

CRT - Chapter 6

2. Explain the difference between method declaration and method body.

Method declaration: Defines the methods name, return type, parameters (if any)

Method body: Includes the piece of code that runs when the method is called

3. What type of keyword is used to change the access level of a method.

Access modifier

4. What is another word used for describing the access level of a method.

Visibility

5. Explain the scope of each the variables in the code below:

```
public class ScopeExample {  
    public static void method1() {  
        int var3;  
        for (int var4 = 0; var4<2; var4++) {  
            var3+=1;  
        }  
    }  
}  
  
public static void main(String[] args) {  
    int var1;  
    for (int var2 = 0; var2 < 5; var2++) {  
        method1();  
    }  
}
```

Var1 is declared in the main method and is limited to the main method

Var2 is limited to the for loop in the main method

Var3 is limited to the body of method1 it is declared within method1

Var4 is inside method1 and limited to the for loop in method1

6. Write a method declaration for each of the following descriptions:

a) A class method named getVowels that can be called by any other method, requires a String parameter, and returns an integer value

```
public static int getVowels(String str) {  
}
```

b) A class method named `extractDigit` that can be called by any other method, requires an integer parameter, and returns a `String` parameter.

```
public static String extractDigit(int number) {  
}
```

c) A class method name `insertString` that can be called by any other method, requires a `String` parameter and an integer parameter, and returns a `String` Parameter.

```
public static String insertString(String str, int index) {  
}
```

7. a) How does the compiler distinguish one method from another?

It distinguishes different methods from each other through the number of parameters, parameter types, and the order of the parameters

b) How many values can a return statement send back to the calling statement?

A return statement can send back one value to the calling statement, but this value can have different forms, such as arrays, collections, or primitive or single objects.

c) How is the declaration of a method returning a value different from the declaration of a method that does not return a value?

The key difference between a method that returns a value and one that does not return a value is the return type

8. a) What is the *return* statement used for?

The return statement is used to exit a method and pass a value back to the caller

b) How many values can a *return* statement send back to the calling statement?

A return statement can send back one value to the calling statement

c) How is the declaration of a method returning a value different from the declaration of a method that does not return a value

A method declared with `void` does not return a value and cannot return a statement. If a method does not contain `void` then it must contain a return statement.

9. Find and explain the error in the code

```
public class MethodCallExample {
```

```
public static int doSomething() {  
  
    return(5);  
}  
}  
public static void main(String[] arg ) {  
    int num;  
    doSomething();  
    num=doSomething();  
}
```

In the code there is a syntax error, there is a missing closing bracket in the main method.

A logical error is that the doSomething() method and the main method are defined outside of the same class

For the main method to call doSomething() both methods must reside within the same class. The doSomething() method is inside the MethodCallExample but the main method is outside of it