Learning Consolidation

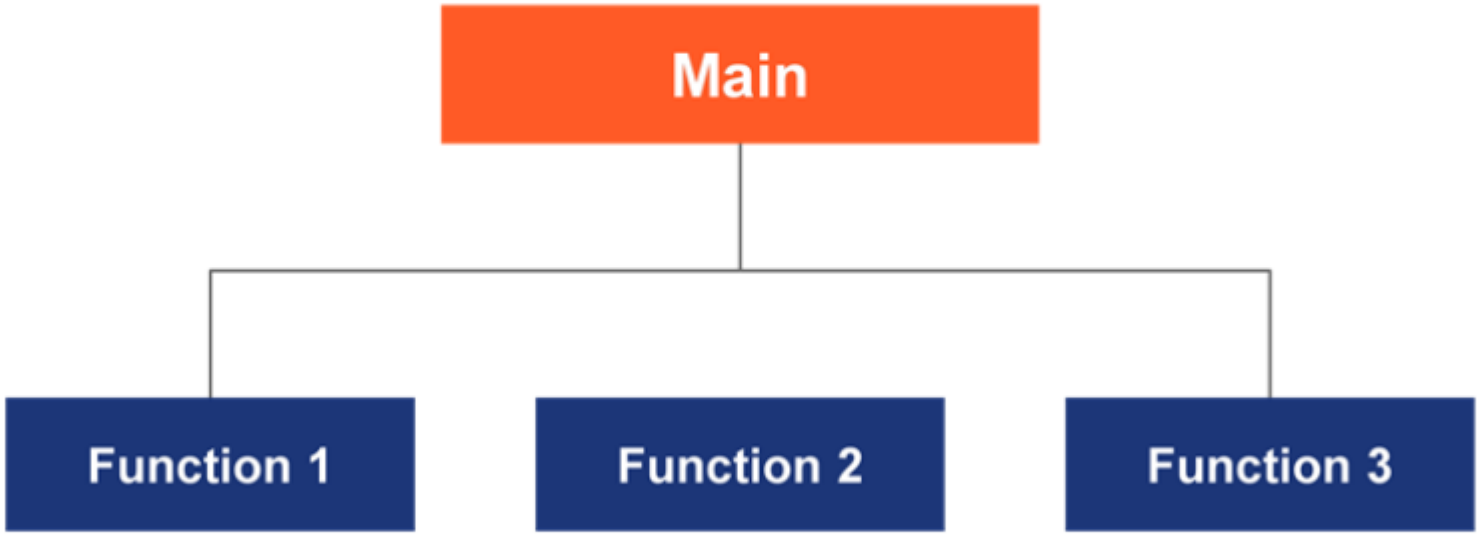
Implementing Modular Programming Using Functions

Learning Objective

- Describe Functions
- Describe Method Structure
- Explain Method Call
- Define Local and Instance variable
- Elaborate on the method in a Nutshell

What Is Modular Programming?

- Modular programming is dividing the program into small, independent modules which have some specific functionality, instead of writing a program as one large block of code.



