APPLICATION DEVELOPMENT

Revision

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WHAT IS THE PROCESS OF DEFINING A METHOD IN TERMS OF A METHOD THAT CALLS ITSELF?

A. Polymorphism
B. Abstraction
C. Encapsulation
D. Recursion

ANSWER: D

ANSWER

```
class Program     {
        static void Main(string[] args)     {
            Console.WriteLine("Please Enter a Number");
             int number =Convert.ToInt32(Console.ReadLine());
             double factorial = Factorial(number);
             Console.WriteLine("factorial of"+number+"="+factorial.ToString());
        }
        public static double Factorial(int number)     {
            if (number == 0)
                return 1;
            else
                return number* Factorial(number – 1);
        }
}
```

A TYPE OF CLASS WHICH DOES NOT HAVE ITS OWN OBJECTS BUT ACTS AS A BASE CLASS FOR ITS SUBCLASS IS KNOWN AS?

a) Static class

b) Sealed class

c) Abstract class

d) None of the mentioned

- Answer : c

WHAT DOES SEALED CLASS MEAN?

- A sealed class, in C#, is a class that cannot be inherited by any class but can be instantiated.
- The design intent of a sealed class is to indicate that the class is specialized and there is no need to extend it to provide any additional functionality through inheritance to override its behavior.
- A sealed class is often used to encapsulate a logic that needs to be used across the program but without any alteration to it.
- A class can be sealed by using the ***sealed*** keyword.
- The keyword tells the compiler that the class is sealed, and therefore, cannot be extended. No class can be derived from a sealed class.

WHAT DOES STATIC CLASS MEAN?

- In C#, a static class is a class that cannot be instantiated.
- The main purpose of using static classes in C# is to provide blueprints of its inherited classes.
- Static classes are created using the static keyword in C# and .NET.
- A static class can contain static members only. You can't create an object for the static class.
- **Advantages of Static Classes**
  1. If you declare any member as a non-static member, you will get an error.
  2. When you try to create an instance to the static class, it again generates a compile time error, because the static members can be accessed directly with its class name.
  3. The static keyword is used before the class keyword in a class definition to declare a static class.
  4. A static class members are accessed by the class name followed by the member name.

WHICH OF THE FOLLOWING LANGUAGES IS NOT SUPPORTED BY THE .NET FRAMEWORK?

A. C#
B. Python
C. VB.NET
D. F#

ANSWER: B

SOAP STANDS FOR

A. Simple Object Access Program
B. Simple Object Access Protocol
C. Simple Object Application Protocol
D. Simple Object Account Protocol

Answer: B

SOAP WEB SERVICES

- SOAP stands for Simple Object Access Protocol.
- It is a XML-based protocol for accessing web services.
- SOAP is a W3C recommendation for communication between two applications.
- It is platform independent and language independent.
- By using SOAP, you will be able to interact with other programming language applications.

IN C# SUB ROUTINE IS CALLED A

A. Function

B. Metadata

C. Method

D. Managed code

Answer: C

WHICH OF THE FOLLOWING STATEMENTS IS CORRECT ABOUT THE MANAGED CODE

A. Managed code runs on top of Windows

B. Managed code is the code that is written to target the services of the CLR.

C. Managed code is the code where resources are Garbage Collected.

D. Managed code is the code that is compiled by the JIT compilers.

Answer: B

WHAT IS "MANAGED CODE"?

- Managed code is a code whose execution is managed by Common Language Runtime(CLR).
- CLR is in charge of taking the managed code, compiling it into machine code and then executing it.
- Managed code is written in one of the high-level languages that can be run on top of .NET, such as C#, Visual Basic, F# and others.

WHICH OF THE FOLLOWING CONSTITUTES THE .NET FRAMEWORK

i. ASP.NET Applications
ii. CLR
iii. Framework Class Library
iv. WinForm Applications
v. Windows Services

A. i and v
B. i and ii
C. ii and iii
D. iii and iv

Answer: C

MAIN COMPONENTS OF .NET FRAMEWORK

- **Common Language Runtime(CLR):** CLR is the basic and Virtual Machine component of the .NET Framework. It is the run-time environment in the .NET Framework that runs the codes and helps in making the development process easier by providing various services such as remoting, thread management, type safety, memory management, robustness, etc. Basically, it is responsible for managing the execution of .NET programs regardless of any .NET programming language.
- **Framework Class Library(FCL):** It is the collection of reusable, object-oriented class libraries and methods, etc that can be integrated with CLR. Also called the Assemblies. It is just like the header files in C/C++ and packages in java.

```
class InheritanceEx {
        class baseclass{
                int i;
                public baseclass(int ii){
                   i = ii;
                   Console.Write("Base");
                }
        }
        class Derived : baseclass{
                public Derived(int ii): base(ii){
                   Console.Write("Derived");
                   Console.ReadLine();
                }
        }
        static void Main(string[] args){
                 Derived d = new Derived(10);
        }
}
```

Which of the following correct about the C# code given here?

