//////////**Governor House Examination System Stage 1**//////////

"Quiz Details"
Title: TypeScript Basics
Description: A quiz to assess fundamental knowledge of TypeScript.
Total Duration: 1200 seconds (40 minutes)
Total Questions: 10

//////////////////////**Questions And Answers**//////////////////////

***Question 1:**
Question: What are modules in TypeScript?
Answer : Modules in TypeScript are units of code that can be imported and exported between files,
enabling better organization and reuse of code. They encapsulate related variables, functions, classes,
or interfaces, and are defined using the export and import keywords.

***Question 2:**
Question: How can you achieve encapsulation in TypeScript classes?
Answer : Encapsulation in TypeScript classes is achieved by using access modifiers to
control the visibility and accessibility of class members (properties and methods).
The three primary access modifiers are public, private, and protected.

Public: Members are accessible from anywhere.
Private: Members are accessible only within the class.
Protected: Members are accessible within the class and its subclasses.

***Question 3:**

Question: Implement a TypeScript interface for a Person object with properties for name, age, and email?

Answer: implementation of a TypeScript interface for a Person object with properties for name, age, and email:

```
interface Person {
  name: string;
  age: number;
  email: string;
}

const person: Person = {
  name: 'John Doe',
  age: 30,
  email: 'john.doe@example.com'
};

console.log(person);
```

***Question 4:**

Question: What are ambient declarations in TypeScript?
Answer: Ambient declarations in TypeScript describe the shape of code that exists outside TypeScript,
such as JavaScript libraries or global variables. They use the declare keyword and are often found in
.d.ts files. These declarations help TypeScript understand and type-check external code, improving development accuracy and efficiency.

***Question 5:**

Question: What is inheritance in TypeScript?
Answer: Inheritance in TypeScript allows a class to inherit properties and methods from another class,
enabling code reuse and the creation of a hierarchical class structure. This is done using the extends keyword.
The class that inherits is called the subclass (or derived class), and the class being inherited from is the superclass (or base class).

***Question 6:**

Question: What are namespaces in TypeScript?
Answer: Namespaces in TypeScript provide a way to organize and group logically related code in a named scope. They help prevent name collisions between identifiers and improve code maintainability.

Here's a concise explanation:

Namespaces: Encapsulate variables, functions, interfaces, and classes under a unique name.

Usage: Used to organize code and avoid global scope pollution.
Syntax: Defined with the namespace keyword or ES6-style namespace syntax.

***Question 7:**
Question: What is the difference between null and undefined in TypeScript?
Answer: null: Represents an intentional absence of any object value. It is a primitive value that indicates a variable has been explicitly set to null.
undefined: Represents a variable that has been declared but has not yet been assigned a value. It indicates the absence of a meaningful value.
Key differences:

null is explicitly assigned by a programmer to indicate no value, whereas undefined typically denotes an uninitialized variable or an object property that hasn't been assigned a value.

***Question 8:**
Question: Write a TypeScript function to reverse a string?
Answer:

```
function reverseString(input: string): string {
  return input.split('').reverse().join('');
}

// Example usage:
const reversed = reverseString('hello');
console.log(reversed); // Outputs: 'olleh'
```

Explanation:

The reverseString function takes a string parameter input.
input.split('') converts the string into an array of characters.
.reverse() reverses the order of elements in the array.
.join('') joins the reversed array back into a string.
The reversed string is returned as the result.

***Question 9:**
Question: How can you stay up-to-date with the latest developments in the TypeScript ecosystem?
Answer: o stay up-to-date with the latest developments in the TypeScript ecosystem, you can follow these steps:

Official TypeScript Website: Visit the official TypeScript website for announcements, release notes, and documentation updates.

GitHub Repository: Follow the TypeScript GitHub repository for issues, pull requests, and discussions.

TypeScript Blog: Check out the TypeScript blog for announcements, deep dives, and updates from the TypeScript team.

Twitter and Social Media: Follow TypeScript team members, influential developers, and TypeScript-related accounts on Twitter and other social media platforms.

Community Forums: Participate in TypeScript-related forums, such as Stack Overflow and Reddit, to discuss new features and best practices with other developers.

Conferences and Meetups: Attend TypeScript-related conferences, webinars, and local meetups to learn about the latest trends and practices from experts and community members.

***Question 10:**

Question: what is Function in Typescript ?

Answer: In TypeScript, a function is a block of code designed to perform a specific task. It can accept input parameters, execute its logic, and optionally return a value. Functions can be declared using the function keyword or as anonymous functions assigned to variables. They facilitate code organization, reuse, and modularity within TypeScript applications.

//////////////////////Ten Questions Completed///////////