

Activity 1, Section 1.1

Run Hello world

The screenshot shows a web browser window displaying a tutorial from introcs.cs.princeton.edu/java/11hello/. The tutorial explains how to write a Java program in the `main()` method. It lists two steps: 1. Copy `HelloWorld.java` into a new file whose name is the program name followed by `.java`. 2. Replace `HelloWorld` with the program name everywhere. Below the text, a terminal window is open, showing the following commands and output:

```
C:\Program Files\Java\jdk1.7.0_80\bin>% java D:\JAU0\Activity1\Code\HelloWorld
Error: no se reconoce como un comando interno o externo,
programa o archivo por lotes ejecutable.

C:\Program Files\Java\jdk1.7.0_80\bin>java D:\JAU0\Activity1\Code\HelloWorld
Error: no se ha encontrado o cargado la clase principal D:\JAU0\Activity1\Code\H
elloWorld

C:\Program Files\Java\jdk1.7.0_80\bin>java D:\JAU0\Activity1\Code\HelloWorld
Error: no se ha encontrado o cargado la clase principal D:\JAU0\Activity1\Code\H
elloWorld

C:\Program Files\Java\jdk1.7.0_80\bin>java D:\JAU0\Activity1\Code\HelloWorld
Error: no se ha encontrado o cargado la clase principal D:\JAU0\Activity1\Code\H
elloWorld

C:\Program Files\Java\jdk1.7.0_80\bin>cd D:\JAU0\Activity1\Code
C:\Program Files\Java\jdk1.7.0_80\bin>cd /d D:\JAU0\Activity1\Code
D:\JAU0\Activity1\Code>java HelloWorld
Hello, World
D:\JAU0\Activity1\Code>java HelloWorld_
```

Below the terminal window, a small box shows the output of the program:

```
% javac UseArgument.java
% java UseArgument Alice
Hi, Alice. How are you?
% java UseArgument Bob
Hi, Bob. How are you?
```

The taskbar at the bottom shows the taskbar with icons for 'Hello Wor...', 'Archivos d...', 'bin', 'Code', 'Equipo', 'C:\window...', 'HelloWor...', 'Sistema', and a system tray with the time '12:13 a.m.' and date '30/04/2015'.

Run Hello world with arguments

The screenshot shows a Windows Explorer window displaying the contents of the `Code` directory. The files listed are:

Nombre	Fecha de modifica...	Tipo	Tamaño
HelloWorld.class	29/04/2015 11:54 ...	Archivo CLASS	1 KB
HelloWorld.java	29/04/2015 11:39 ...	Archivo JAVA	1 KB
UseArgument.class	30/04/2015 12:18 a...	Archivo CLASS	1 KB
UseArgument.java	30/04/2015 12:16 a...	Archivo JAVA	1 KB

