1.

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

A person’s telephone number

uint

A person’s height

float

A person’s age

byte

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

char

A person’s salary

decimal

A book’s ISBN

ulong

A book’s price

decimal

A book’s shipping weight

float

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?

Value type:

Directly contain their data;

Each has its own copy of data;

Operation on one cannot affect another.

Reference type:

Store references to their data (Known as objects);

Two reference variables can reference the same object;

Operation on one can effect another.

What is boxing and unboxing?

Boxing is the process of converting a value type to the type object or to any interface type implemented by this value type.

Unboxing is an explicit conversion from the type object to a value type or from an interface type to a value type that implements the interface.

3.

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

Unmanaged resource is used to describe something not directly under the control of the garbage collector.

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

4.

What’s the purpose of Garbage Collector in .NET?

The garbage collector manages the allocation and release of memory for an application.

Controlling Flow and Converting Types

Test your Knowledge

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

Undefined

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

Infinity

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

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| --- | --- | --- | --- | --- | --- | --- |
| Severity | Code | Description | Project | File | Line | Suppression State |
| Error | CS1021 | Integral constant is too large | Practice000 | C:\Users\Seann\Desktop\Subject\C#Fundamental\Practice000\Practice000\Program.cs | 13 | Active |

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

X++ executes the statement and then increments the value.

++X increments the value and then executes the statement.

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

Break statement breaks the loop/switch whereas continue skip the execution of current iteration only and it does not break the lop/switch. i.e. it passes the control to the next iteration of the enclosing while loop, do while loop, for loop of for each statement in which it appears.

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

Initialization, Condition, and the advancement to the next iteration.

None is required.

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

== operator is the comparison operator. = operator is used to assign value.

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

Yes.

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

It 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?

The IEnumerable interface

What will happen if this code executes?

Create a console application and enter the preceding code. Run the console application and view the output. What happens?

The output runs itself infinitely. Because the i is byte type, the max exceeds the maximum value of byte type.

What code could you add (don’t change any of the preceding code) to warn us about the problem?

Assign max and i the same data type.