Hefshine " this text Should not get append in text box every time.

5 Design Log in page on first submit page should display success message in alert "Submitted successfully " and from second click onwards it should alert "Your data is already submitted"

6 Using two way binding , web page contain two input text & one button. One input text is used to take input from user another input text is used to display output. Find Number is prime number or not click on button.

e.g input =3 (From 1st input text)

   output= Number is prime number (on 2nd input text display this string)

7 Validate the Log in page using two way binding& display alert message "Validated successfully!!!! "

8 Check given number is even or odd using ngIf directive

9 Create array for all the state in India & render them.

hint: use ngFor& ul Tag

10 Create Object of Employee having fields id,name,salary & show it in ngFor.

11 Create web page containing Employee having fields id,name,salary & two buttons name viz add & remove button. When we Click add button **dynamic value** is added also remove the data if click on remove button.

12 On click event Change Background color, text color of div tag text

13 Change the width of input box when user enter the number in input box

14 Find square & cube of number on click event use as radio button. Take number as hard coded for time being & display the result in another text box, square & cube respectively.

15 Apply Style binding to button, when button on click change its background color

16 Apply Class Binding to button, when button on click to change text style to italic & text color should be change

17 Apply ngStyle binding to div on button click, change div color & text size should be change.

18 Set image to div and on mouse hover change the transparency/opacity of the image

Hint use opacity css property & also use mouseout event & mouseover

Interview Question :

1. What is difference between String interpolation & property Binding?
2. Explain Event Binding
3. What is mean by event filtering
4. Difference between two way binding & one way binding
5. What are the pre requisites for @ngModel in angular project
6. What is Structural directives?
7. How to Set Multiple style to Dom Element?
8. 2 How to Set Multiple class to Dom Element?
9. 3 How to access Dom Element value or Property from $event?

Topic- Input & Output Property, Pipe, Services & Dependency Injection

Subtopic :
- Component Interaction
- @Input()

- @Output()
- @ViewChild()
- Pipe (lowercase |uppercase | currency | Decimal | Date |currency)
- Custom Pipe
- Service & Dependency Injection

CW Assignments :
Tip: Trainers will assist for these questions.

1 Demo on @Input() Send String Data from Parent to Child

2 Demo on on @Input() Send Object from Parent to Child

3 Demo on on @Input() Send Array of Object from Parent to Child

4 Demo on @Output() send String data from child to parent

5 Demo on @Output() send Object data from child to parent

6 Demo on @ ViewChild() Update data from parent to child

7 Real time Demo on Combination of @Output()

8 Demonstrate Angular Pipes.

9 Demonstrate on Custom Pipe

10 Demonstrate on services

HW Assignment :
Tip: Trainers will not assist for these questions.

1 WAP to send String message from parent component to child component, display that message in child component

2 WAP to send the object from parent component to child component, display that object in child component

3 WAP to send the String message from Child Component to Parent Component, display that message in parent component.

4 WAP to send array of Object from parent component to child component, display that array of object information in child component

5 WAP to send message "Given number is prime number" to parent component from child component, where in child component has one input type & button in child component html . On click button process the logic of prime number & send the message to parent component.

6 WAP to send rating(as number) from parent component to child component. In child component check whether rating is less than 6 then apply background color to div as 'red' else apply 'green' color

hint: use style binding for div

7 Display information of employee(Id, Name in caps lock, salary, Joining date) using pipe format.

Hint: Create employee object in component.ts

8 Design a Custom Pipe to display only Summary of text for Example

description is = "
Lorem ipsum dolor sit amet consectetur adipisicing elit. Impedit quos magni nulla dolores assumenda, aliquam eligendi quae quod facilis fuga. Id rem cumque sed dolorum placeat incidunt illo quaerat expedita?"

Output will be - : description= " Lorem ipsum dolor sit amet consectetur adipisicing el...."

9 Design a Product service to fetch product data from service & display information to end user. Display Product information required product name, product description, product quantity, product price

**Note: For Parent component: AppComponent & Child Component: Your Custom component Name

Interview Question:

1 Explain Use of Input & Output?

2 How to Use of @viewchild()

3 Use of Pipe in Angular?

4 Explain Dependency injection

Topic- Http Services, Observable

Subtopic:

- What is Http

- How to connect back End

- Use Of HTTP Service

- Perform Curd Operation

  - Get

  - Post

  - Put

  - Delete

- What is Observable

CW Assignments :

Tip: Trainers will assist for these questions.

 1 Demo on get Method

2 Demo on Post Method

3 Demo on Put Method

4 Demo on Delete Method

Hw Assignment :

Tip: Trainers will not assist for these questions.

1 Perform Get operation on Comment API

2 Perform Post operation on Comment API

3 Perform Put operation on Comment API

4 Perform Delete operation on Comment API

Interview Question :

1 What is Http?

2 Explain Observable?

3 Explain Curd Operation

4 What is API ?

Topic-Routing

Subtopic:

- How to Configure the Routes

- Use of router-outlet tag

- Routing using routerlink Directive
- pass Parameter in url & parse it
- pass query parameter in url & parse it
- Programmatic routing (i.e. Using Button)

CW Assignments :
Tip: Trainers will assist for these questions.

1 Demo on Routing using routerlink Directive including passing parameter & query parameter
2 Demo on Programmatic routing (i.e. Using Button)

Hw Assignment :
Tip: Trainers will not assist for these questions.

1 Design Application For Book has pages (core java book, Angular Book, Advanced Java Book, Spring/hibernate Book) use using routerlink Directive including passing parameter & query parameter
2 Design Application For Book has pages (core java book, Angular Book, Advanced Java Book, Spring/hibernate Book) use using Programmatic routing Directive including passing parameter & query parameter

Interview Question :
1 Explain Routing Steps?
2 Difference Between <a href> & <a routerLink>
3 Can We use Routing Module?

Topic- Bootstrap, Template driven Form

Subtopic:
- Only Overview of Bootstrap
- Bootstrap Grid System
- Use of Form Control Class
- Validation of Template Driven Form
- ngForm
- ngValue
- ngSubmit

CW Assignments :
Tip: Trainers will assist for these questions.

1 Demo on Overview of bootstrap
 2 Demo on Grid system & table class used in bootstrap
3 Demo on Template driven form with validation

HW Assignment :
1. Create a feedback form and validate it use bootstrap; on the basis of:
    a. All fields are mandatory
    b. Name should be min 6 letter long
    c. Name shouldn't exceed 15 limit

     d. Form should be submitted only once.

2. Create a sign-in page and validate it use bootstrap for following:
     a. All fields compulsory
     b. Password must be min 6 in length

3. Design ATM application where, you have cash deposit and cash withdrawal options.
Hide 'cash withdrawal' option if balance is less than 3000INR.Use button for UI or if you want use other than button you can use it, For UI Part take one input text, for cash deposit & withdraw has radio button on select any radio button click check the user enter amount is grater than 3000 or less then disable or enable your button

4. Display days in a month depending upon the month name passed from back end to front end. Use switch case. Use bootstrap for attractive web page

Interview Question :
1. What is bootstrap?
2. Why bootstrap?
3. Explain use of Form Control Class?
4. What is use of ngModel
5. What is responsive?