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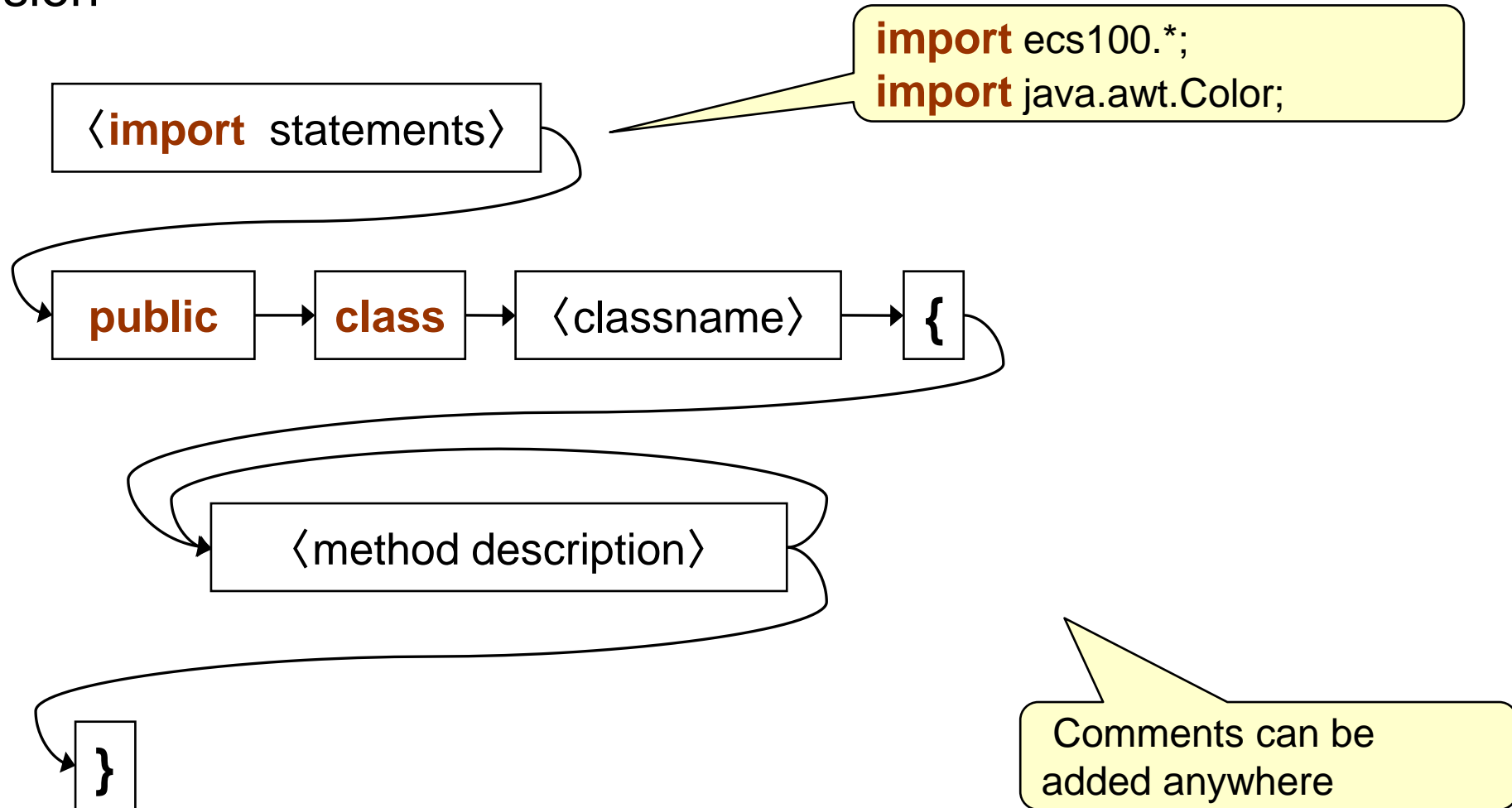
# **Syntax 101**