A. The program will report an error in the statement base(ii)
B. The program will work correctly if we replace base(ii) with base.Baseclass(ii).
C. The program will output: BaseDerived
D. The program will output :Derived Base

Answer: C

WHICH OF THE FOLLOWING ARE VALUE TYPE VARIABLES,

i. Integer
ii. Array
iii. String
iv. Long
v. Single

A. i , ii, v
B. i, iv, v
C. ii, iv
D. Iii

Answer: B

string, array, class
string, array, class
string, array, class
string, array, class
string, array, class
string, array, class

VARIABLE TYPES

- *Value* and reference types are the two main categories of C# types.
- Value-type variables directly store their data in memory.
- Examples of value types include integers (int), floating-point numbers (float, double), booleans (bool), characters (char), and structs.
- Reference types store a reference (memory address) to the data.
- Value types are copied by value. Reference type value are copied by reference.
- Reference types include string, arrays and classes.

WHICH ONE OF THE FOLLOWING REFERS TO THE COPIES OF THE SAME DATA (OR INFORMATION) OCCUPYING THE MEMORY SPACE AT MULTIPLE PLACES?

A. Data Repository

B. Data Inconsistency

C. Data Mining

D. Data Redundancy

Answer: D

WHICH OF THE FOLLOWING IS NOT AN ADVANTAGE OF A FLOWCHART?

A. Better communication

B. Efficient coding

C. Systematic testing

D. Improper documentation

Answer: D

```
class TwoDArr {
    static void Main(string[] args){
        int i, j;
        int[,] arr = new int[2, 2];
        for (i = 0; i < 2; i++){
            for (j = 0; j < 2; j++){
                arr[i, j] = i * 17 + i * 17;
                Console.Write(arr[i, j] + " ");
            }
        }
        Console.ReadKey();
    }
}
```

- What will be the output of this C# code snippet?

A. 0 0 34 34

B. 0 0 17 17

C. 0 0 0 0

D. 17 17 0 0

Answer: A

WHAT IS CTS?

A. Common type specification

B. Common type-safe

C. Compiler type structure

D. Common type system

Answer: D

COMMON TYPE SYSTEM (CTS)

- The Common Type System (CTS) is **a standard that specifies how type definitions and specific values of types are represented in computer memory.**
- (CTS) is a standard for defining and using data types in the .NETframework. CTS defines a collection of data types, which are used and managed by the run time to facilitate cross-language integration.

WHICH OF THE FOLLOWING CLASS IS NOT INCLUDED IN THE SYSTEM.IO NAMESPACE?

A. String
B. File
C. Path
D. FileStream

Answer: A

C# SYSTEM.IO NAMESPACE

BinaryReader	It is used to read primitive data types as binary values in a specific encoding.
Path	It performs operations on String instances that contain file or directory path information.
StreamReader	It is used to implement a TextReader that reads characters from a byte stream.
FileStream	It provides a Stream for a file, supporting both synchronous and asynchronous read and write operations.

WHICH OF THE FOLLOWING CLASS IS USED TO READ A TEXT FILE

A. BinaryReader
B. StreamReader
C. Path
D. FileStream

Answer: D

IN ASP.NET APPLICATION DLL FILES ARE STORED IN

A. App_Code
B. App_Data
C. Bin
D. App_LocalResources

Answer: C

WHAT IS DLL?

- Dynamic Link Library (DLL).
- A DLL is **a library that contains code and data that can be used by more than one program at the same time.**
- For example, in Windows operating systems, the Comdlg32 DLL performs common dialog box related functions.

