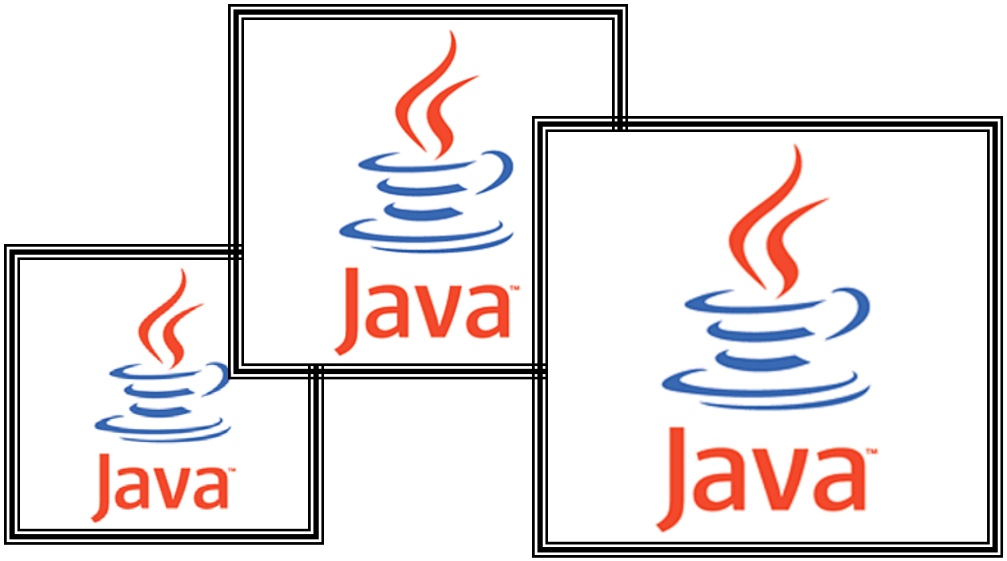
IT2205: Programming I

Section 2

Interacting with Java Programming environment (2 hrs)

Section 2.1

Installing and setting the Java environment in one's computer



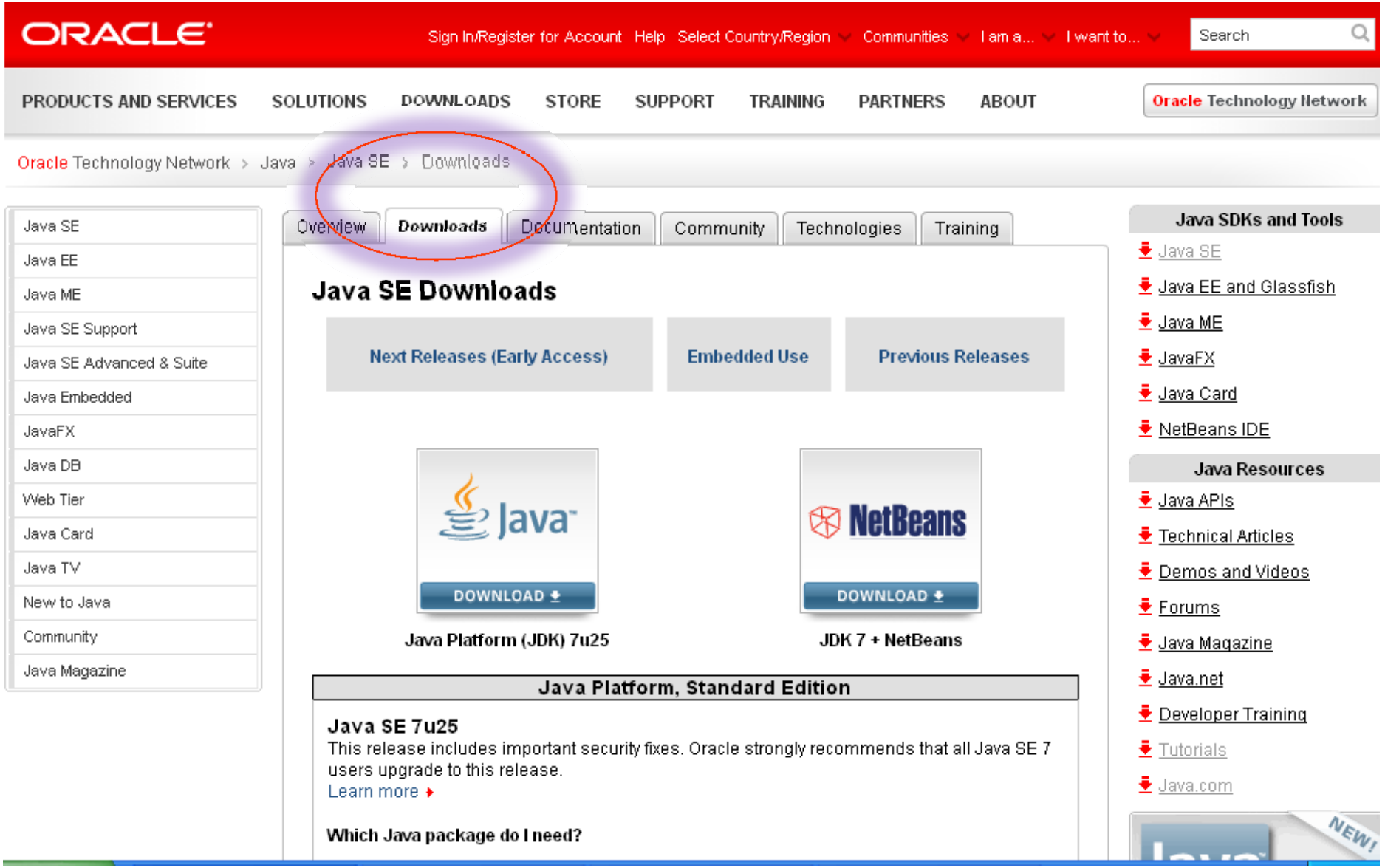
How to Install Java

- **What is installing of a software?**
  - Putting the Java software in your computer

- **Why need Java to get installed?**
  - **As soon as an operating system is installed Java doesn't get installed in a computer**
  - **In order to execute the program written in Java**

How to get Java software

- **From a trusted source or someone**
- **From Java official website**
  - **http://java.sun.com/j2se**
- **Consider your operating system**
  - Windows
  - Linux
  - Solaris
  - Mac OS



Window's operating system

- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

JDK MD5 Checksum

Java SE Development Kit 7u25

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64 bits ???

What is the word size of a computer?

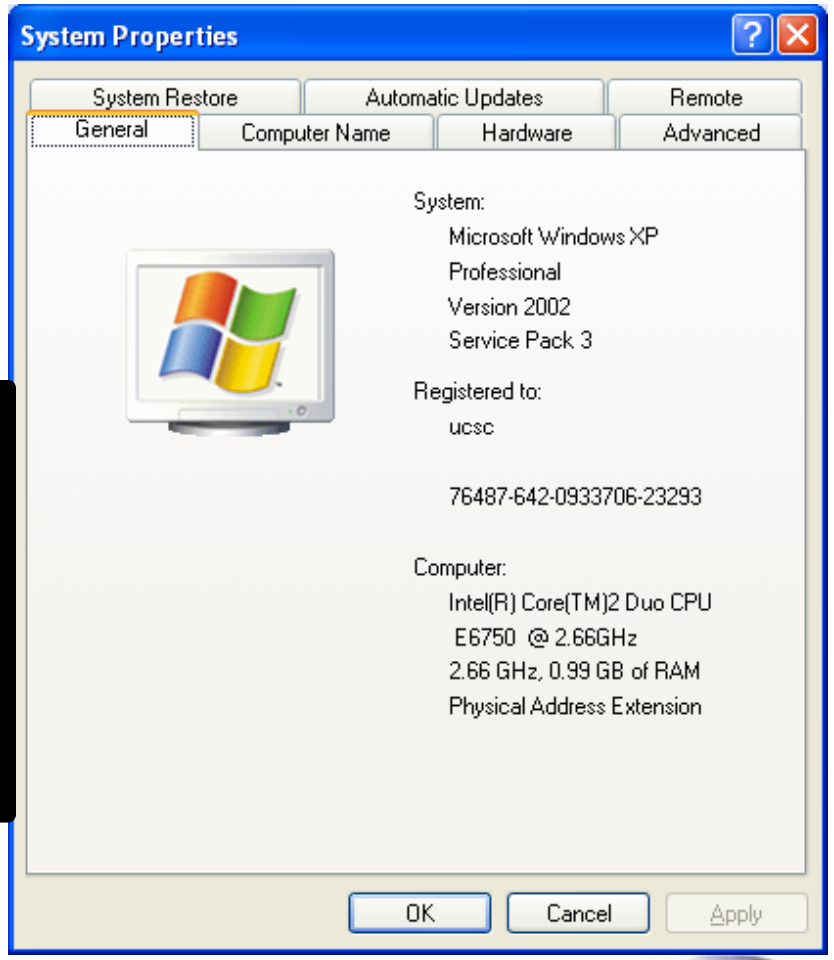
➢ Answer:

- **word size definition-The number of bits that a CPU can process at one time. Processors with many different word sizes have existed though powers of two (8, 16, 32, 64) have predominated for many years. A processor's word size is often equal to the width of its external data bus though sometimes the bus is made narrower than the CPU to economise on packaging and circuit board costs.**