## **COMP 102**

**Victoria University of Wellington**

# Syntax rules: Program structure

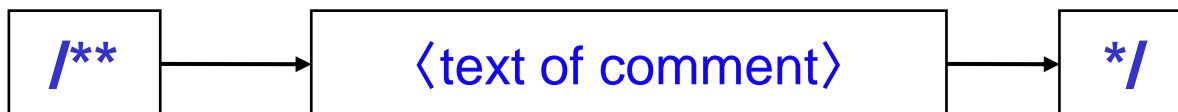
- First version



# Comments

Three kinds of comments:

- Documentation comments



Top of class,  
Before each method

eg `/** Program for converting between temperature scales */`

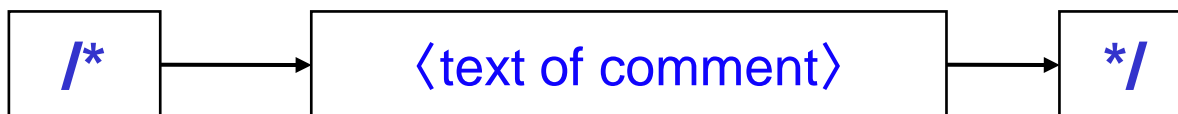
- end-of-line comments



at end of any line

eg `double celsius = (fahren - 32.0) * 5.0 / 9.0; // compute answer`

- anywhere comments



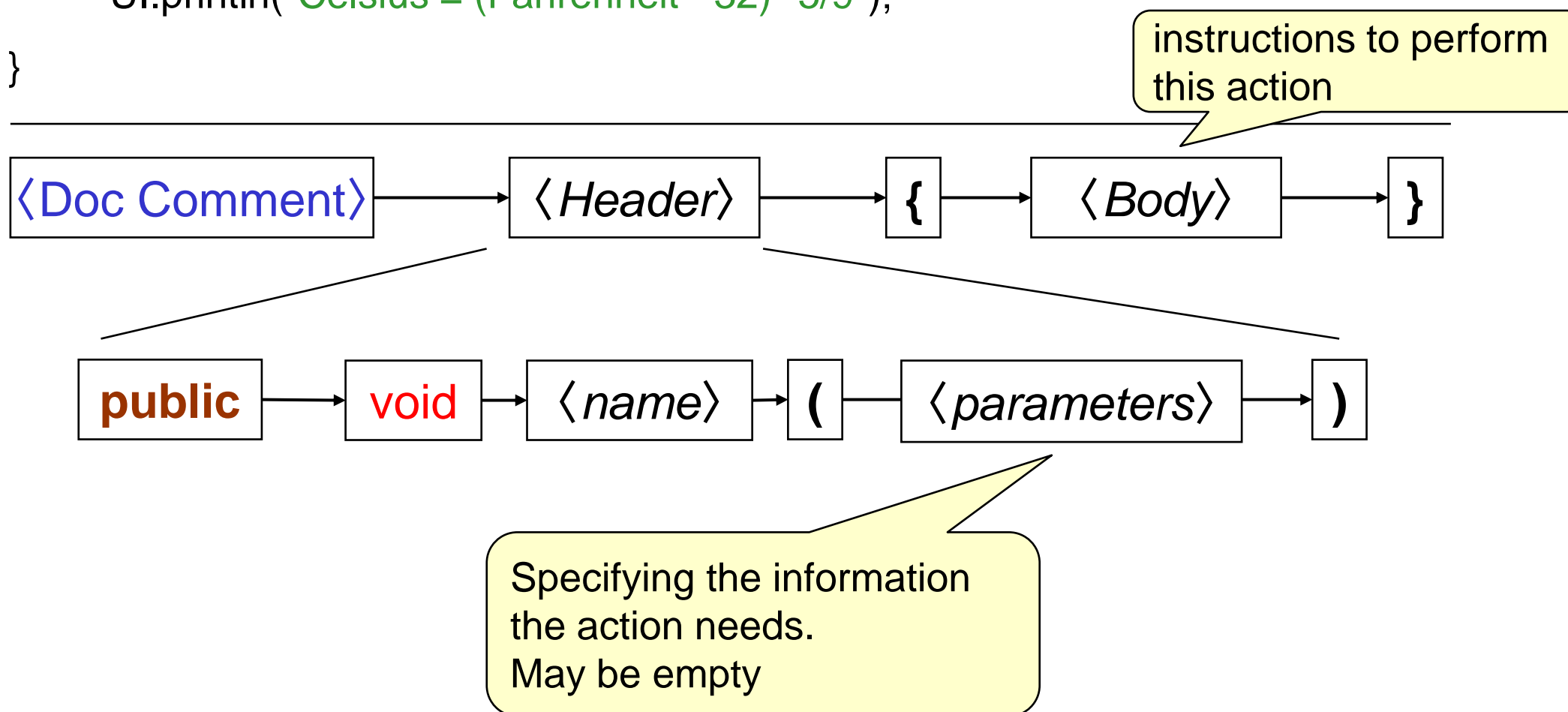
multi-line, or  
middle of line, or ...

