

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: integer

A person's gender (Male, Female, Prefer Not to Answer): string

A person's salary: float

A book's ISBN: string

A book's price: float

A book's shipping weight: float

A country's population: integer

The number of stars in the universe: double

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

2. What are the difference between value type and reference type variables?

value type variables hold the actual value, whereas reference type variables hold a reference to a location in memory where the value is stored.

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

you will receive is a DivideByZeroException

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

If the double variable is a positive or negative non-zero value, the result of the division will be a positive or negative infinity, respectively.

If the double variable is positive or negative zero, the result of the division will be a special value called NaN (Not a Number)

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

The value will wrap around and become a value within the valid range. For example, if you assign the value 2,147,483,648 to an int variable, it will wrap around to -2,147,483,648.

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

`x = y++` means 'y' is first assigned to 'x', and then 'y' is incremented.

`x = ++y` works in the opposite direction

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

break is used to terminate the loop early.

continue is used to skip the current iteration of the loop and move on to the next iteration.

return is used to exit the loop and return from the current method.

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

Initialization: This is the code that is executed before the loop begins. It initializes any variables that will be used in the loop.

Condition: This is the Boolean expression that is evaluated before each iteration of the loop.

Iteration: This is the code that is executed after each iteration of the loop.