Capgemini Technical & Coding

1.What are the different validators in ASP.NET?

A. The different validators in ASP.NET are:

- RequiredFieldValidator.
- RangeValidator.
- CompareValidator.
- RegularExpressionValidator.
- CustomValidator.
- ValidationSummary.

2. What are the different Session state management options available in ASP.NET?

A. The different Session state management options available in ASP.NET are:

- InProcMode. It is a default session mode and a value stored in web server memory.
- State Server Mode. In this mode session data is stored in a separate server.
- SQL Server Mode. In this session is stored in the database.
- Custom Mode.

3. What are the asp.net Security Controls?

A. Asp.net Security Controls are:

- **<asp:Login>**

Provides a standard login capability that allows the users to enter their credentials

- **<asp:LoginName>**

Allows you to display the name of the logged-in user

- **<asp:LoginStatus>**

Displays whether the user is authenticated or not

- **<asp:LoginView>**

Provides various login views depending on the selected template

- **<asp:PasswordRecovery>**

Provides the website administrators with the capability to email the users their lost password.

4. **Explain the concepts of a Primary key and Foreign Key.**

A. Primary Key, uniquely identifies the records in a database table while Foreign Key, on the other hand, is used to link two or more tables together.

Example: Consider 2 tables – Employee and Department. Both have one common field/ column as 'ID' where ID is the primary key of the Employee table while this happens to be the foreign key for the Department table.

5. Why do we need the Friend class and function?

A. At times there is a need for allowing a particular class to access private or protected members of a class and to do so we make use of a friend class, that is capable of accessing the protected as well as the private members of the class in which it is declared as a friend.

A friend function, on the other hand, can access private and protected class members. It could either be a global function or a method of some class.

6. What is a Dangling pointer?

A. Dangling Pointer could be defined as a pointer that doesn't point to a valid memory location. Dangling pointers are created when an object is deleted or deallocated, without modifying the value of the pointer, so that the pointer still points to the memory location of the deallocated memory.

7. **Write Python code to check the given sequence is a palindrome or not?**

```
number=int(input("Enter any number :"))
#store a copy of this number
temp=number
#calculate reverse of this number
reverse_num=0
while(number>0):
#extract last digit of this number
digit=number%10
#append this digit in reveresed number
reverse_num=reverse_num*10+digit
#floor divide the number leave out the last digit from number
number=number//10
#compare reverse to original number
if(temp==reverse_num):
print("The number is palindrome!")
else:
print("Not a palindrome!")
```

8. **Write a program to find the greatest of three numbers in Java?**

A program to find the greatest among three numbers is as follows:

```
public class JavaExample{

public static void main(String[] args) {
```

```
int num1 = 10, num2 = 20, num3 = 7;

if( num1 >= num2 && num1 >= num3)
System.out.println(num1+" is the largest Number");

else if (num2 >= num1 && num2 >= num3)
System.out.println(num2+" is the largest Number");

else
System.out.println(num3+" is the largest Number");
}
}
```

9. **What are Constraints in SQL?**

A. Constraints are used to specify the rules concerning data in the table. It can be applied for single or multiple fields in an SQL table during the creation of the table or after creating using the ALTER TABLE command. The constraints are:

- **NOT NULL** – Restricts NULL value from being inserted into a column.
- **CHECK** – Verifies that all values in a field satisfy a condition.
- **DEFAULT** – Automatically assigns a default value if no value has been specified for the field.
- **UNIQUE** – Ensures unique values to be inserted into the field.
- **INDEX** – Indexes a field providing faster retrieval of records.
- **PRIMARY KEY** – Uniquely identifies each record in a table.
- **FOREIGN KEY** – Ensures referential integrity for a record in another table.

10. **What is Data Integrity?**

A. Data Integrity is the assurance of accuracy and consistency of data over its entire life cycle and is a critical aspect of the design, implementation, and usage of any system which stores, processes, or retrieves data. It also defines integrity constraints to enforce business rules on the data when it is entered into an application or a database.