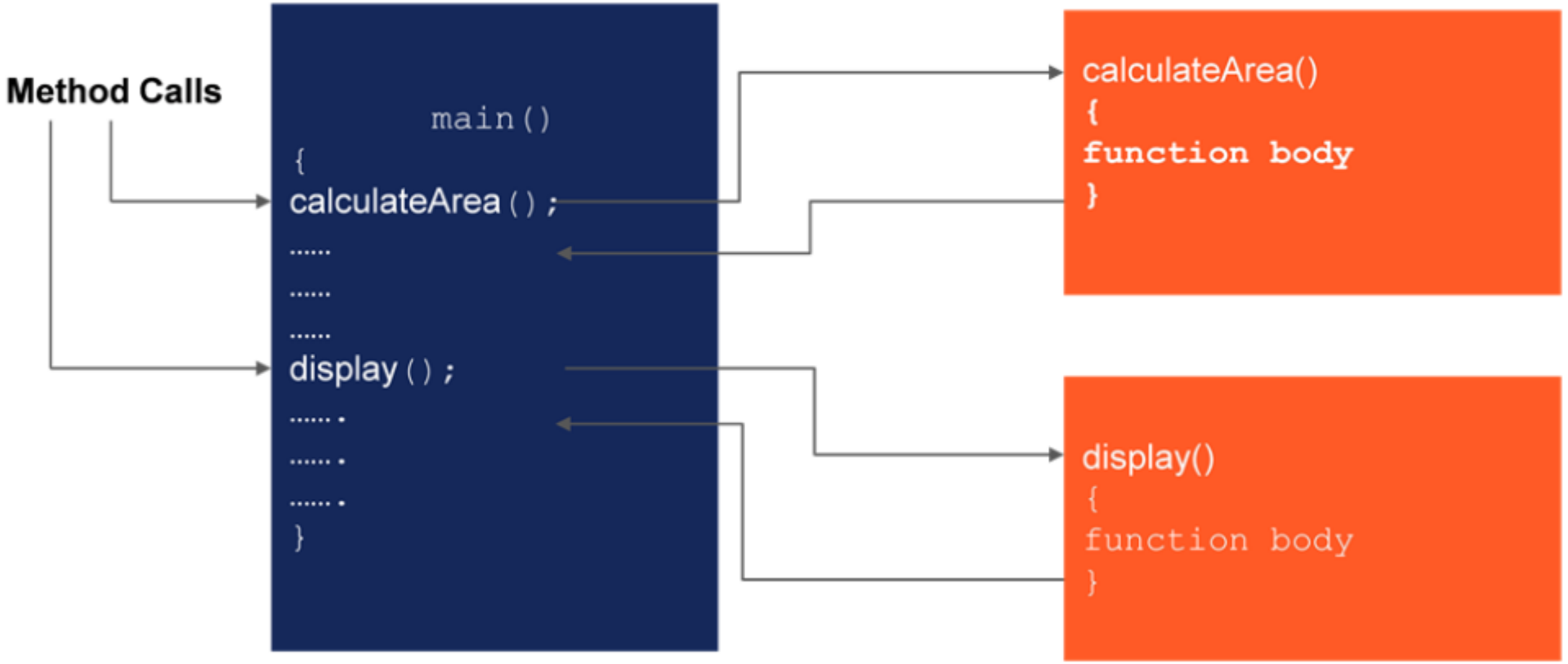
Structure of a Method

```
<modifier> <return-type> <method-name>(<parameter-list)
{
    <method body>
}
```

- **Modifier:** The `modifier` tells the compiler how to call the method.
- **Return type:** The return type is the data type of the value the method returns i.e., the output. A method may or may not return a value. If the method does not return a value, the keyword used is **`void`** instead of the data type.
- **Method name:** The actual name of the method.
- **Parameter list:** A parameter is like a placeholder for input values to the method and is optional.
- **Method body:** The method body contains a collection of statements that define what the method does or the logic for the code goes here.

Note *- Modifier will be discussed in detail later in the course*

Method Call


Method Calls
main()
{
calculateArea();
.....
.....
.....
display();
.....
.....
.....
}
calculateArea()
{
function body
}
display()
{
function body
}

Instance Variable vs. Local Variable

Instance Variable	Local Variable
An instance variable is a variable declared in a class, but outside a method.	A local variable is a variable that is declared inside a method or a block.
The instance variable has default values.	Local Variable once declared should be initialized.
Their scope is the entire class.	Their scope is within the methods only where they are declared.

Return Type of the Method

- The type of data returned by a method must be compatible with the return type specified by the method. For instance, if the return type of some method is boolean, we can not return an integer.
- While calling the method the variable receiving the value returned by the method must also be compatible with the return type.

Method In a Nutshell