WHAT WILL BE THE OUTPUT OF THE FOLLOWING C# CODE

```
static void Main(string[] args){
        int a = 5;
        int b = 10;
        int c;
        Console.WriteLine(c = ++a + b++);
        Console.WriteLine(b);
        Console.ReadKey();
}
```

A. 11,10

B. 16,10

C. 16,11

D. 15,11

Answer: C

WHICH OF THE FOLLOWING IS TRUE ABOUT C# STRUCTURES AND CLASSES

A. Classes are reference type and structures are value type
B. Structures do not support inheritance
C. Structures cannot have default constructor
D. All of the above

Answer: D

DIFFERENCE BETWEEN CLASS AND STRUCTURE

Class	Structure
Classes are of reference types.	Structs are of value types.
Class has limitless features.	Struct has limited features.
Class is generally used in large programs.	Struct are used in small programs.
Classes can contain constructor or destructor.	Structure does not contain parameter less constructor or destructor, but can contain Parameterized constructor or static constructor.
Classes used new keyword for creating instances.	Struct can create an instance, with or without new keyword.
A Class can inherit from another class.	A Struct is not allowed to inherit from another struct or class.
The data member of a class can be protected.	The data member of struct can't be protected.

WHICH ONE OF THE FOLLOWING IS THE PROCESS OF INSERTING AN ELEMENT IN THE STACK?

A. Insert
B. Add
C. Push
D. None of the above

Answer: C

```
class maths {
    public int x;
    public double y;
    public int add(int a, int b) {
        x = a + b;
        return x;
    }
    public int add(double c, double d){
        y = c + d;
        return (int)y;
    }
    public maths(){
        this.x = 0;
        this.y = 0;
    }
}
```

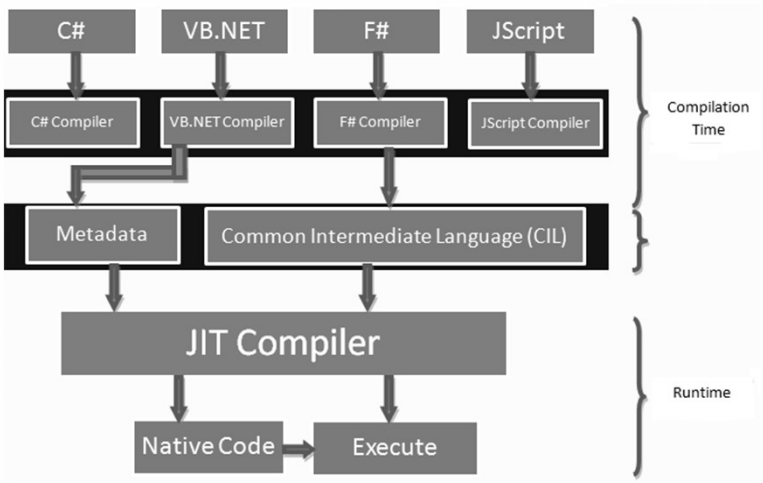
```
class Program
{
    static void Main(string[] args){
        maths obj = new maths();
        int a = 4;
        double b = 3.5;
        obj.add(a, a);
        obj.add(b, b);
        Console.WriteLine(obj.x + "  " + obj.y);
        Console.ReadLine();
    }
}
```

What would be output for the set of code? **8 7.0**

JUST-IN-TIME (JIT) COMPILER IN C#

- Just-In-Time compiler(JIT) is a part of **Common Language Runtime (CLR)** in *.NET* which is responsible for managing the execution of *.NET* programs regardless of any *.NET* programming language.
- A language-specific compiler converts the source code to the intermediate language.
- This intermediate language is then converted into the machine code by the Just-In-Time (JIT) compiler.
- This machine code is specific to the computer environment that the JIT compiler runs on.

JUST-IN-TIME (JIT) COMPILER IN C#



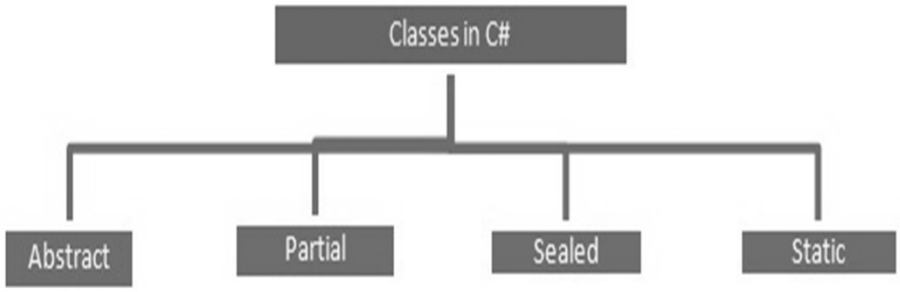
WHAT IS MSIL?

