

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

- A person’s telephone number

String

- A person’s height

float and probably with 2-3 decimal shown

- A person’s age

int

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

String

- A person’s salary

Decimal

- A book’s ISBN

String

- A book’s price

float and with 2 decimal shown

- A book’s shipping weight

float and probably with 2-3 decimal shown

- A country’s population

uint

- 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 difference between value type and reference type variables? What is boxing and unboxing?

Value type cannot take null value, won’t be collected by garbage collector and stored in stack memory.

Reference type will be collected by garbage collector and stored in heap memory.

boxing is the process converting a value type into object(type) or interface type implemented by this value type. Implicit

unboxing is getting the value type from the object. Explicit.

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

managed resource is the objects that created by the program and we can rely on garbage collector to do the memory managements for them.

unmanaged resource need to explicitly managed by ourselves and required manual memory management.

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

It’s used to manage the allocation and release of memory for the application automatically so that we don’t have to write the program for memory management, preventing memory leak and won’t have scenario that we trying to access freed memory.

1. What happens when you divide an int variable by 0?
It'll throw a exception called `DividByZeroException`.
2. What happens when you divide a double variable by 0?
It'll show positive infinity, negative infinity or not a number (NaN).
3. What happens when you overflow an int variable, that is, set it to a value beyond its range?
It'll throw a `OverflowException` if you checked it by default nothing will happen.
4. What is the difference between `x = y++`; and `x = ++y`;
`x = y++` equals to doing increment after assigning y's value to x and `x = ++y` equals to doing increment before assigning y's value to x.
5. What is the difference between break, continue, and return when used inside a loop statement?
break will exit the loop, continue will skip the current loop and continue the rest till the end point. return will terminate the loop and return the value specified.
6. What are the three parts of a for statement and which of them are required?
initialization, condition, iterator. It depends. For example, if we need an infinite loop, then none of them is required.
7. What is the difference between the = and == operators?
= is assignment operator which used to assign value, == is equality operator which check the equality of the values.
8. Does the following statement compile? `for (; true;) ;`
Yes and it's an infinite loop.
9. What does the underscore _ represent in a switch expression?
_ is replacement of "default"
10. What interface must an object implement to be enumerated over by using the foreach statement?
`IEnumerable` interface.