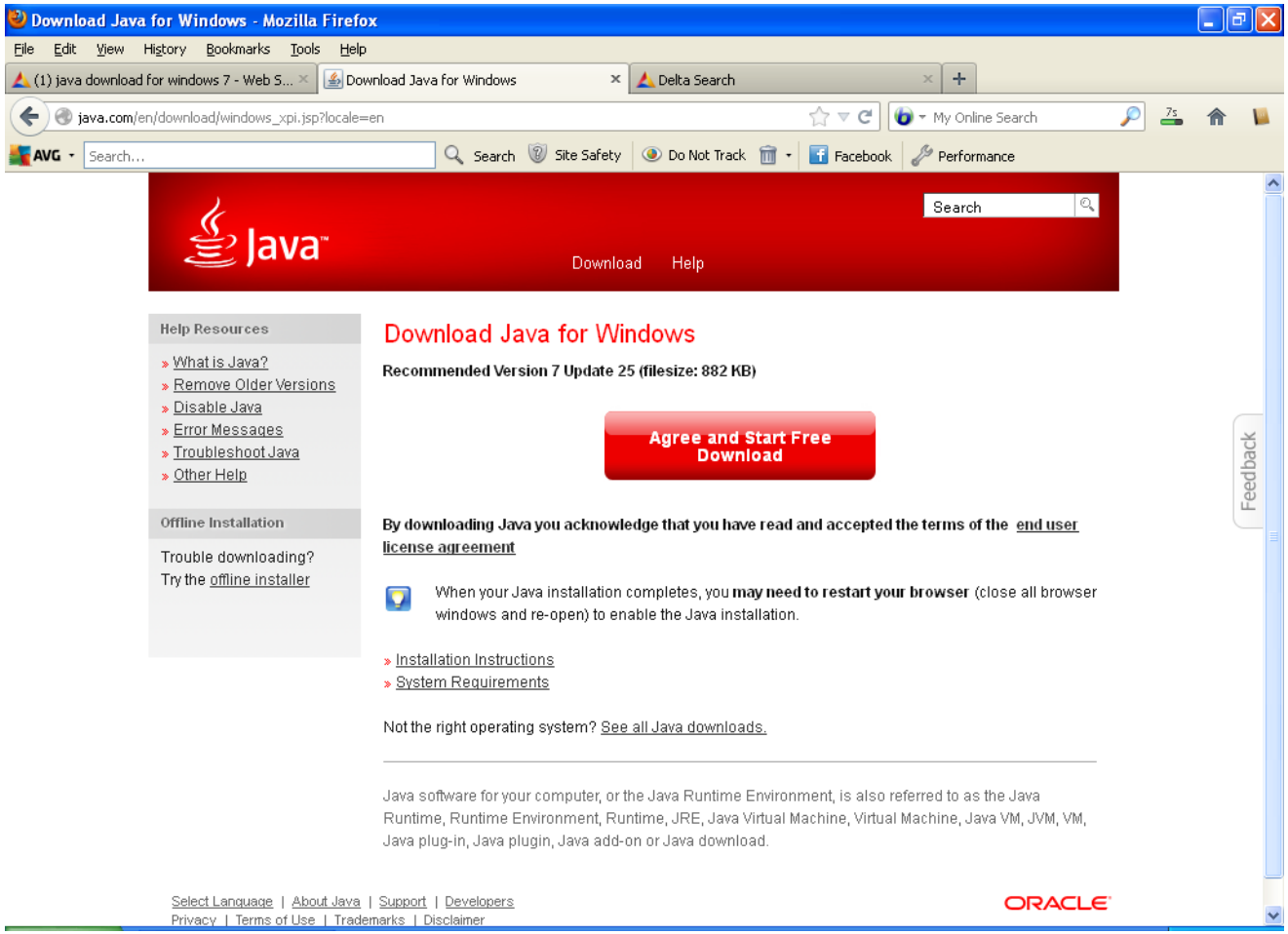
How to check the word size of your computer(Windows)?

Select My computer → right click → select properties

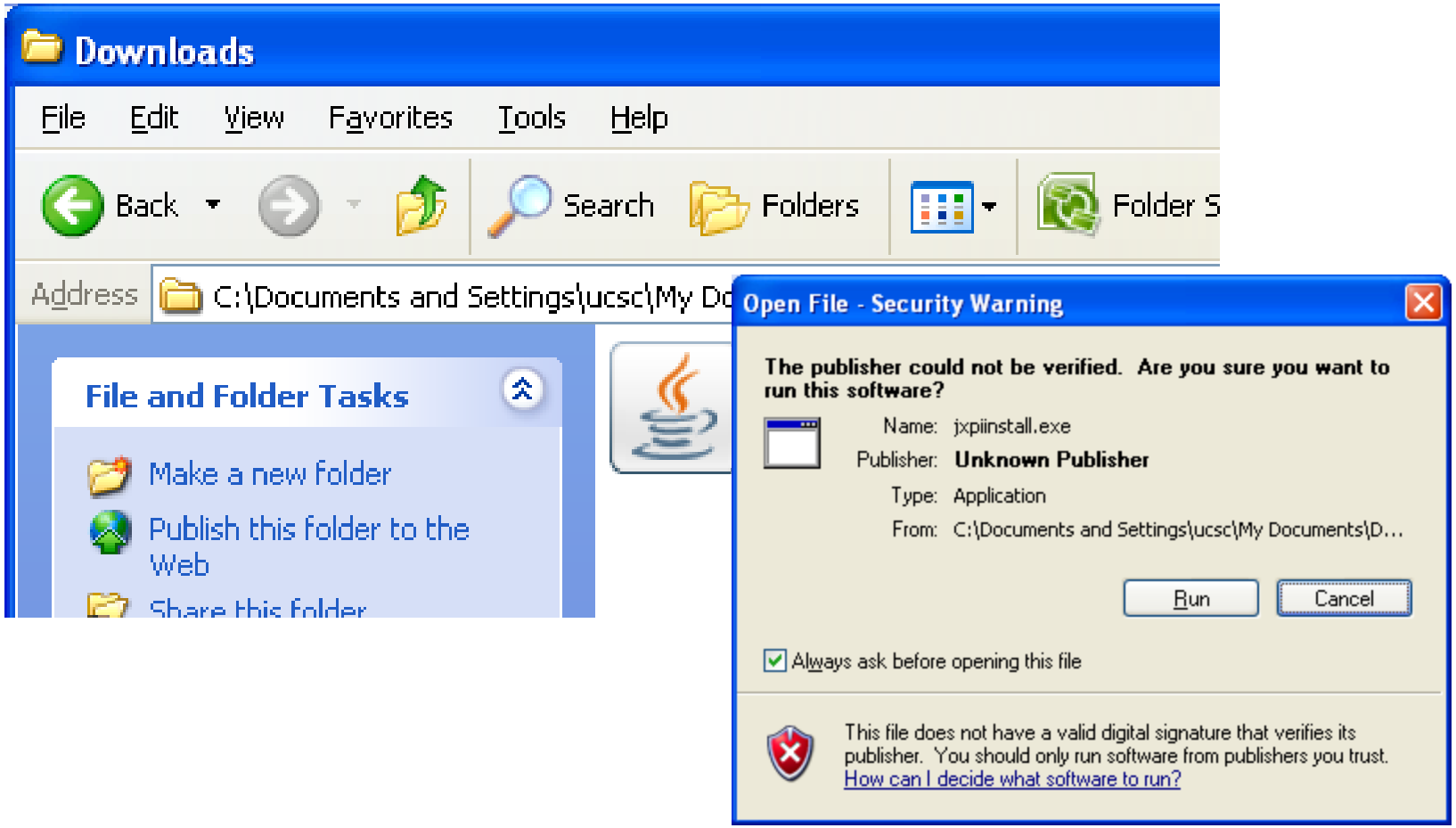
Microsoft Windows XP Professional Version [year] means you're running Windows XP 32-bit.
Microsoft Windows XP Professional x64 Edition Version [year] means you're running Windows XP 64-bit.



Download Java



Download Folder in your windows computer



What Java gets installed?

- Java 2 Platform is now installed
  - Java Virtual Environment (JVM)/ Java Run Time
    - A software implementation of a hypothetical computer(a computer within a computer)
  - Java Application Programming Interface (Java API)
    - A set of software components which facilitate to write your programs.

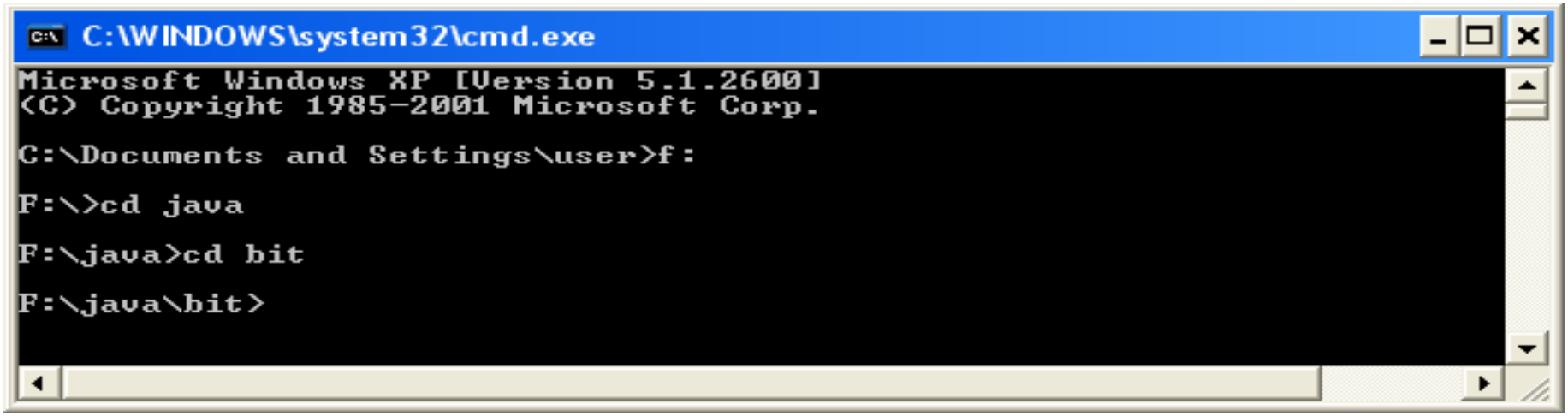
How to check whether Java has got installed?