Below the Explorer window, a terminal window is open, showing the following commands and output:

```
C:\windows\system32\cmd.exe
javac: file not found: UseArguments.java
Usage: javac <options> <source files>
use -help for a list of possible options

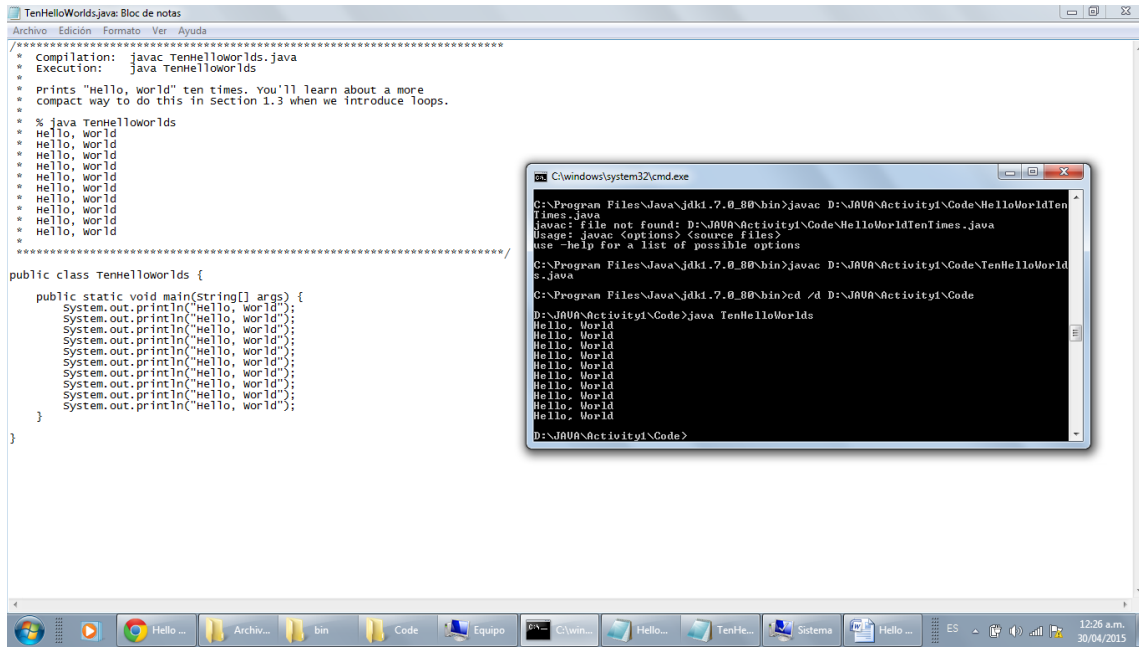
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAU0\Activity1\Code\UseArguments.
.java
D:\JAU0\Activity1\Code>java UseArguments
Error: class UseArgument is public,
should be declared in a file named UseArgument.java
public class UseArgument {
    1 error

C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAU0\Activity1\Code\UseArgument.j
ava
C:\Program Files\Java\jdk1.7.0_80\bin>cd /d D:\JAU0\Activity1\Code
D:\JAU0\Activity1\Code>java UseArgument
Hi, Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 0
    at UseArgument.main(UseArgument.java:20)
D:\JAU0\Activity1\Code>java UseArgument Jose
Hi, Jose. How are you?
D:\JAU0\Activity1\Code>
```

The taskbar at the bottom shows the taskbar with icons for 'UseArgu...', 'Archivo...', 'bin', 'Code', 'Equipo', 'C:\wind...', 'HelloW...', 'Sistema', and a system tray with the time '12:21 a.m.' and date '30/04/2015'.