- Microsoft Intermediate Language (MSIL) is the assembly language output by .NET compilers-C#, VB.NET, etc.
- There are separate compilers for the visual basic, C#, and visual programming languages in .NET framework. Each .NET compiler produces an intermediate code after compiling the source code.
- The intermediate code is common for all environments. This intermediate code is known as Microsoft intermediate language (MSIL).

DIFFERENCES BETWEEN OBJECTS AND CLASSES

OBJECT	CLASS
Object is an instance ofa class.	Class is a blue print from which objects are created
Object is a real world entity such as chair, pen. table, laptop etc.	Class is a group of similar objects.
Object is a physical entity.	Class is a logical entity.
Object is created many times as per requirement.	Class is declared once.
Object allocates memory when it is created.	Class doesn't allocated memory when it is created.
Object is created through new keyword. Employee ob = new Employee();	Class is declared using class keyword. class Employee{}
There are different ways to create object in java:- New keyword, newinstance() method, clone() method, And deserialization.	There is only one way to define a class, i.e., by using class keyword.

WHAT ARE THE DIFFERENT TYPES OF CLASSES IN C#?



STATIC CLASS

- A class with static keyword that contains only static members is defined as static class. A static class cannot be instantiated.

ABSTRACT CLASS

- A class with abstract modifier indicate that class is abstract class.
- An abstract class cannot be instantiated.
- The purpose of an abstract class is to provide a common definition of a base class that multiple derived classes can share.

PARTIAL CLASS

- The partial keyword indicates that other parts of the class, struct, or interface can be defined in the namespace.
- All the parts must use the partial keyword.
- All the parts must be available at compile time to form the final type.
- All the parts must have the same accessibility, such as public, private, and so on.

SEALED CLASS

- A class with sealed keyword indicates that class is sealed to prevent inheritance.
- Sealed class cannot inherit.

A _____ IS AN IDENTIFIER THAT DENOTES A STORAGE LOCATION

A. Constant
B. Reference type
C. Variable
D. Object

Answer: C

CODE THAT TARGETS THE COMMON LANGUAGE RUNTIME(CLR) IS KNOWN AS

A. Unmanaged

B. Distributed

C. Legacy

D. Managed code

Answer: D

ALL C# APPLICATIONS BEGIN EXECUTION BY CALLING THE _____ METHOD.

A. Class()

B. Main()

C. Submain()

D. Namespace

Answer: B

ARRAYS IN C# ARE _____ OBJECTS

A. Reference
B. Logical
C. Value
D. Arithmetic

Answer: A

Which of the following is the root of the .NET type hierarchy?

A. System.Type
B. System.Base
C. System.Parent
D. System.Object

Answer: D

WHICH OF THE FOLLOWING CAN BE USED TO TERMINATE A WHILE LOOP AND TRANSFER CONTROL OUTSIDE THE LOOP?

1. exit while
2. continue
3. exit statement
4. break
5. goto

A. 1,3

B. 2,4

C. 3,5

D. 4,5

Answer: D

WHICH OF THE FOLLOWING STATEMENTS IS CORRECT ABOUT CONSTRUCTORS IN C#.NET?

A. A constructor cannot be declared as private

B. A constructor cannot be overloaded

C. A constructor can be a static constructor

D. None of the mentioned

Answer: D

Struct's data members are _____ by default.

A. Protected
B. Public
C. Private
D. Default

Answer: C

WHAT WILL BE THE ERROR IN THE FOLLOWING C# CODE?

```
1.  Static Void Main(String[] args)
2.   {
3.       const int m = 100;
4.       int n = 10;
5.       const int k = n / 5 * 100 * n ;
6.       Console.WriteLine(m * k);
7.       Console.ReadLine();
8.   }
```

A. 'k' should not be declared constant
B. Expression assigned to 'k' should be constant in nature
C. Expression (m * k) is invalid
D. 'm ' is declared in invalid format

Answer: A

A LOCAL VARIABLE

A. Can be used anywhere in the program
B. Is declared within a method
C. Must accept a class
D. Represent a class object

Answer: B

TO OVERLOAD A METHOD WHICH OF THE FOLLOWING STATEMENT IS FALSE?

A. If the return type is different methods are overloaded
B. Name of the overloaded method should be same
C. Type of the parameter should be different
D. Number of parameters should be different if types are same

Answer: A

THE THEORY OF _____ IMPLIES THAT USER CAN CONTROL THE ACCESS TO A CLASS, METHOD, OR VARIABLE.