- Go to the command prompt – how?
  - Start → All programs → Accessories → command prompt
  - Start → run (type cmd)

How to check whether Java has got installed? Cont…

- Switch to your working folder

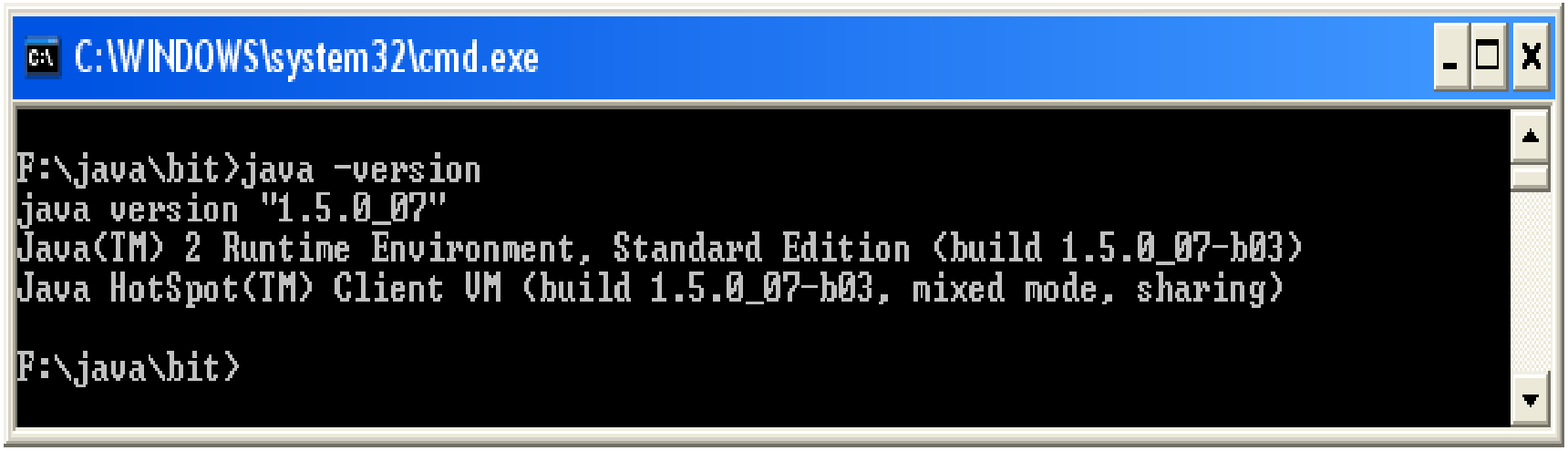
eg:f:\java\bit



How to check whether Java has got installed? Cont…

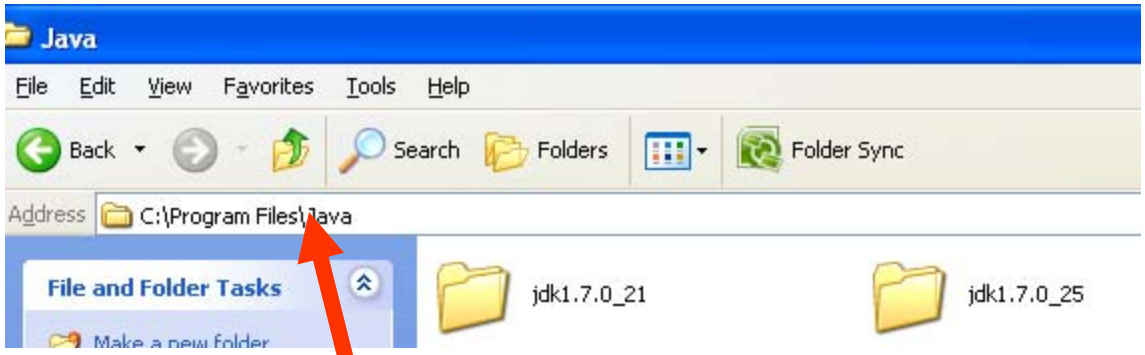
- In the command prompt check the Java Version

  java -version



How to check whether Java has got installed? Cont…

- If you cannot see the version?- the reason



Java software

Our working folder

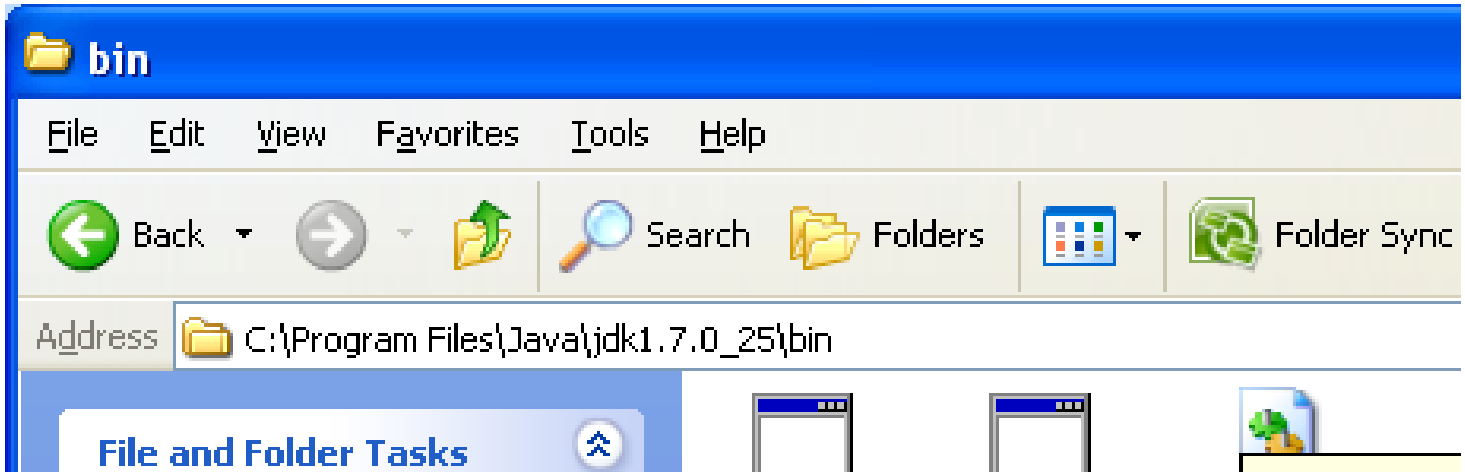
f:\java\bit

How to check whether Java has got installed? Cont…

- If you cannot see the Java version? – the solution
  - Set environment variables in your computer – two alternatives (path)
    - Temporarily
    - Permanently

How to check whether Java has got installed? Cont…

- If you cannot see the Java version? – the solution
  - Locating the path of the Java software



How to check whether Java has got installed? Cont…

- If you cannot see the Java version? – the solution
  - Setting the environment variables in your computer temporarily

F:\java\bit>set path=c:\program files\java\jdk1.5.0_07\bin;%path%

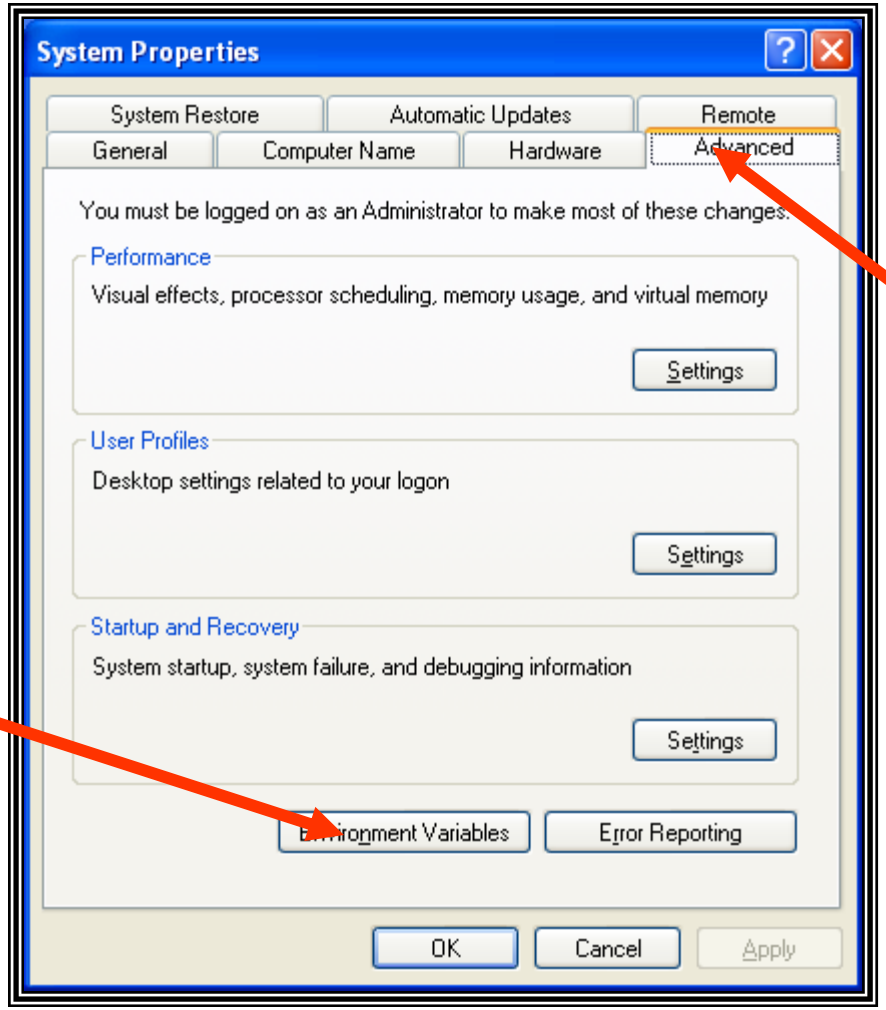
How to check whether Java has got installed? Cont…

- If you cannot see the Java version? – the solution
  - Setting the environment variables in your computer permanently

My computer Icon

Setting the environment variables in your computer permanently?

