

22/07/17

JAVA ASSIGNMENT

1 Explain the difference between primitive and reference data types. Primitive data types store actual values and are initialized by default and can never be null, while reference data types store the memory address of an object and are initialized by default to null.

2 Define the scope of a variable (hint: local and global variable). Local variables are declared inside a function or block code and can only be used by statements that are inside that function or block of code while global variables are declared outside of any function and have ~~get~~ a global space.

3 Why is initialization of variables required?

It ensures that the variables have a defined value before it is used in the program.

4 Define static, instance and ^{local} variables.

→ Instance variables are variables declared inside a class but outside a method, constructor or block.

→ Static variables are variables declared inside a class but outside a method, constructor or block. They are also known as class variables.

→ ~~Instance variables~~ Local variables are declared inside a method, constructor or block and are only accessible within that method, constructor or block.

5 Define/Differentiate between widening and narrow casting in Java.

Widening casting takes place when a variable of a smaller data type is assigned to a larger data type. This is done automatically by the compiler and there is no chance of data loss.

Narrow casting is the conversion of a larger data type to a smaller data type.

6 Fill in the missing values

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TYPE	SIZE (IN BITES)	DEFAULT	RANGE
Boolean	1 bit	false	true, false
Char	2	'\u0000' to '\u0000'	'\u0000' to '\uffff'
Byte	8 bit	0	-128 to 127
Short	16 bit	0	-2^{15} to $2^{15}-1$
Int	4 - 32 bit	0	2,147,483,648 to 2,147,483,647
Long	1	0L	-128 to 127 (inclusive)
Float	4	00.0f	$1.40239746 \times 10^{-45}$ to $3.40282347 \times 10^{38}$
Double	8	0.0d	-1.8×10^{308} to 1.8×10^{308}

7 Define package as used in java programming

A package is a namespace that groups related classes and interfaces together.

8 Explain the importance of using Java packages

Java packages provide access protection which means that classes and interfaces can be made public or private within a package.