A. Data hiding
B. Encapsulation
C. Information Hiding
D. Polymorphism

Answer: B

IN MICROSOFT VISUAL STUDIO, _____ TECHNOLOGY AND A PROGRAMMING LANGUAGE SUCH AS C# IS USED TO CREATE A WEB BASED APPLICATION.

A. JAVA
B. J#
C. VB.NET
D. ASP.NET

Answer: D

WHICH OF THE FOLLOWING CAN BE FACILITATED BY THE INHERITANCE MECHANISM?

1 Use the existing functionality of base class.
2 Override the existing functionality of base class.
3 Implement new functionality in the derived class.
4 Implement polymorphic behavior.
5 Implement containership.

A. 1, 2, 3
B. 3, 4
C. 2, 4, 5
D. 3, 5

Answer: A

WHAT WILL BE THE OUTPUT OF GIVEN CODE SNIPPET?

```
class MyException {
    public static void Main(string[] args){
        try{
            throw new NullReferenceException("C");
            Console.WriteLine("A");
        }
        catch (ArithmeticException e){
            Console.WriteLine("B");
        }
        Console.ReadLine();
    }
}
```

A. A
B. B
C. Compile time error
D. Runtime error

Answer : D

WHAT WILL BE THE OUTPUT OF GIVEN CODE SNIPPET?

```
class MyException {
    public static void Main(string[] args){
        try{
            throw new NullReferenceException("C");
            Console.WriteLine("A");
        }
        catch (NullReferenceException e){
            Console.WriteLine("B");
        }
        Console.ReadLine();
    }
}
```

A. A
B. B
C. Compile time error
D. Runtime error

Answer : B

WHICH OF THESE KEYWORDS IS NOT A PART OF EXCEPTION HANDLING?

A. Try
B. Finally
C. Thrown
D. catch

Answer : C

Exception handling is managed via 5 keywords – try, catch, throws, throw and finally.

WHICH OF THE FOLLOWING IS INCORRECT ABOUT CONSTRUCTORS?

A. Defining of constructors can be implicit or explicit.
B. The calling of constructors is explicit.
C. Implicit constructors can be parameterized or parameter less.
D. Explicit constructors can be parameterized or parameter less.

Answer : C

IMPLICIT OR EXPLICIT CONSTRUCTORS

- Implicit constructors are automatically provided by the compiler when no constructor is defined, while explicit constructors are those defined by the programmer.
- Implicit constructors are typically the default constructor (with no parameters)

IMPLICIT OR EXPLICIT CONSTRUCTORS

- Explicit constructors (constructors defined by the user) can be parameter less or parameterized. If it is parameterized, then the values passed to the constructor can be assigned to the class's data members.
- The implicit constructor initializes variables of the class with the same value even if we create multiple instances of that class.

- When we call a constructor method among different given constructors. We match the suitable constructor by matching the name of constructor first, then the number and then the type of parameters to decide which constructor is to be overloaded. The process is also known as?

A. Method overriding
B. Inheritance
C. Polymorphism
D. Encapsulation

Answer : C

ASP.NET - VALIDATORS

- ASP.NET provides the following validation controls:
  - RequiredFieldValidator : ensures that the required field is not empty
  - RangeValidator : verifies that the input value falls within a predetermined range.
  - CompareValidator : compares a value in one control with a fixed value or a value in another control.
  - RegularExpressionValidator : validating the input text by matching against a pattern of a regular expression
  - CustomValidator : allows writing application specific custom validation routines for both the client side and the server side validation.
  - ValidationSummary : does not perform any validation but shows a summary of all errors in the page.

IN WHICH STAGE OF THE NORMALIZATION PROCESS ARE TRANSITIVE DEPENDENCIES REMOVED?