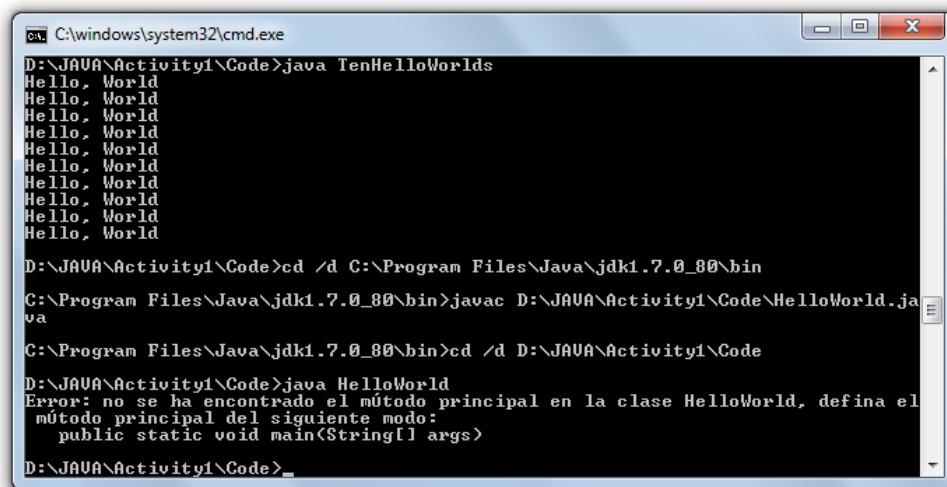
EXERCISES

1. Write a program `TenHelloWorlds.java` that prints "Hello, World" ten times.

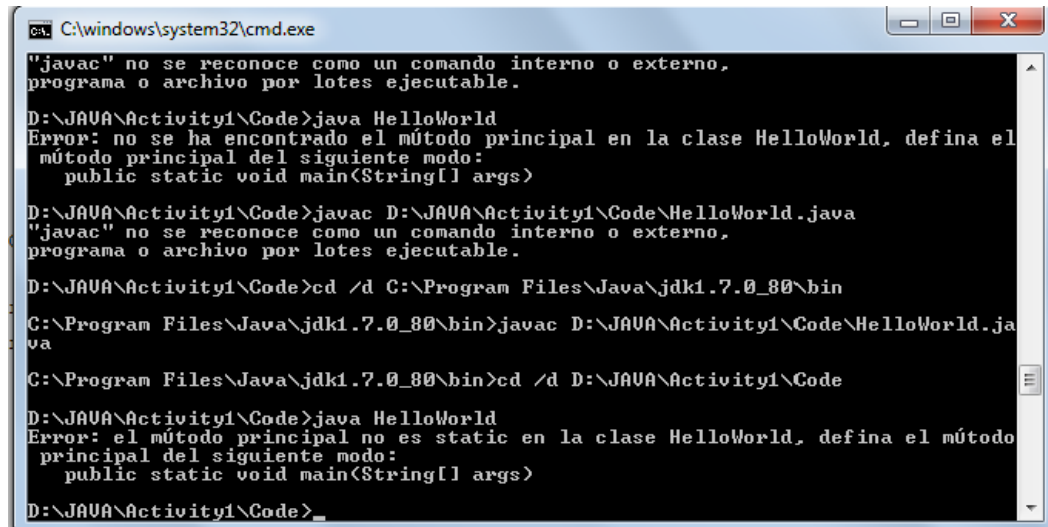


2. Describe what happens if, in `HelloWorld.java`, you omit

a. `Public`



b. Static



```
C:\windows\system32\cmd.exe

"javac" no se reconoce como un comando interno o externo,
programa o archivo por lotes ejecutable.

D:\JAVUA\Activity1\Code>java HelloWorld
Error: no se ha encontrado el método principal en la clase HelloWorld, defina el
método principal del siguiente modo:
    public static void main<String[] args>

D:\JAVUA\Activity1\Code>javac D:\JAVUA\Activity1\Code\HelloWorld.java
"javac" no se reconoce como un comando interno o externo,
programa o archivo por lotes ejecutable.

D:\JAVUA\Activity1\Code>cd /d C:\Program Files\Java\jdk1.7.0_80\bin

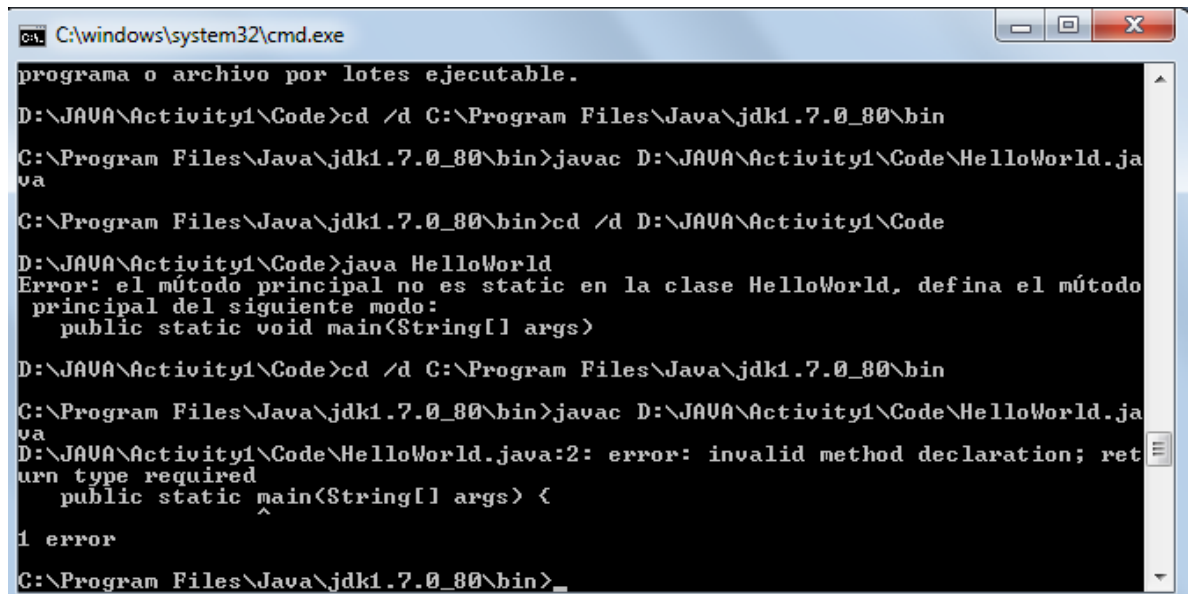
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java

C:\Program Files\Java\jdk1.7.0_80\bin>cd /d D:\JAVUA\Activity1\Code

D:\JAVUA\Activity1\Code>java HelloWorld
Error: el método principal no es static en la clase HelloWorld, defina el método
principal del siguiente modo:
    public static void main<String[] args>

D:\JAVUA\Activity1\Code>
```

