Variables (6 questions)

1. Declare a variable age of type number and assign it a value. Print it.

let *age1*: number = 25;

*console*.log("Age:", *age1*, "\n");

o/p:Age: 25

2. Create a variable username of type string and log "Hello, <username>".

let *username*:string="Abhi";

*console*.log(`Good morning,${*username*}`,"\n");

o/p:

Good morning,Abhi

3. Declare a boolean variable isActive and assign it true. Print its type.

let *isActive*:boolean=true;

*console*.log("the type of boolean variable isActive is",typeof *isActive*);

o/p:

the type of boolean variable isActive is boolean

4. Create two number variables x and y, assign values, and print their sum.

let *x*:number=10;

let *y*:number=20;

*console*.log("sum of x and y is",*x*+*y*,"\n")

o/p:

sum of x and y is 30

5. Declare a variable colors as an array of strings with three colors. Print the second one.

let *color*:string[]=["red","pink","yellow","green","black"]

*console*.log("the second color is:",*color*[1])

o/p:

the second color is: pink

6. Create a constant PI with value 3.14 and try reassigning it (observe the error).

const *PI*:number = 3.14;

*console*.log("PI is ",*PI*);

PI=3.1234

*console*.log();

o/p:

Gives error:

TS2588: Cannot assign to 'PI' because it is a constant.

Functions (6 questions)

7. Write a function greet that takes a name (string) and returns "Hello, <name>".

function greet(user: string): string{

return `Hello,${user}`;

}

*console*.log(greet("abhi"));

o/p:

Hello,abhi

8. Write a function addNumbers that takes two numbers and returns their sum.

function addNumbers(a:number,b:number):number{

return a+b;

}

*console*.log("the sum is:",addNumbers(5,25));

o/p:

the sum is: 30

9. Create a function isEven that takes a number and returns true if it’s even, else false.

function isEven(n:number):boolean{

return n%2===0;

}

*console*.log("is the number even:",isEven(8));

o/p:

is the number even: true

10. Write a function multiply with default parameter b = 5 that multiplies a \* b.

function multiply1(a:number,b:number=5):number{

return a\*b;

}

*console*.log("the ans is",multiply1(10));

o/p:

the ans is 50

11. Create an arrow function square that takes a number and returns its square.

const square=(n:number):number=>n\*n;

*console*.log("square is",square(8));

o/p:

square is 64

12. Write a function printDetails that accepts a name (string) and age (number) and prints: "Name: <name>, Age: <age>".

function printDetails(name:string,age:number):void{

*console*.log(`name:${name},age:${age}`);

}

*console*.log("print details output")

printDetails("Abhi",21)

*console*.log();

o/p:

print details output

name:Abhi,age:21

Classes (6 questions)

13. Create a class Person with name and age properties, and a method introduce() that logs "Hi, I'm <name> and I'm <age> years old."

class Person {

name: string;

age: number;

introduce(): void {

console.log(`name is ${this.name} and age is ${this.age} .`);

}

}

let p = new Person();

p.name = "Abhi";

p.age = 20;

console.log("print output:");

p.introduce();

console.log();

14. Add a constructor to Person that initializes name and age.

class Person{

name:string;

age:number;

constructor(name:string,age:number){

this.name = name;

this.age = age;

}

introduce():void{

*console*.log(`name is ${this.name} and age is ${this.age}`);

}

}

let *p*=new Person("abhi",10);

*p*.introduce();

*console*.log(" ");

o/p:name is abhi and age is 10

15. Create a class Car with properties brand and year, and a method displayInfo() that logs "Car: <brand>, Year: <year>".

class car{

brand : string;

year :number;

constructor(brand:string,year:number) {

this.brand = brand;

this.year = year;

}

display():void {

*console*.log(`${this.brand}-${this.year}`)

}

}

*console*.log("class output");

const *mycar*= new car("toyota",2020)

*mycar*.display();

*console*.log("");

o/p:

class output

toyota-2020

16. Create a class Rectangle with properties width and height and a method getArea() that returns area.

class Rectangle{

width:number;

height:number;

constructor(width:number,height:number) {

this.width = width;

this.height = height;

}

area():number{

return this.width \* this.height;

}

}

const *rec*=new Rectangle(10,5);

*console*.log(`area is ${*rec*.area()}`);

o/p:area is 50

17. Create a class Student that has name and grade, and a method displayGrade() that logs "Student <name> has grade <grade>".

class Student{

name:string;

grade:string;

constructor(name:string,grade:string){

this.name = name;

this.grade = grade;

}

showgrade():void{

*console*.log(`grade scored is ${this.grade}`);

}

}

const *s*=new Student("Abhi","B")

*s*.showgrade();

o/p: grade scored is B

18. Create a class BankAccount with accountNumber and balance, and a method deposit(amount) that adds to balance and logs the new balance.

class BankAccount {

accountNumber: number;

balance: number;

constructor(accountNumber: number, balance: number) {

this.accountNumber = accountNumber;

this.balance = balance;

}

deposit(amount: number): void {

this.balance += amount;

*console*.log(`New balance is : ${this.balance}`);

}

}

const *acc1* = new BankAccount(11111, 1000);

*acc1*.deposit(500);

o/p:

New balance is : 1500