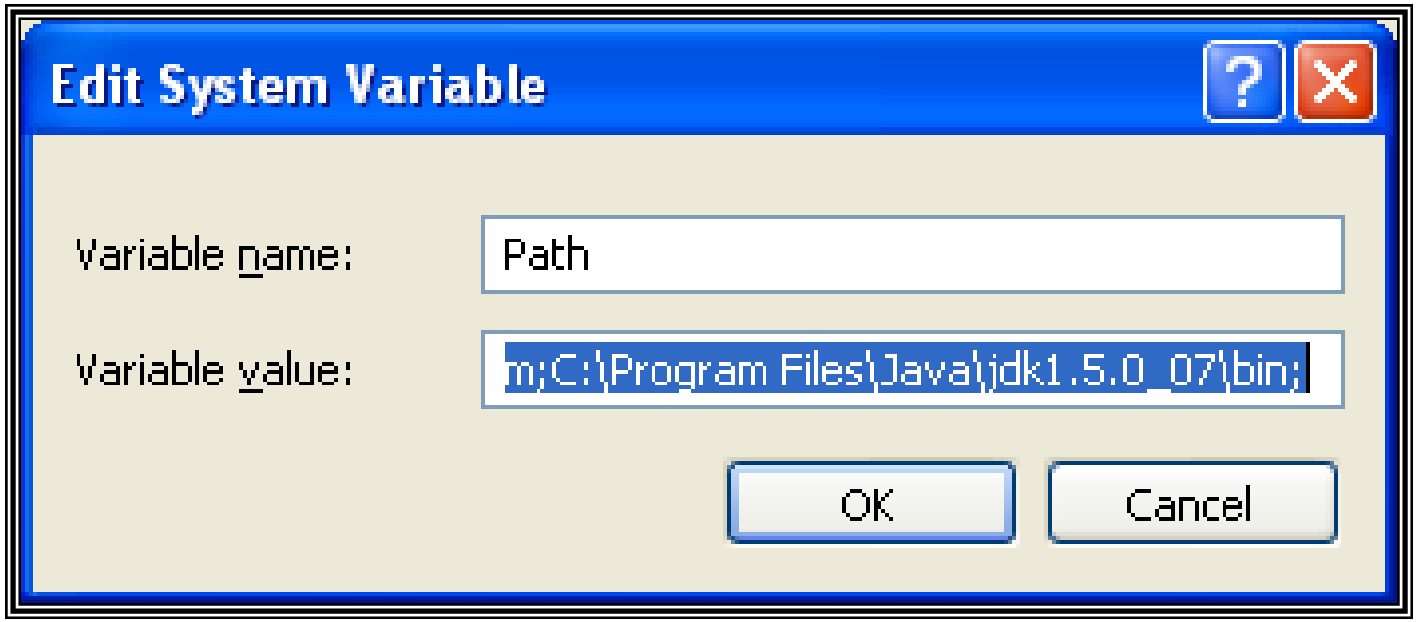
Setting the environment variables in your computer permanently? Cont…



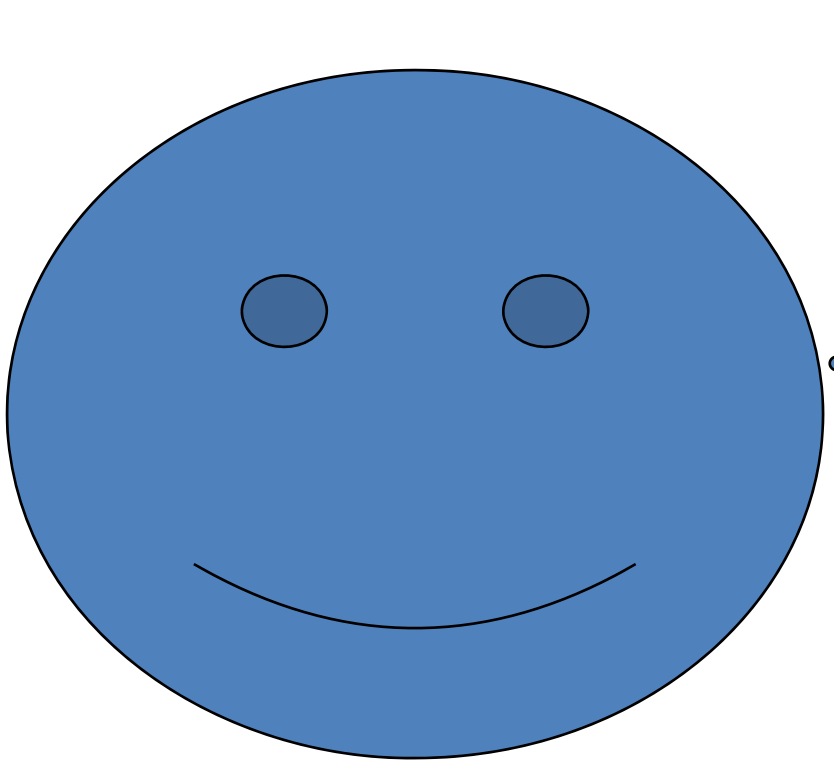
Advanced Tab

Environment Variables

Setting the environment variables in your computer permanently? Cont…



Shall We Write a Java Program as a beginner?



When your kindergarten era did you think to much when this picture was drawn ?

Shall We Write a Java Program as a beginner? Cont…

Say 

in

Java…..?

A simple Java Console Program to say *Hello*

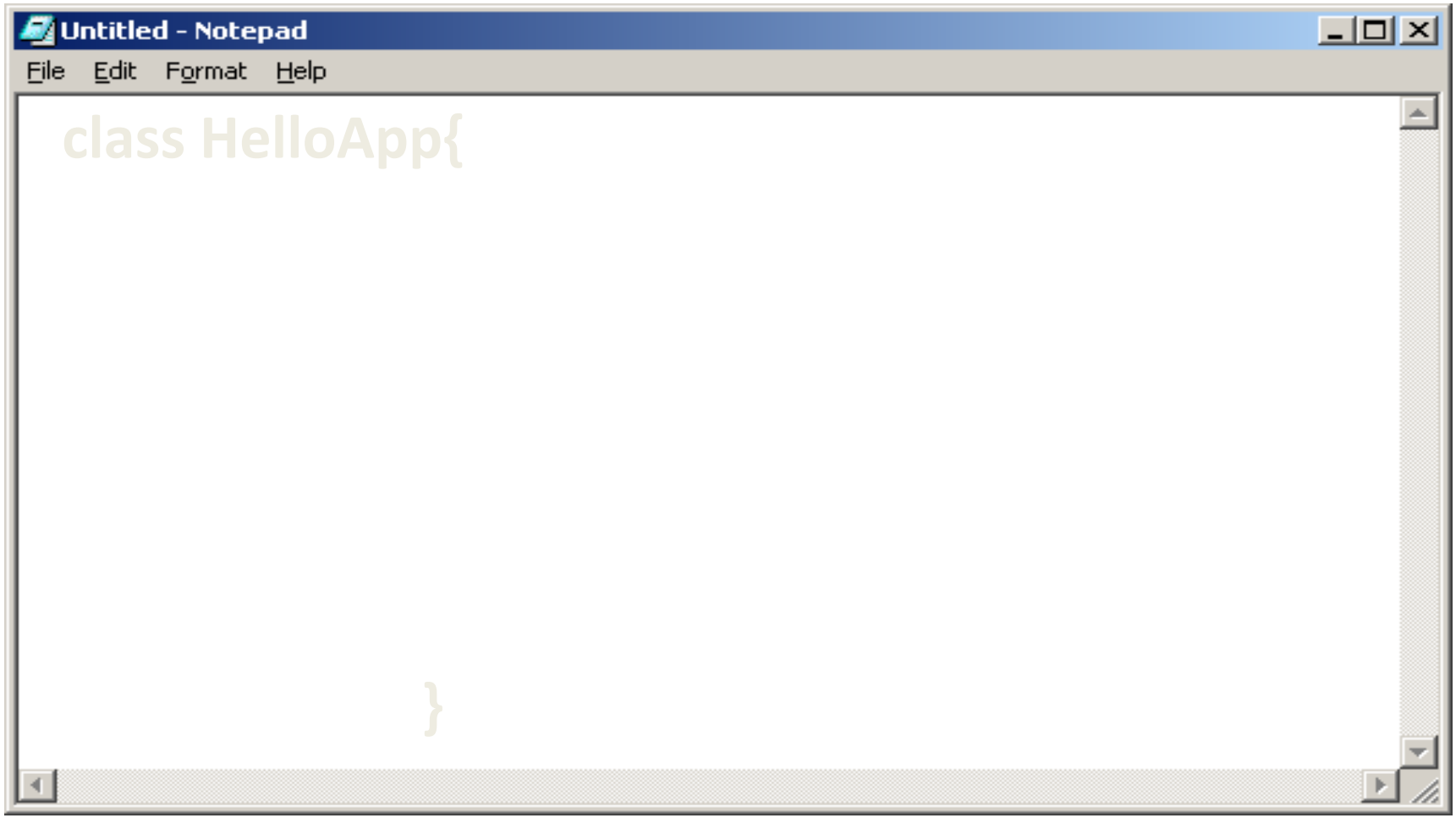
- **Steps**
  - Enter the program using an editor
  - Save the file
  - Compile the file
  - Run or interpret

