

Methods ... an introduction

What is a method?

- ▶ A **group of programming lines** which are identified by a name

In Java, there are 2 types of methods:

- ▶ procedural methods
 - ▶ functional methods
-
- In other languages, they are often just called “procedures” and “functions”

Methods ... an introduction

- In Java: A **'procedural method'** is a group of commands that simply performs a task.
 - ▶ You already use procedural methods written within the Java code. For example, `c.clear()`; is a procedural method found within the Console library.

```
import java.awt.*;
import hsa.Console;
public class Example
{ static Console c = new Console();
  static public void main(String args[])
  { int num;
    c.println( "This program will call a method");
    c.println( " ");
    c.print( "Enter a number: ");
    num = c.readInt();
    if (num == 1)
      one( );
    else if (num ==2)
      two( );
    else
      other();
  }
```

Main 'controls' the execution of each method

```
static void one()
{ c.println( "You hit 1");
  c.println( "Press any key");
  c.getChar();
}
```

```
static void two()
{ c.println( "You hit 2");
  c.println( "Press any key");
  c.getChar();
}
```

```
static void other()
{ c.println( "You did not hit 1 or 2");
  c.println( "Press any key");
  c.getChar();
}
```

Methods ... an introduction

```
import java.awt.*;
import hsa.Console;
public class Example2
{ static Console c = new Console();
```

GLOBAL IDENTIFIER / CLASS IDENTIFIER

- allows for its use anywhere in the code
- memory is retained until the program ends

```
    static int num = 0;
    static public void main(String args[])
```

LOCAL IDENTIFIER / CONTROL BLOCK IDENTIFIER

- found within the control block main
- memory retained for entire program, but accessible ONLY through main

```
    { String name;
      c.clear();
      c.print ( "Enter your name:");
      name = c.readLine();
      num = name.compareTo( "M" );
      if (num<0)
          first_half();
      else
          second_half();
    }
```

LOCAL IDENTIFIER / METHOD IDENTIFIER

- found within the method
- memory retained ONLY while method is in use

```
    static void first_half()
```

```
    { c.println( "Your name is in the 1st of the alphabet with a difference of " + num);
    }
```

```
    static void second_half()
```

```
    { char d = '*';
      for ((int x=0; x<100; x++) c.print(d);
      c.println( "You name is in the 2nd half of the alphabet");
    }
```

INDEX IDENTIFIER

- found anywhere that a 'for' is used
- memory retained for repetition structure only, and no longer exists after 'for' is done

Methods ... an introduction

TERMS TO KNOW:

- ☞ Method
- ☞ Functional Method
- ☞ Procedural Method
- ☞ Call
- ☞ Invoke
- ☞ Global/Class Identifier
- ☞ Local Method Identifier
- ☞ Local Main Identifier
- ☞ Index Identifier
- ☞ Know how long memory is retained for each identifier