

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

A person’s telephone number

string or byte

A person’s height

float

A person’s age

byte or ushort

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

A person’s salary

uint

A book’s ISBN

string or uint

A book’s price

decimal

A book’s shipping weight

double

A country’s population

ulong

The number of stars in the universe

ulong

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

ushort

2.What are the differences between value type and reference type variables? What is boxing and unboxing?

Value type holds data with its own memory allocation, while reference type hold pointer to memory location of data

Boxing is converting value type to object, unboxing is the reverse getting data from a object

3. What is meant by the terms managed resource and unmanaged resource in .NET
a managed resource is anything managed under CLR, while unmanaged is not. In practice unmanage resource is not handle by garbage collector so the programmer must handle memory

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

it automatically frees resources that is no longer being referenced

*/

/*What happens when you divide an int variable by 0?

throws a `System.DivideByZeroException` error

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

results in `double.PositiveInfinity`

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

program will fail to build

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

`y++` returns value before it has been incremented while `++y` returns value after it has been incremented

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

`break` stops the current loop can continues to statements after loop

`continue` skips the rest of the loops and continues at the start of the loop

`return` stops the loop and a value or void

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

initializer: initial starting point of the loop, condition: end condition of the loop, and iterator: what happens at each execution of the loop

all statements are optional

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

`=` assigns a value to an object, `==` check equality of 2 objects returning boolean true or false

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

it will compile but will run forever

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

discard operator

10. What interface must an object implement to be enumerated over by using the `foreach`

statement?

`System.Collections.IEnumerable`

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

`string` is immutable, while `stringbuilder` is mutable, so situation when data is often changed, such as concatenating string in a loop

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

The array class

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

using array.sort method

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

Length or LongLength

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

No

6. What's the difference between the System.Array.CopyTo() and System.Array.Clone()?

System.Array.CopyTo() copies all elements from one array to specified array of large enough size, while System.Array.Clone() does not require a specified location