c. Void



```
C:\windows\system32\cmd.exe

programa o archivo por lotes ejecutable.

D:\JAVUA\Activity1\Code>cd /d C:\Program Files\Java\jdk1.7.0_80\bin

C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java

C:\Program Files\Java\jdk1.7.0_80\bin>cd /d D:\JAVUA\Activity1\Code

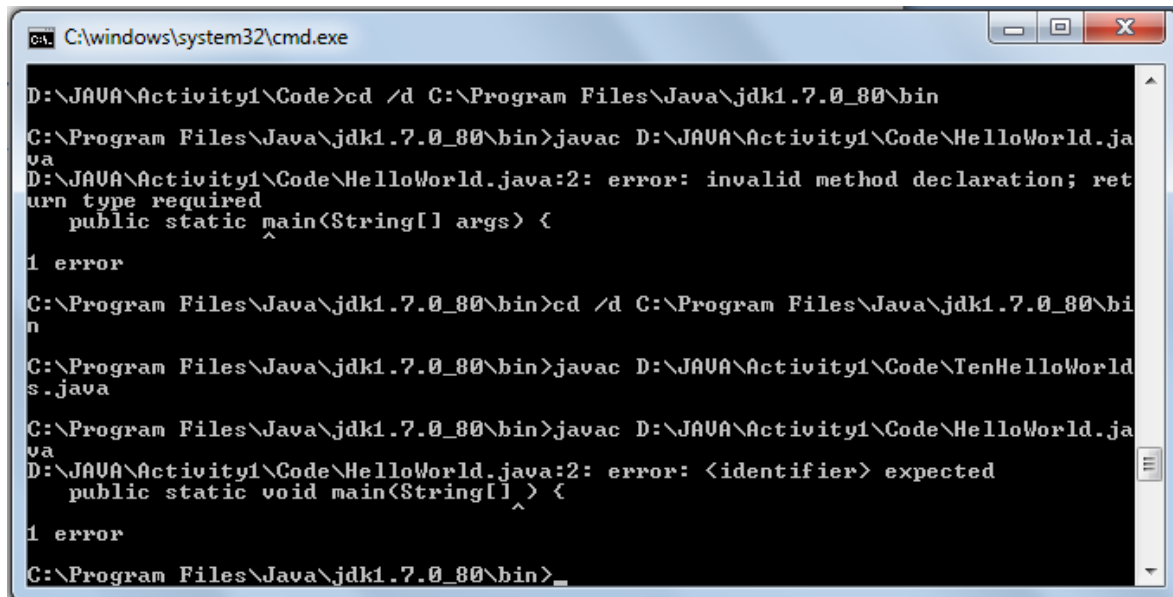
D:\JAVUA\Activity1\Code>java HelloWorld
Error: el método principal no es static en la clase HelloWorld, defina el método
principal del siguiente modo:
    public static void main<String[] args>

D:\JAVUA\Activity1\Code>cd /d C:\Program Files\Java\jdk1.7.0_80\bin

C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: invalid method declaration; ret
urn type required
    public static main<String[] args> {
                ^
1 error

C:\Program Files\Java\jdk1.7.0_80\bin>
```