A simple Java Console Program to say *Hello* Cont…

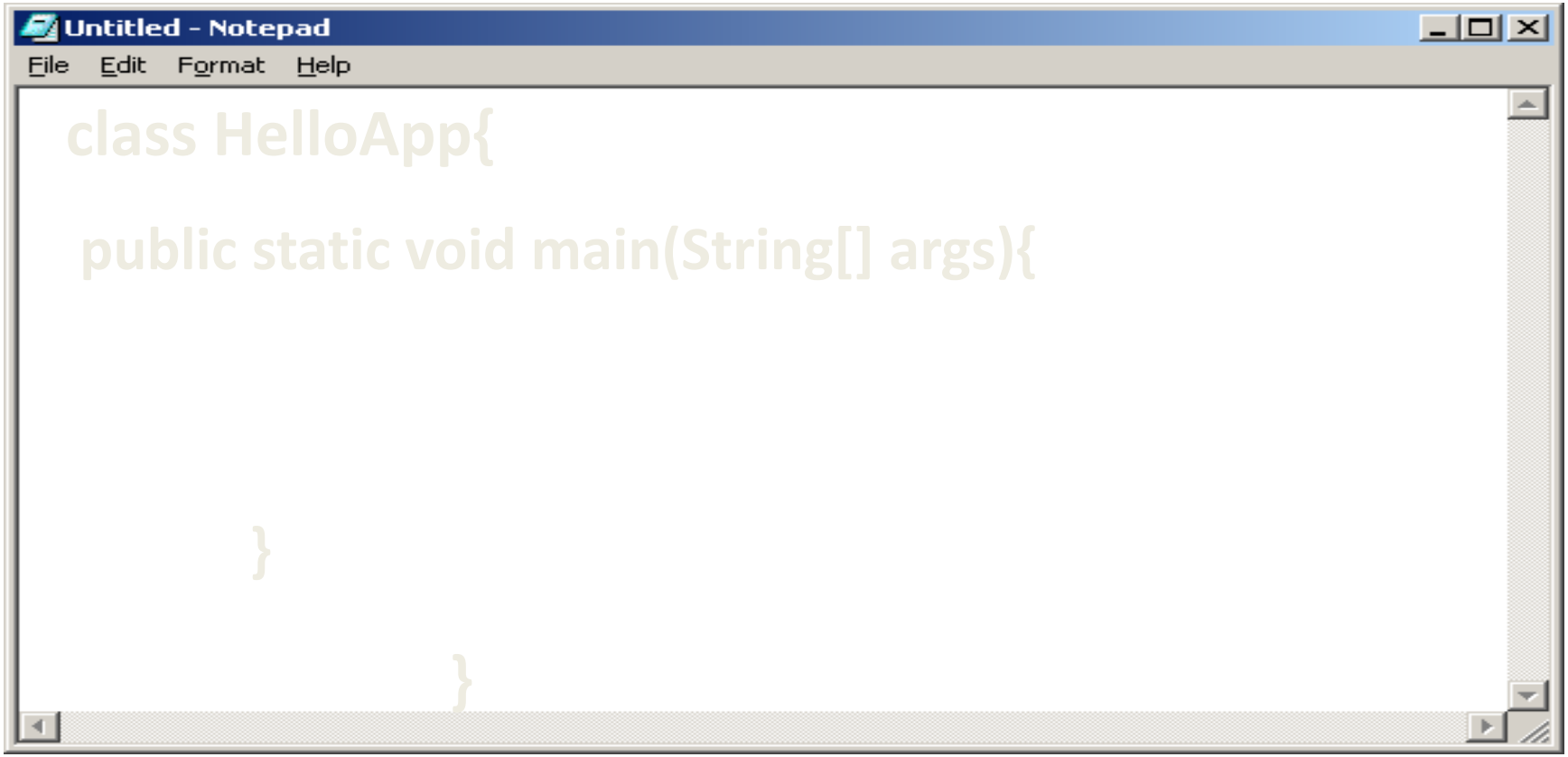
- **Steps**
  - Enter the Java program using an editor
    - Notepad
    - MS word
    - Linux