A. Unnormalized Form (UNF)

B. 1st Normal Form (1NF)

C. 2nd Normal Form (2NF)

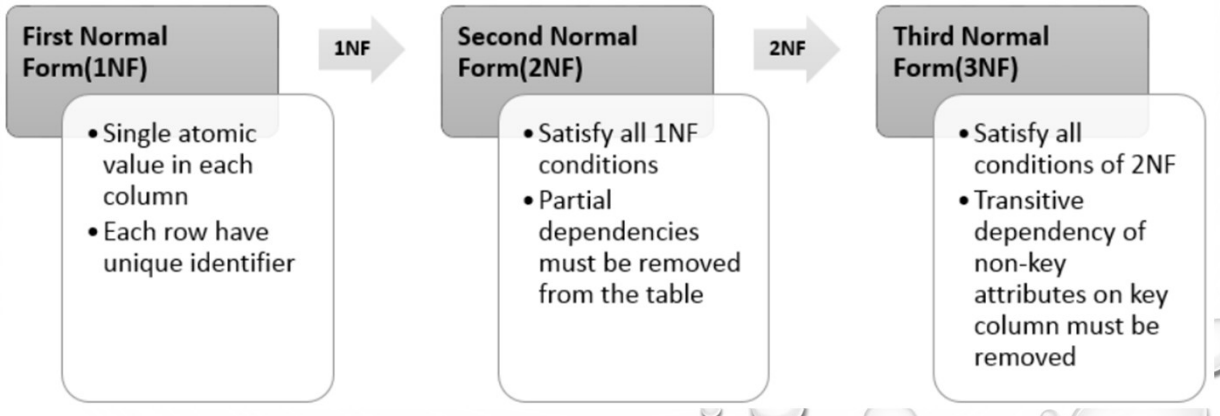
D. 3rd Normal Form (3NF)

Answer : D

DATABASE NORMALIZATION

- 1NF, 2NF, and 3NF are levels of normalization that progressively reduce data redundancy and improve data integrity.
- **First Normal Form (1NF): Eliminating Duplicate Records**
- **Second Normal Form (2NF): Eliminating Partial Dependency**
- **Third Normal Form (3NF): Eliminating Transitive Dependency**

DATABASE NORMALIZATION



OUT PUT?

```
public static void Main()  {
        for (int i = 0; i < 6; i++){
            string print_star = "";
            for (int j = 0; j <= i; j++){
                print_star = print_star + "*";
            }
            Console.WriteLine(print_star);
        }
        Console.ReadKey();
}
```

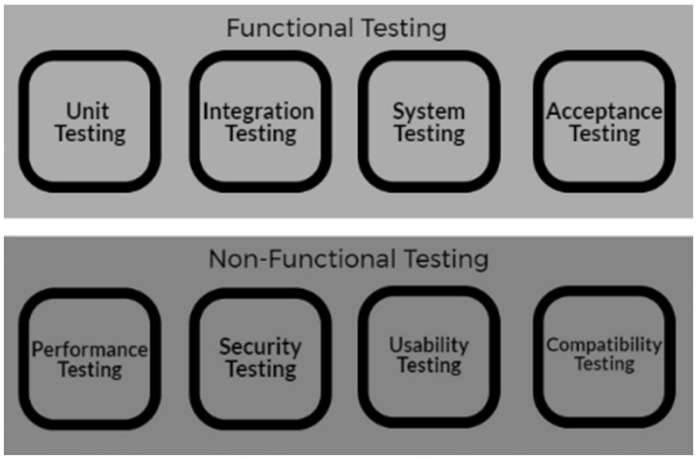
```
*
**
***
****
*****
******
```

WHAT IS NOT BELONGS TO THE FUNCTIONAL TESTING?

A. Unit testing
B. Performance testing
C. Integration testing
D. Acceptance testing

Answer: B

SOFTWARE TESTING



WHAT WILL BE THE OUTPUT OF THE FOLLOWING PROGRAM?

```
class BreakContinue {
    static void Main(string[] args){
        for (int i = -5; i < 10; i++){
            if (i == 0) {
                continue;
            }
            if (i == 6){
                break;
            }
            Console.Write(i+" ");
        }
        Console.ReadLine();
    }
}
```

A. -5 -4 -3 -2 -1 0 1 2 3 4 5 6

B. -5 -4 -3 -2 -1 0 1 2 3 4 5

C. -5 -4 -3 -2 -1 1 2 3 4 5 6

D. -5 -4 -3 -2 -1 1 2 3 4 5

Answer : D

WHAT WILL BE THE OUTPUT OF THE FOLLOWING PROGRAM?

```
class Check{
    static void Main(string[] args){
        int x = 10, y = 20;
        Console.WriteLine("{0},{0}", x,y);
        Console.ReadKey();
    }
}
```

A. 10, 20
B. 10, 10
C. 20, 20
D. Error

ANSWER: B

WHICH TYPE OF CLASS DOES NOT ALLOWED INSTANTIATE BUT ACTS AS A BASE CLASS FOR ITS SUBCLASS IN C#?