d. args



```
C:\windows\system32\cmd.exe

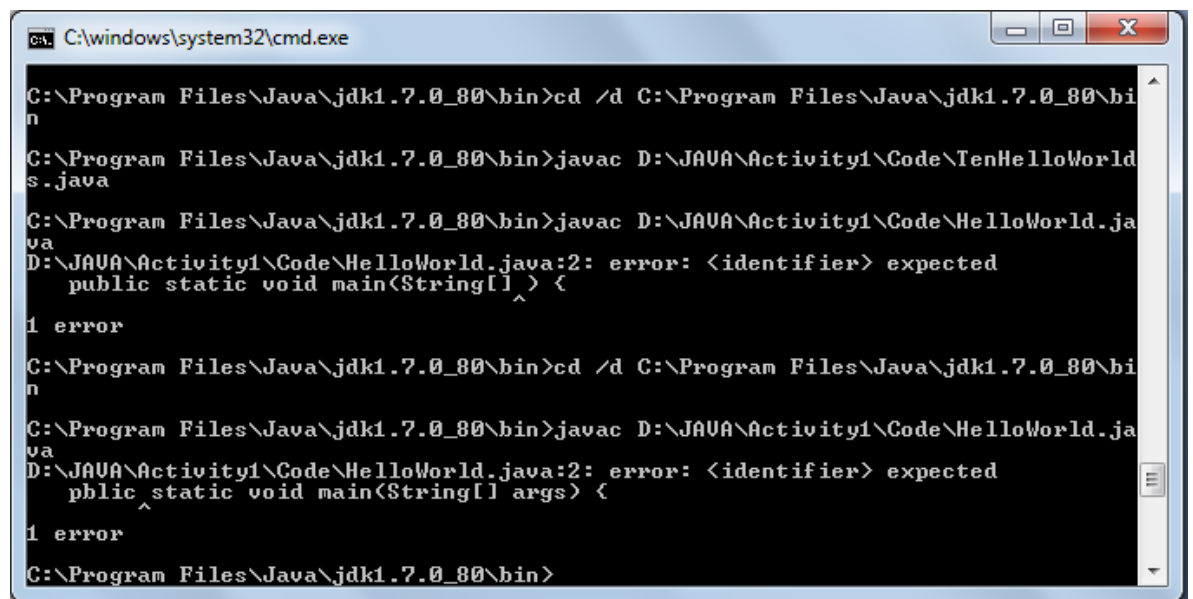
D:\JAVUA\Activity1\Code>cd /d C:\Program Files\Java\jdk1.7.0_80\bin
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: invalid method declaration; return type required
    public static main(String[] args) {
                   ^
1 error

C:\Program Files\Java\jdk1.7.0_80\bin>cd /d C:\Program Files\Java\jdk1.7.0_80\bin
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\TenHelloWorlds.java
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected
    public static void main(String[] ) {
                                   ^
1 error

C:\Program Files\Java\jdk1.7.0_80\bin>
```

3. Describe what happens if, in HelloWorld.java, you misspell (by, say, omitting the second letter)

a. Public



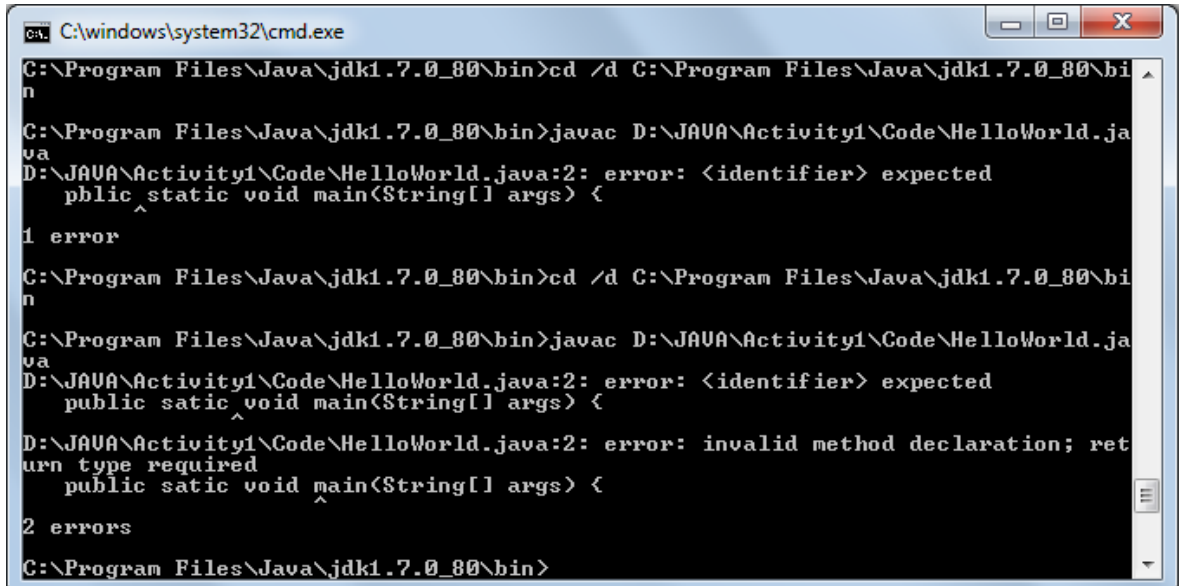
```
C:\windows\system32\cmd.exe

C:\Program Files\Java\jdk1.7.0_80\bin>cd /d C:\Program Files\Java\jdk1.7.0_80\bin
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\TenHelloWorlds.java
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected
    pblic static void main(String[] ) {
    ^
1 error

C:\Program Files\Java\jdk1.7.0_80\bin>cd /d C:\Program Files\Java\jdk1.7.0_80\bin
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected
    pblic static void main(String[] args) {
    ^
1 error

C:\Program Files\Java\jdk1.7.0_80\bin>
```

