Local Variables

- They are declared within the method, and have limited scope.
- UPPERCASE is used.

5. Differentiate between widening and narrowing casting in Java.
Widening Casting converts smaller variables to larger variables, for example, char to String while narrowing Casting converts larger variables to smaller variables, for example integer to char.

6. Fill in the missing values.

Type	Size in bytes	Default	Range
Boolean	1 bit	false	true, false
Char	2	u0000	'\u0000' to '\uffff'
Byte	8 bits	0	-128 to 127
Short	16 bites	0	-2^{15} to $+2^{15}-1$
Int	4	0	-2^{31} to $+2^{31}-1$
Long	8	0L	-2^{63} to $+2^{63}-1$
Float	4	0.0f	3.4e-038 to 3.4e+038
Double	8	0.0d	-1.8E+308 to +1.8E+308

7. Define class as used in OOP.
It is a template used to create variables and method implementation

8. Importance of Classes in Java.
They create and manage new objects.
Can define types of operations that can be performed on an object.
It defines a nature of a future object.

Assignment.

1. Differences between primitive and reference data types.

Primitive data type	Reference data type
① Stores the actual value hence memory-efficient.	① Stores the memory addresses.
② Examples are integer, boolean, float, char, double.	② Examples are arrays, classes, and interfaces.

2. Scope of a variable.

The Scope tells the compiler about a segment within a program where the ~~program is~~ variable is used.

Types are;

Local Scope → Programmers declare local variables in a local Scope or Method scope, within the method.

Global Scope → Any variable declared outside a function or a variable that can be accessed anywhere in the program.

3. Why initialisation of variables is required.

It is required because it can prevent unintended errors during the course of running an application.

The code is made ~~of~~ more efficient since no temporary objects are created for the initialization, hence faster coding.

4. Differentiate between Static, instance and local variables.

Static Variables.

- They are declared using a keyword and are used for shared data across all class instances.

Instance Variables.

- Are declared within a class but outside a method.
- Use this for attributes specific to the object.
- Camel case is used.