Ability to save the content in plain text

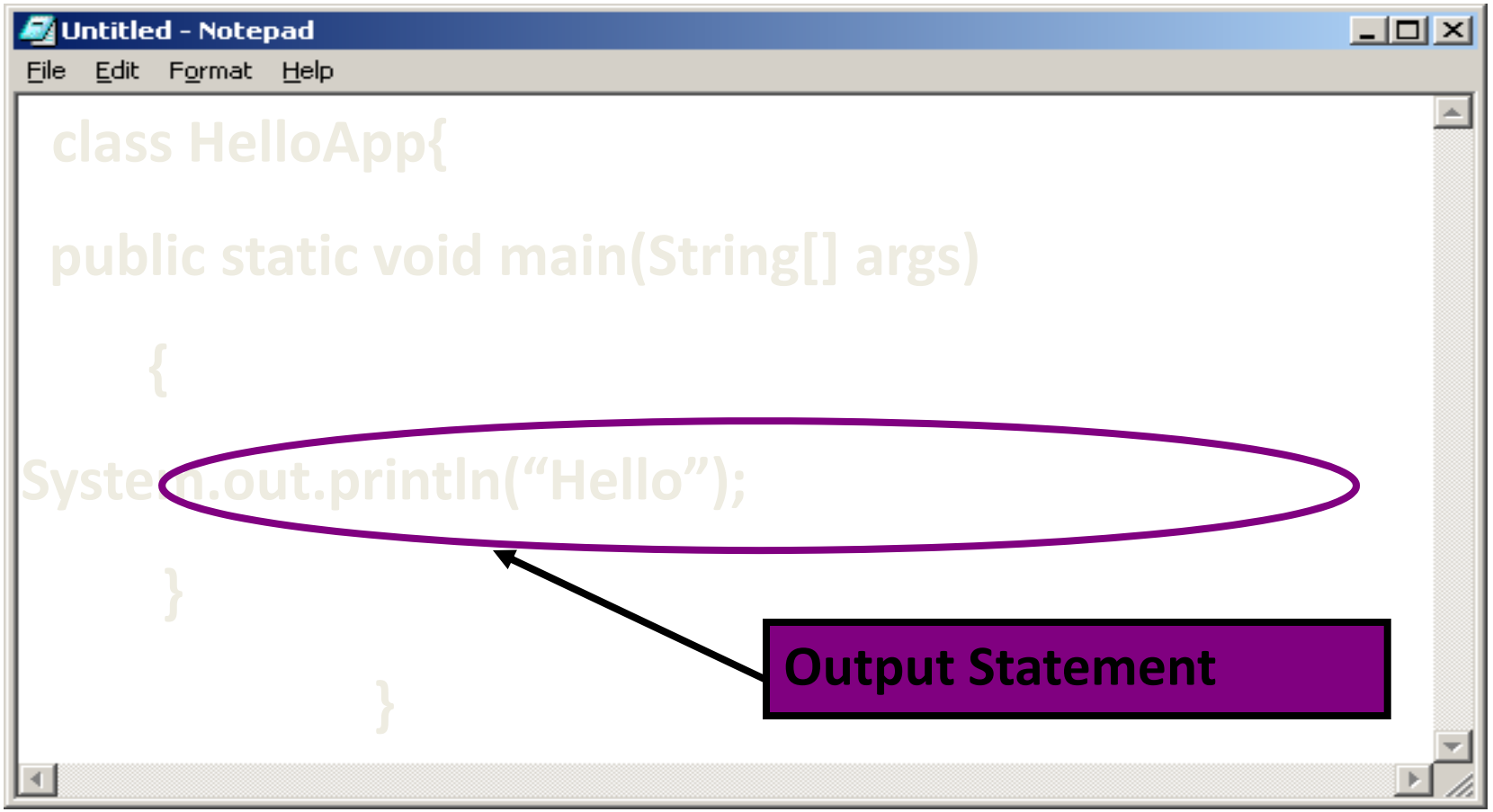
Enter the file giving a Class name



Include the main() method



Enter Output Statement



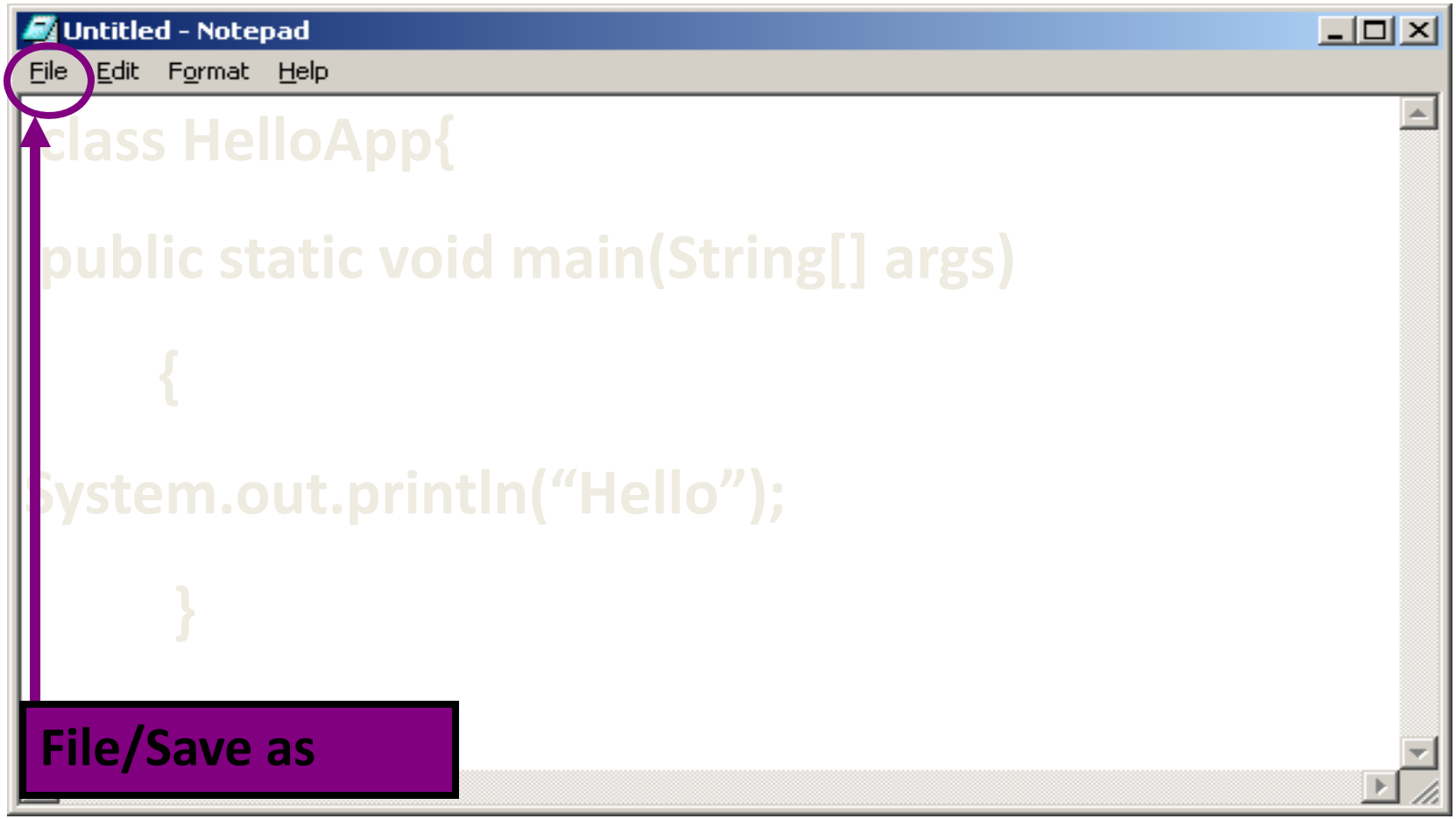
Save the file

giving class name as the file name

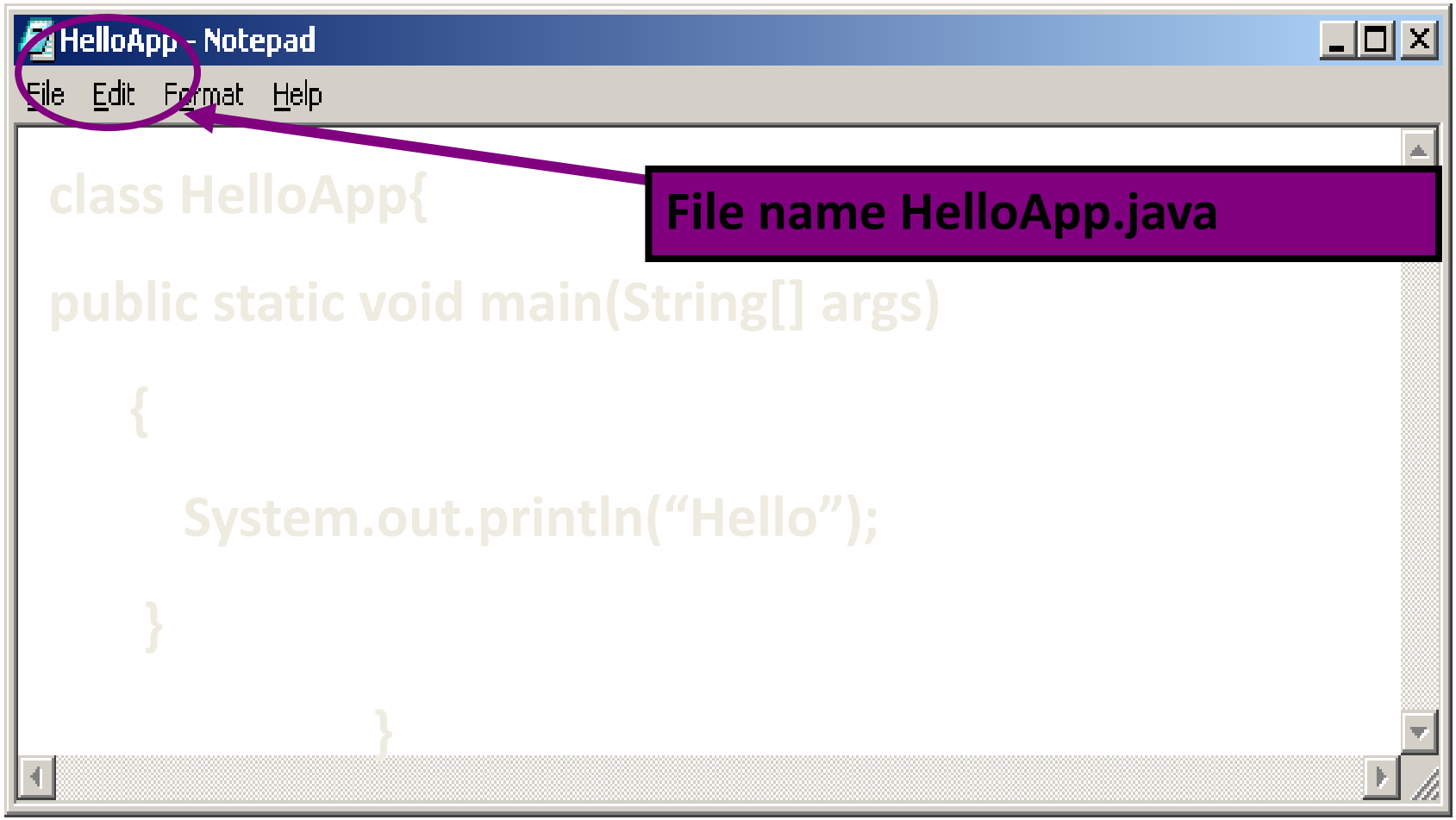
with .java file extension

HelloApp.java

Save the File as *HelloApp.java*



After Saving