b. static



```
C:\windows\system32\cmd.exe

C:\Program Files\Java\jdk1.7.0_80\bin>cd /d C:\Program Files\Java\jdk1.7.0_80\bin

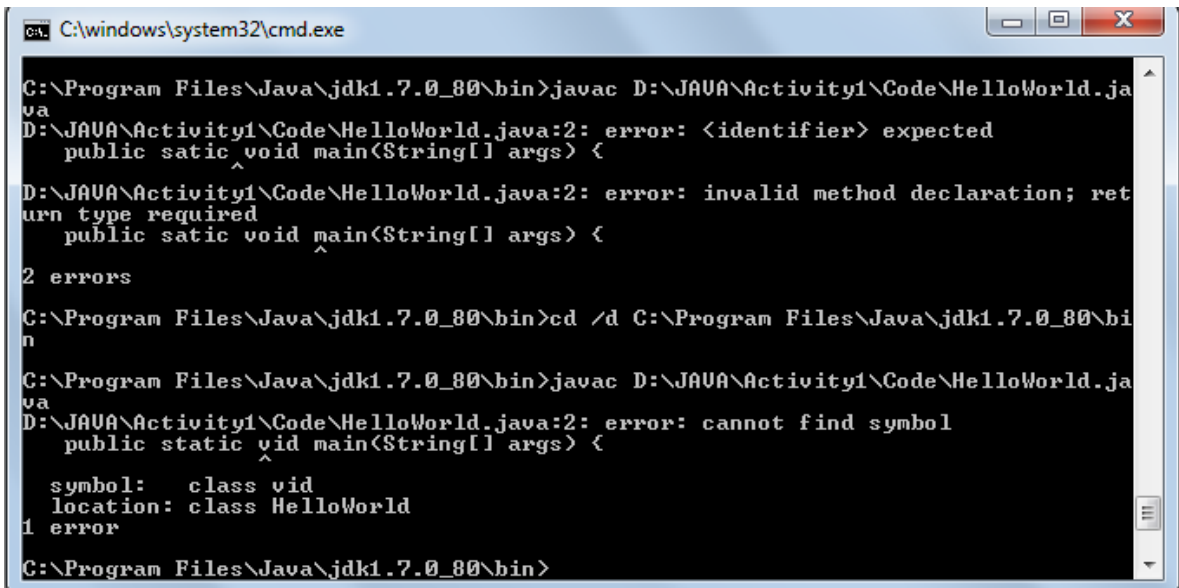
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected
    public static void main(String[] args) {
           ^
1 error

C:\Program Files\Java\jdk1.7.0_80\bin>cd /d C:\Program Files\Java\jdk1.7.0_80\bin

C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected
    public satic void main(String[] args) {
           ^
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: invalid method declaration; return type required
    public satic void main(String[] args) {
           ^
2 errors

C:\Program Files\Java\jdk1.7.0_80\bin>
```

