1. What type would you choose for the following “numbers”?

A person’s telephone number

String

A person’s height

Float

A person’s age

Int

A person’s gender (Male, Female, Prefer Not To Answer)

String

A person’s salary

Decimal

A book’s ISBNA

String

book’s price

Decimal

A book’s shipping weight

Float

A country’s population

Long

The number of stars in the universe

Long

The number of employees in each of the small or medium businesses in the United Kingdom (up to about 50,000 employees per business)

Int

1. What are the difference between value type and reference type variables? What is boxing and unboxing?

Value type directly store the data. Reference type store references of the data. For reference types, two variables can reference the same object, so operations on one variable can affect the object referenced by the other variable. For value types, Each has its own copy of data and operation on one can not effect another.

Boxing is the process of converting a value type to the type object or to any interface type implemented by this value type. Unboxing extracts the value type from the object. Boxing is implicit; unboxing is explicit.

1. What is meant by the terms managed resource and unmanaged resource in .NET?

Managed resources are those that are pure .NET code and managed by the runtime and are under its direct control.

Unmanaged resources are those that are not. File handles, pinned memory, COM objects, database connections etc

1. Whats the purpose of Garbage Collector in .NET?

The garbage collector manages the allocation and release of memory for an application. For developers working with managed code, this means that you don't have to write code to perform memory management tasks. Automatic memory management can eliminate common problems, such as forgetting to free an object and causing a memory leak or attempting to access memory for an object that's already been freed.

1. What happens when you divide an int variable by 0?

If u divide an integer or Decimal number by zero throws a DivideByZeroException exception.

2. What happens when you divide a double variable by 0?

Dividing a floating-point value by zero doesn't throw an exception; it results in positive infinity, negative infinity, or not a number (NaN).

1. What happens when you overflow an int variable, that is, set it to a value beyond its range?

By default, when an overflow occurs as a result of an arithmetic operation on an integer type, the result wraps

4. What is the difference between x = y++; and x = ++y;?

X = y ++. First set x value equals to y, then y plus 1.

X = ++ y. First y plus 1, then make x equals to y.

5. What is the difference between break, continue, and return when used inside a loop statement?

In nested loops, the break statement terminates only the innermost loop that contains it.

The continue statement starts a new iteration of the closest enclosing iteration statement.

The return statement terminates execution of the function in which it appears and returns control and the function's result, if any, to the caller.

6. What are the three parts of a for statement and which of them are required?

the keyword For that starts the loop, the condition being tested, and the EndFor keyword that terminates the loop.

Both optional.

7. What is the difference between the = and == operators?

= is use to assign value for variable.

Equality operator == The equality operator == returns true if its operands are equal, false otherwise.

8. Does the following statement compile? for ( ; true; ) ;

Yes. It’s a infinite for loop.

9. What does the underscore \_ represent in a switch expression? Defaults

The underscore (\_) character replaces the default keyword to signify that it should match anything if reached.

1. What interface must an object implement to be enumerated over by using the foreach statement?

IEnumerable.

### 02

1. When to use String vs. StringBuilder in C# ?

While working with the String class, every time you perform some operations on your string, you recreate the entire string in the memory over and over again, whereas StringBuilder allocates some buffer space in the memory and applies modifications into that buffer space.

As the StringBuilder object is mutable, it provides better performance as compared to the String object when heavy string manipulations are involved.

2. What is the base class for all arrays in C#?

The Array class

3. How do you sort an array in C#?

Array.sort(arr)

4. What property of an array object can be used to get the total number of elements in an array?

Length

5. Can you store multiple data types in System.Array?

Yes

1. What’s the difference between the System.Array.CopyTo() and System.Array.Clone()?

The Clone() method returns a new array (a shallow copy) object containing all the elements in the original array. The CopyTo() method copies the elements into another existing array.