A. Abstract class
B. Static class
C. Sealed class
D. Public class

ANSWER: A

WHAT WILL BE THE FINAL VALUES OF THE X, Y AND Z VARIABLES AFTER EXECUTION OF FOLLOWING CODE?

```
static void Main(string[] args)
{
        int x=10, y = 20, z;
        z = ++x + y-- + 2;
        Console.WriteLine("X={0}\t Y={1}\t Z={2}\t", x, y, z);
        Console.ReadKey();
}
```

A. 10,20,32
B. 11, 19, 33
C. 10,19,32
D. 11,20,31

ANSWER: B

WHAT WILL BE THE OUTPUT OF THE FOLLOWING C# CODE?

```
class ArrayEx
{
      static void Main(string[] args){
        int[] arr = {10,15,20,25,30};
        Console.WriteLine("Output = "+ arr[0] + arr[2]);
        Console.ReadKey();
      }
}
```

A. Output = 30
B. Output = 10+20
C. Error
D. Output = 1020

ANSWER: D

STATE MANAGEMENT IS A CRUCIAL PART OF APPLICATION DEVELOPMENT.

EXPLAIN THIS

- State Management is a process by which state and page information is maintained over multiple requests for same or different pages.
- With interactive web sites or dynamic web site, there is a need to preserve some information to identify user, interact with user again and again within same session and same application. This concept is known as Stateful protocol. The information can be related to user, data objects, web pages or server objects.

WHAT WILL BE THE OUTPUT OF FOLLOWING PROGRAM IF YOU INSERT **5432** AS INPUT TO THIS PROGRAM?

```
static void Main(string[] args){
        int n, r;
        n = Convert.ToInt32(Console.ReadLine());
        while (n > 0){
            r = n % 10;
            n = n / 10;
            Console.Write(r);
        }
        Console.ReadLine();
}
```

A. 5432
B. 3245
C. 2345
D. 4325

ANSWER : C

WHICH OF THE FOLLOWING FEATURES OF THE .NET COMMON LANGUAGE RUNTIME (CLR) ALLOWS DIFFERENT PROGRAMMING LANGUAGES TO WORK TOGETHER SEAMLESSLY?

A. Garbage Collection
B. Just-In-Time Compilation
C. Cross-Language Integration
D. Exception Handling

ANSWER: C

WHICH OF THE FOLLOWING IS A KEY DIFFERENCE BETWEEN .NET FRAMEWORK AND .NET CORE REGARDING CROSS-PLATFORM SUPPORT?

A. The .NET Framework is cross-platform and can run on Windows, macOS, and Linux, while .NET Core is Windows-only.
B. The .NET Framework is Windows-only, while .NET Core is cross-platform and can run on Windows, macOS, and Linux.
C. Both .NET Framework and .NET Core are Windows-only frameworks.
D. .NET Core supports only server-side applications, while .NET Framework supports both server-side and desktop applications.

ANSWER: B

```
class Program{
static void Main(){
        int[] arr = { 1, 2, 3, 4, 5 };
        int sum = 0;
        foreach (int i in arr){
                if (i % 2 == 0){
                        sum += i;
                }
                else{
                        sum *= i;
                }
        }
        Console.WriteLine(sum);
}       }
```

OUTPUT?

A. 15

B. 51

C. 50

D. 25

ANSWER: C

WHICH OF THE FOLLOWING IS AN EXAMPLE OF METHOD OVERRIDING IN C#?

A. Defining two methods with the same name but different parameters in the same class.

B. Defining a method in a derived class with the same signature as a method in the base class.

C. Defining two methods with the same name and parameters in the same class.

D. Defining a static method with the same name as an instance method.

ANSWER: B

IN C#, WHICH OF THE FOLLOWING IS TRUE ABOUT INTERFACES?

A. They can contain the implementation of methods.
B. A class can implement multiple interfaces.
C. They can have constructors.
D. They are used to provide inheritance.

ANSWER: B

WHICH OF THE FOLLOWING STATEMENTS CORRECTLY TELL THE DIFFERENCES BETWEEN "=" AND "==“ IN C#?

A. “==“ operator is used to assign values from one variable another variable, “=“ operator is used to compare value between two variables.
B. “=“ operator is used to assign values from one variable another variable, “==“ operator is used to compare value between two variables.
C. No difference between both operators.
D. None of the mentioned.

Answer : B

WHICH OF THE FOLLOWING IS NOT A .NET EXCEPTION CLASS?

A. Exception
B. StackMemoryException
C. DivideByZeroException
D. OutOfMemoryException
E. InvalidOperationException

Answer :B

HOW CAN YOU MAKE A FORM THE STARTUP FORM IN A WINDOWS FORMS APPLICATION?