c. void



```
C:\windows\system32\cmd.exe

C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected
    public satic void main(String[] args) {
           ^
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: invalid method declaration; return type required
    public satic void main(String[] args) {
           ^
2 errors

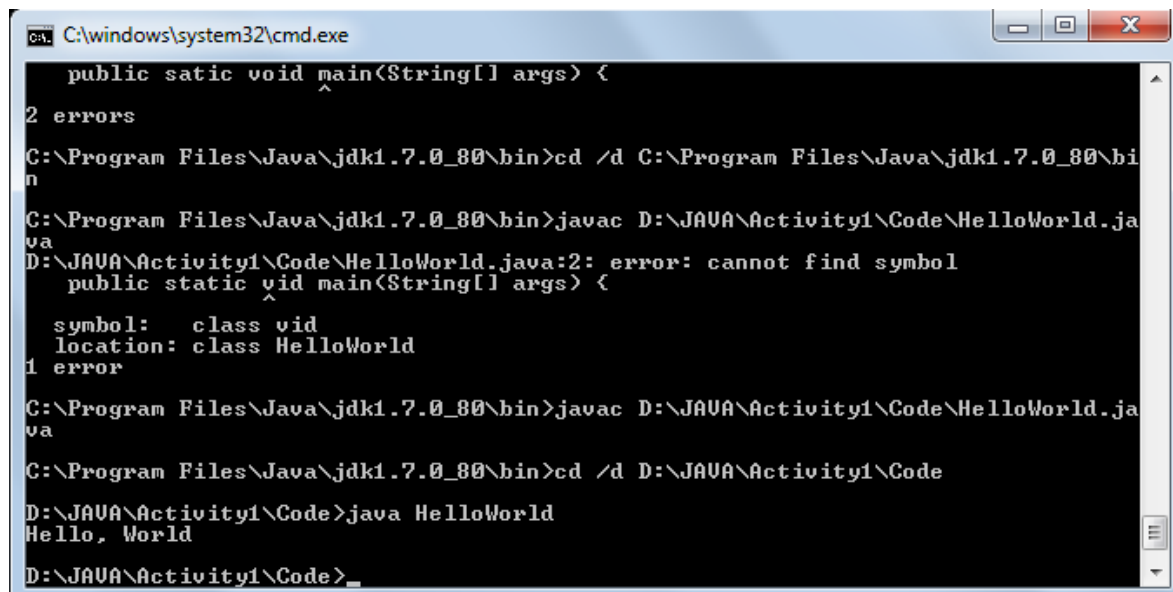
C:\Program Files\Java\jdk1.7.0_80\bin>cd /d C:\Program Files\Java\jdk1.7.0_80\bin

C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVUA\Activity1\Code\HelloWorld.java
D:\JAVUA\Activity1\Code\HelloWorld.java:2: error: cannot find symbol
    public static vid main(String[] args) {
                   ^
    symbol:   class vid
    location: class HelloWorld
1 error

C:\Program Files\Java\jdk1.7.0_80\bin>
```

d. args

The program runs correctly



```
C:\windows\system32\cmd.exe

public static void main(String[] args) {
2 errors
C:\Program Files\Java\jdk1.7.0_80\bin>cd /d C:\Program Files\Java\jdk1.7.0_80\bin
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVA\Activity1\Code\HelloWorld.java
D:\JAVA\Activity1\Code\HelloWorld.java:2: error: cannot find symbol
    public static void main(String[] args) {
                ^
    symbol:   class void
    location: class HelloWorld
1 error
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVA\Activity1\Code\HelloWorld.java
C:\Program Files\Java\jdk1.7.0_80\bin>cd /d D:\JAVA\Activity1\Code
D:\JAVA\Activity1\Code>java HelloWorld
Hello, World
D:\JAVA\Activity1\Code>
```

4. Describe what happens if you try to execute [Hi.java](#) with:

a. `java Hi`

Hi, Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 0 at Hi.main(Hi.java:20)

b. `java Hi @!&^%`

Hi, @!. How are you?

"%" no se reconoce como un comando interno o externo, programa o archivo por lotes ejecutable.

c. `java Hi 1234`

Hi, 1234. How are you?