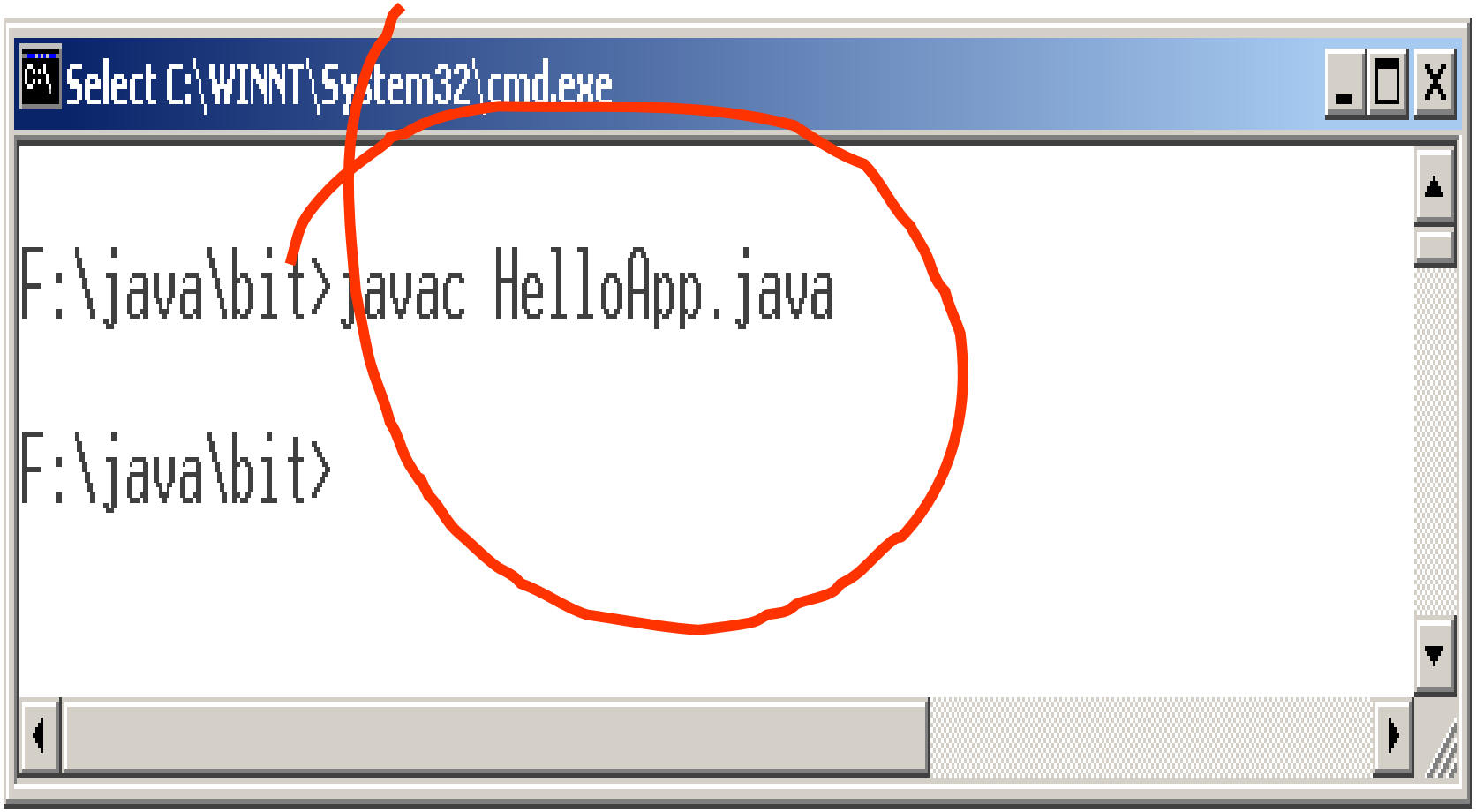
How to Compile and Run

Compile the java program

javac HelloApp.java

Java compiler

How to Compile and Run Cont…



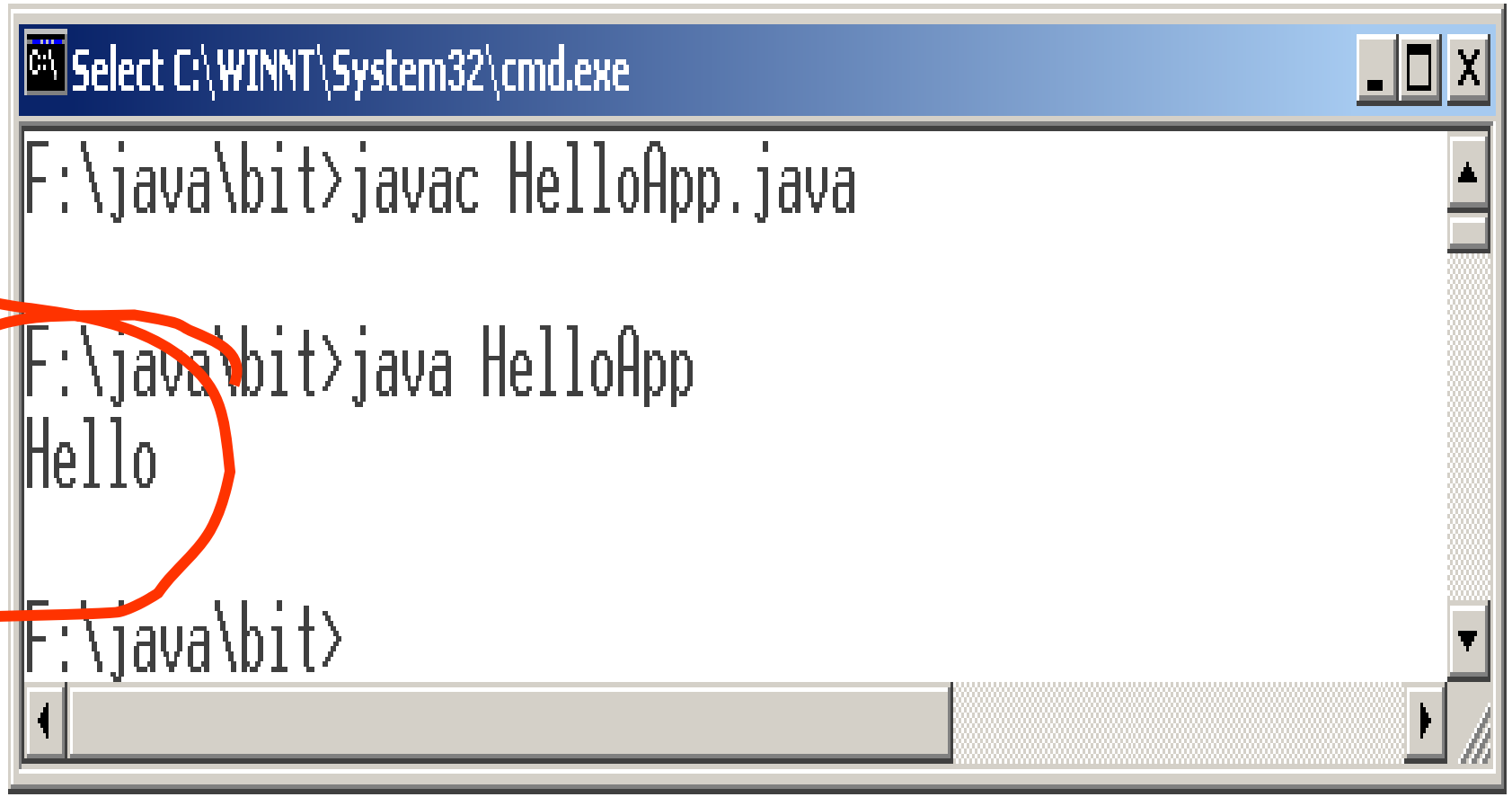
How to Compile and Run Cont…

Run the program

java HelloApp

Java interpret or

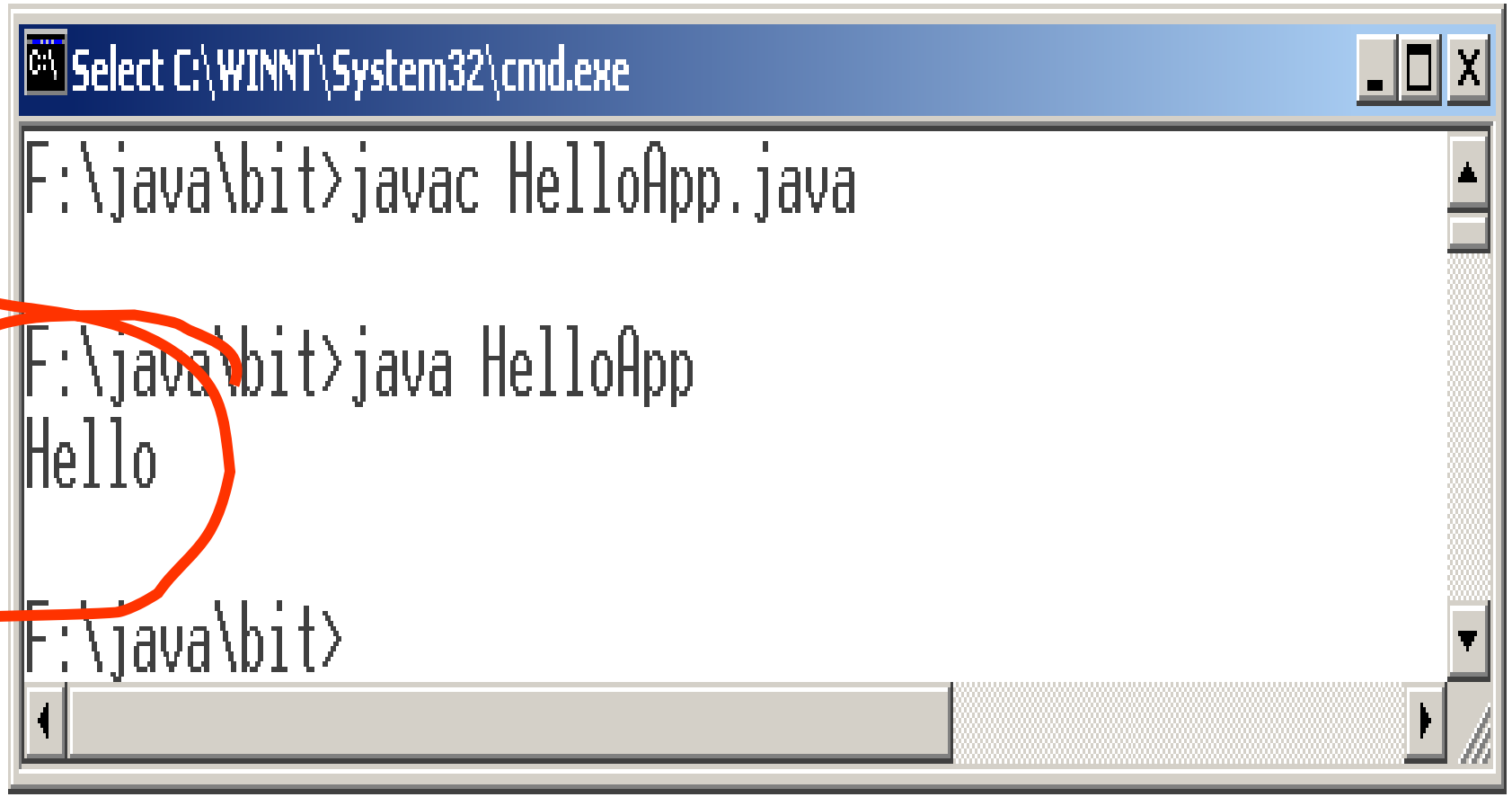
How to Compile and Run Cont…



How to Compile and Run Cont…

It says hello…!!!