eg `/* double fahren = celsius * 9 / 5 + 32;  
 UI.println(celsius + "C is " + fahren + " F"); */`

# Method Definitions

```
/** Print out the conversion formulas */
```

```
public void printFormula ( ) {  
    UI.println("Celsius = (Fahrenheit - 32) *5/9");  
}
```



# “Statements” (instructions)

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(programmer jargon: single instructions are called “statements” because computer scientists like to misuse ordinary words!)

Two important kinds of statements:

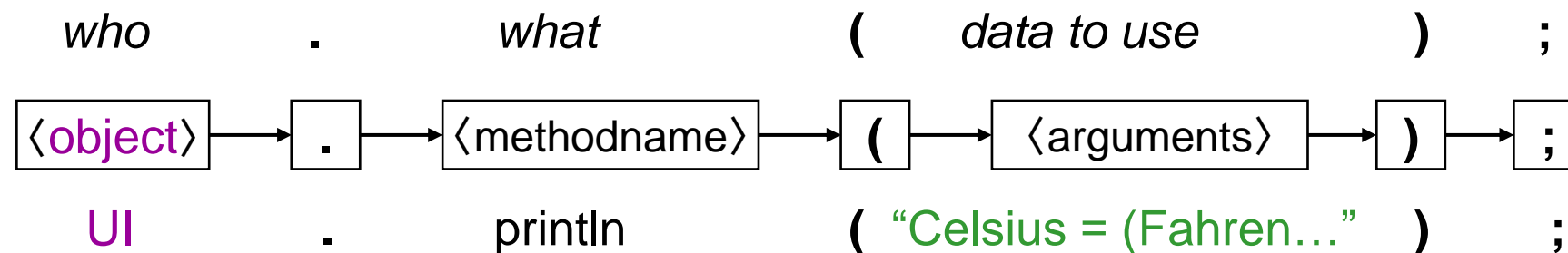
- method call statement:
  - tell some object to perform one of its methods.  
*eg:* tell the UI object to ask the user for a number  
*eg:* tell this object to print the celsius value of a temperature  
*eg:* tell the UI object to print out a string  
*eg:* tell the UI object to add a button
- assignment statement
  - compute some value and put it in a place in memory.

# Method Calls

```
/** Print out the conversion formulas */
```

```
public void printFormula() {
    UI.println( "Celsius = (Fahrenheit - 32) *5/9" );
}
```

- Method call Statement:



- Meaning of Statement:

- Tell the object
  - to perform the method
  - using the argument values provided

# Objects and their methods in Java

- What objects are there?

**Predefined** eg:

- **UI** a "User Interface" window with several panes
  - quit() addButton(...) println(...) drawRect(...) clearGraphics(), askDouble(...) askString(...)
- **Math** methods for mathematical calculations
  - random( ), sin(...)
- **System** representing the computer system
  - currentTimeMillis( )



Some method calls return a value

**Others**

- **this** The object(s) defined by this class in your program
- New objects that your program creates - each class you define can instantiate objects