d. `java Hi.class Bob`

Error: no se ha encontrado o cargado la clase principal Hi.class

e. `java Hi.java Bob`

Error: no se ha encontrado o cargado la clase principal Hi.java

f. `java Hi Alice Bob`


```

C:\windows\system32\cmd.exe
C:\Program Files\Java\jdk1.7.0_80\bin>cd /d D:\JAVA\Activity1\Code
D:\JAVA\Activity1\Code>java UseThree
Hi, Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 2
    at UseThree.main(UseThree.java:20)
D:\JAVA\Activity1\Code>java UseThree Alice Bob Carol
Hi, Carol, Bob, and Alice.
D:\JAVA\Activity1\Code>cd /d C:\Program Files\Java\jdk1.7.0_80\bin
C:\Program Files\Java\jdk1.7.0_80\bin>javac D:\JAVA\Activity1\Code\Initials.java
C:\Program Files\Java\jdk1.7.0_80\bin>cd /d D:\JAVA\Activity1\Code
D:\JAVA\Activity1\Code>java Initials
*****
***          *          *****          ****
***          ***          *****          ****
***          ****          *****          ****
***          ****          *****          ****
***          ****          *****          ****
***          ****          *****          ****
*****          ****          *****          ****
*****          ****          *****          ****
*****          ****          *****          ****
*****          ****          *****          ****
D:\JAVA\Activity1\Code>

```

2. Describe what happens if, in HelloWorld.java, you omit

a. Main

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected

```
public static void (String[] ags) {
```

^

1 error

b. String

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: illegal start of type

```
public static void main([] ags) {
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: ')' expected

```
public static void main([] ags) {
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: ';' expected


```
public static void main([] ags) {
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: illegal start of type

```
public static void main([] ags) {
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: <identifier> expected

```
public static void main([] ags) {
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: ';' expected

```
public static void main([] ags) {
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: illegal start of type

```
System.out.println("Hello, World");
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: ';' expected

```
System.out.println("Hello, World");
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: invalid method declaration; ret

urn type required

```
System.out.println("Hello, World");
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: illegal start of type

```
System.out.println("Hello, World");
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:5: error: class, interface, or enum expected

```
}
```

^

11 errors

c. HelloWorld

D:\JAVA\Activity1\Code\HelloWorld.java:1: error: <identifier> expected

```
public class {
```

^

1 error

d. System.out

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: illegal start of expression

```
.println("Hello, World");
```

^

1 error

e. Println

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: <identifier> expected

```
System.out.("Hello, World");
```

^

1 error

3. Describe what happens if, in `HelloWorld.java`, you omit

a. the `;`

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: ';' expected

```
System.out.println("Hello, World")
```

^

1 error

b. the first `"`

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: unclosed string literal

```
System.out.println(Hello, World");
```

^

1 error

c. the second `"`

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: unclosed string literal

```
System.out.println("Hello, World);
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: ';' expected

```
System.out.println("Hello, World);
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:5: error: reached end of file while parsing

```
}
```

^

3 errors

d. the first `{`

D:\JAVA\Activity1\Code\HelloWorld.java:1: error: '{' expected

```
public class HelloWorld
```

^

1 error

e. the second `{`

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: ';' expected

```
public static void main(String[] args)
```

^

D:\JAVA\Activity1\Code\HelloWorld.java:5: error: class, interface, or enum expected

```
}
```

^

2 errors

f. the first }

D:\JAVA\Activity1\Code\HelloWorld.java:5: error: reached end of file while parsing

```
}
```

```
^
```

1 error

g. the second }

D:\JAVA\Activity1\Code\HelloWorld.java:4: error: reached end of file while parsing

```
ng
```

```
}
```

```
^
```

1 error

4. Describe what happens if, in `HelloWorld.java`, you misspell (by, say, omitting the second letter)

a. Main

D:\JAVA\Activity1\Code>java HelloWorld

Error: no se ha encontrado el metodo principal en la clase HelloWorld, defina el metodo principal del siguiente modo:

```
public static void main(String[] args)
```

b. String

D:\JAVA\Activity1\Code\HelloWorld.java:2: error: cannot find symbol

```
public static void main(Sring[] ags) {
```

```
^
```

symbol: class Sring

location: class HelloWorld

1 error

c. HelloWorld

D:\JAVA\Activity1\Code\HelloWorld.java:1: error: class HlloWorld is public, should be declared in a file named HlloWorld.java

```
public class HlloWorld {
```

```
^
```

1 error

d. System.out

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: package Sstem does not exist

```
Sstem.out.println("Hello, World");
```

```
^
```

1 error

e. `Println`

D:\JAVA\Activity1\Code\HelloWorld.java:3: error: cannot find symbol

`System.out.println("Hello, World");`

^

symbol: method `println(String)`

location: variable out of type `PrintStream`

1 error

5. I typed in the following program. It compiles fine, but when I execute it, I get the error `java.lang.NoSuchMethodError: main`. What am I doing wrong?