A. Set the form's Visible property to true
B. Call the form's Show() method
C. Set it in the Program.cs file
D. Set the form's Enabled property to true

ANSWER: C

IN A .NET PROJECT, WHICH FILE IS COMMONLY USED TO MANAGE APPLICATION SETTINGS, SUCH AS CONNECTION STRINGS, LOGGING CONFIGURATIONS, AND ENVIRONMENT-SPECIFIC VARIABLES?

A. settings.config
B. web.config
C. appsettings.json
D. environment.config

ANSWER: C

SQL INJECTION

- SQL injection is a code injection technique that might destroy your database.
- SQL injection is one of the most common web hacking techniques.
- SQL injection is the placement of malicious code in SQL statements, via web page input.

WHAT DOES THE EXECUTENONQUERY() METHOD DO IN ADO.NET?

A. Executes a query that returns a single value
B. Executes a query that returns a data reader
C. Executes a SQL statement that does not return any rows
D. Executes a query that returns multiple tables

ANSWER: C

WHICH OF THE FOLLOWING IS A KEY ADVANTAGE OF USING ASYNC AND AWAIT IN C# APPLICATIONS?

A. It simplifies the syntax of multi-threading.
B. It improves the performance of CPU-bound tasks.
C. It prevents deadlocks in synchronous code.
D. It allows non-blocking I/O operations, improving responsiveness.

ANSWER: D

BRIEFLY EXPLAIN HOW POLYMORPHISM IS IMPLEMENTED IN C#, PROVIDING CODE EXAMPLES TO DEMONSTRATE IT.

- **C# Polymorphism** is a key concept in object-oriented programming (OOP) that allows methods, properties, or operators to take multiple forms. The term "polymorphism" means "many forms"; it enables a single interface to be used for different data types by improving code flexibility and reusability. Polymorphism is achieved through method overloading and method overriding

POLYMORPHISM EXAMPLE

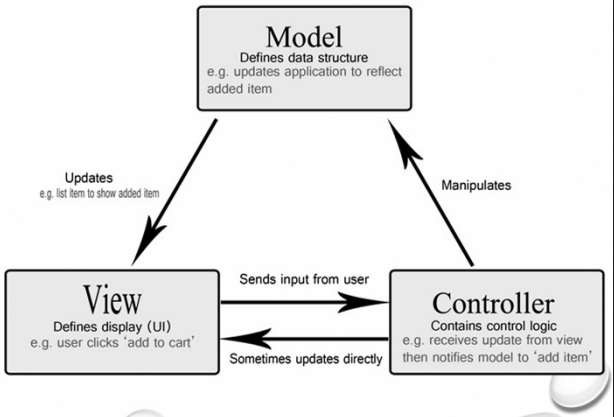
```
class MyPoly {
    public void greeting()  {
        Console.WriteLine("Hello");
    }
    public void greeting(string name) {
        Console.WriteLine("Hello " + name);
    }
    static void Main(string[] args) {
        MyPoly ob = new MyPoly();
        ob.greet();
        ob.greet("Sam");
    }
}
```

EXPLAIN THE ROLE OF ENTITY FRAMEWORK IN DATA ACCESS WITHIN A C# APPLICATION.

- C# Entity Framework is an Object Relational Mapping (ORM) framework that gives developers an automated way to store and access databases.
- It eliminates the need for most of the data-access code that developers usually need to write.

MVC ARCHITECTURE

- MVC (Model-View-Controller) is a software design pattern that separates an application into three interconnected components:
- The Model, which handles data and business logic.
- The View, which displays data to the user.
- The Controller, which manages user input and directs actions to the Model and View.



COMPONENTS OF MVC

Model:

- The Model represents the data and the business logic of the application. It interacts with databases, handles data validation, and performs calculations.

View:

- The View is responsible for displaying data to the user and receiving user input. It's typically implemented using HTML, CSS, and JavaScript in web applications.

Controller:

- The Controller acts as an intermediary between the Model and the View. It receives user input, interacts with the Model to retrieve or modify data, and then instructs the View to display the results. In ASP.NET MVC, Controllers are C# classes that define the methods (actions) that handle HTTP requests and responses

WHAT IS THE CORRECT WAY OF REFERRING AN EXTERNAL STYLE SHEET IN HTML?

A. <stylesheet>styles.css</stylesheet>

B. <style src="styles.css" />

C. <link rel="stylesheet" type="text/css" href="styles.css" />

D. <script type="stylesheet" src="styles.css" />

ANSWER: C