How to Compile and Run Cont…



Linux Operating System

How do you get the software

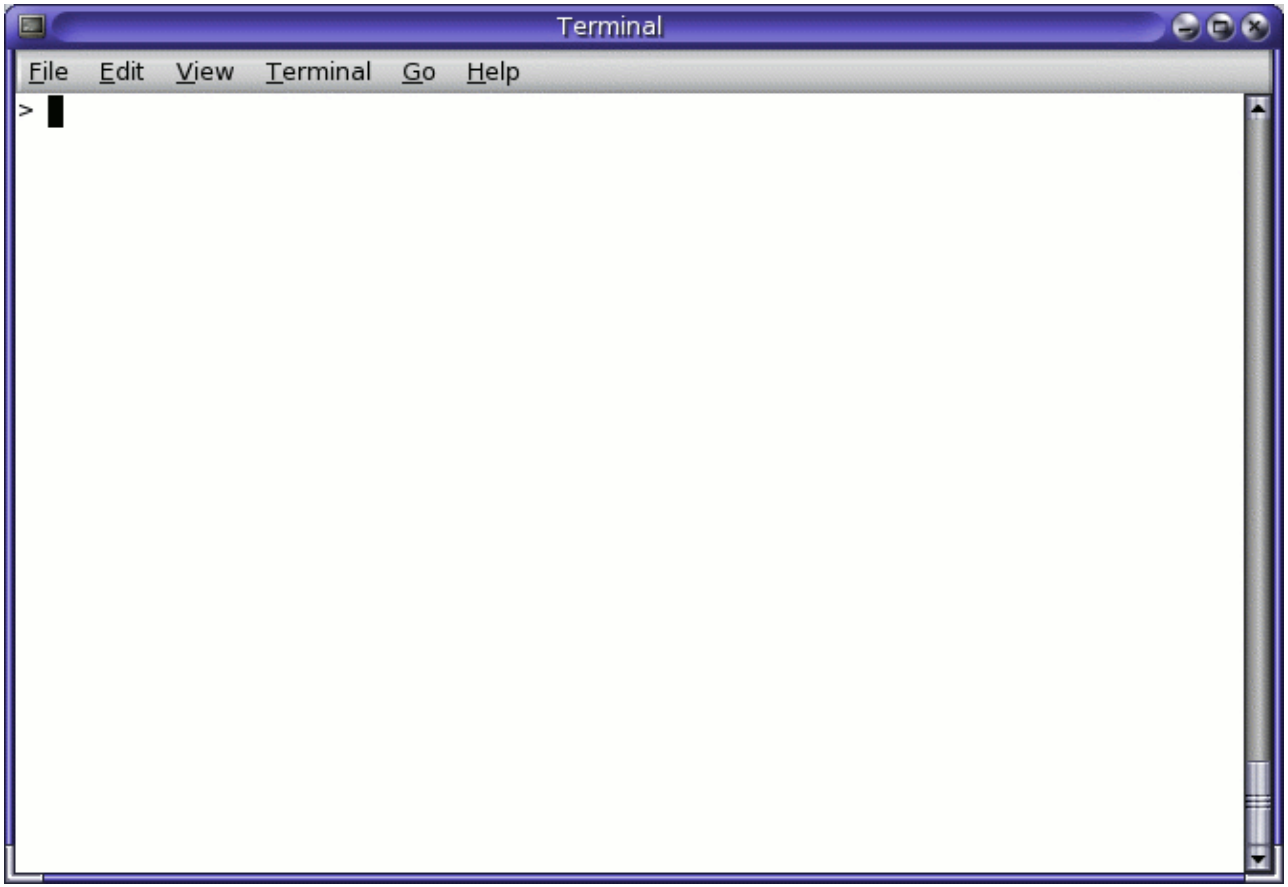
- To write your first program, you'll need:
  - **The Java SE Development Kit 6 (JDK 6)**
    - You can download the Solaris OS or Linux version and make sure you download the **JDK**, *not* the JRE
  - **A text editor**
    - In this example, we'll use Pico, an editor available for many UNIX-based platforms. You can easily adapt these instructions if you use a different text editor, such as vi or emacs.

Creating Your First Application

- Your first application, HelloWorldApp, will simply display the greeting "Hello world!". To create this program, you will:
  - **Create a source file**
  - **Compile the source file into a .class file**
  - **Run the program**

Create a source file

- First, open a shell, or "terminal," window.



Create a source file Cont…

- When you first bring up the prompt, your *current directory* will usually be your *home directory*. You can change your current directory to your home directory at any time by typing cd at the prompt and then pressing **Return.**
- The source files you create should be kept in a separate directory. You can create a directory by using the command mkdir.

Create a source file Cont…

- For example, to create the directory java in your home directory, use the following commands:

  cdmkdir java

- To change your current directory to this new directory, you then enter:

  cd java

- Now you can start creating your source file.

- Start the Pico editor by typing pico at the prompt and pressing **Return**. If the system responds with the message pico: command not found, then Pico is most likely unavailable. Consult your system administrator for more information, or use another editor.

Create a source file Cont…

- When you start Pico, it'll display a new, blank *buffer*. This is the area in which you will type your code.

- Type the following code into the new buffer:

```
/** * The HelloWorldApp class implements an application that * simply prints "Hello World!" to standard output. */
class HelloWorldApp {
public static void main(String[] args) {
System.out.println("Hello World!");
// Display the string.    }}
```

Create a source file Cont…

- Save the code in a file with the name HelloWorldApp.java
- In the Pico editor, you do this by typing **Ctrl-O** and then, at the bottom where you see the prompt File Name to write:, entering the directory in which you wish to create the file, followed by HelloWorldApp.java.
- For example, if you wish to save HelloWorldApp.java in the directory /home/jdoe/java, then you type /home/jdoe/java/HelloWorldApp.java and press **Return**.
- You can type **Ctrl-X** to exit Pico.

Compile the Source File into a .class File

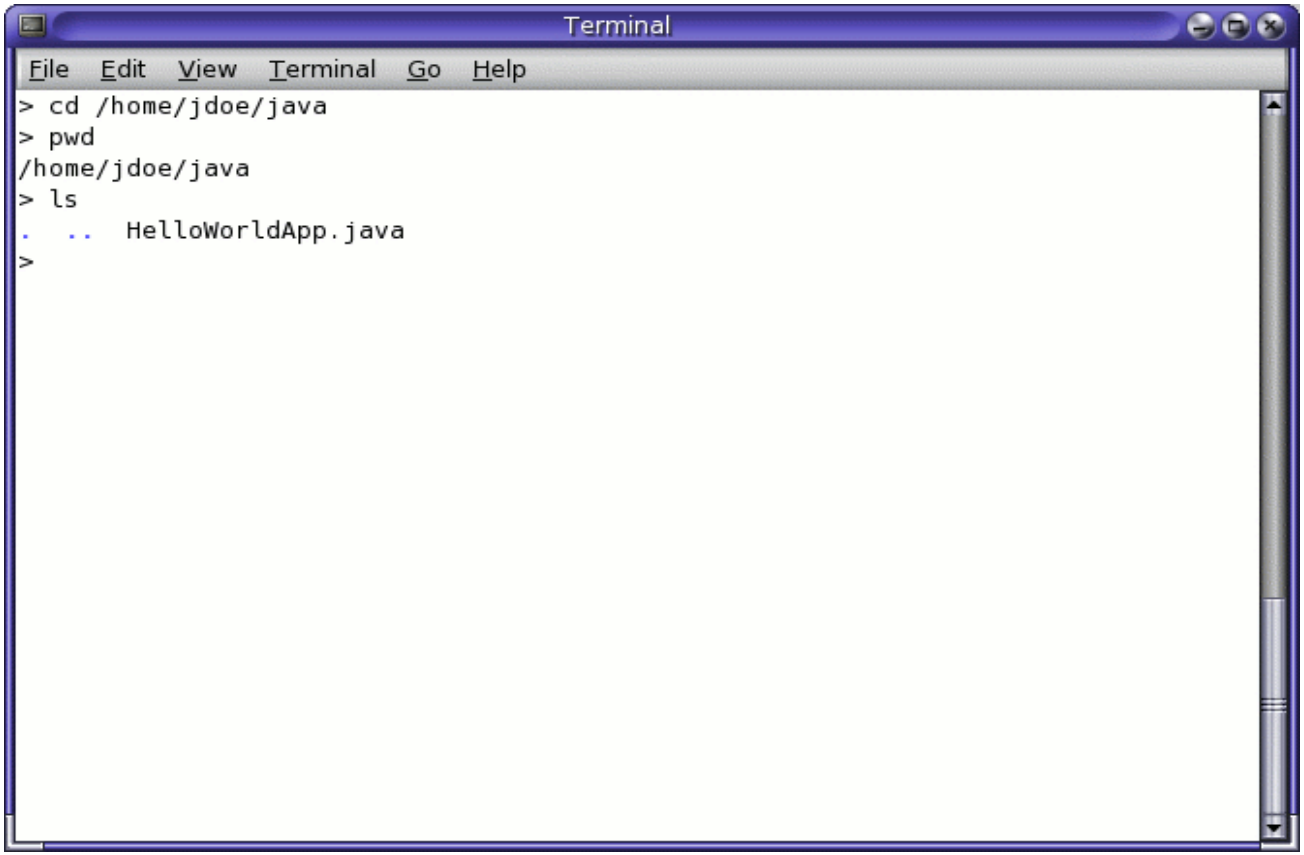
- Bring up another shell window. To compile your source file, change your current directory to the directory where your file is located. For example, if your source directory is /home/jdoe/java, type the following command at the prompt and press **Return**:

  cd /home/jdoe/java

- If you enter pwd at the prompt, you should see the current directory, which in this example has been changed to /home/jdoe/java.

Compile the Source File into a .class File Cont…

- If you enter ls at the prompt, you should see your file.



Compile the Source File into a .class File Cont…

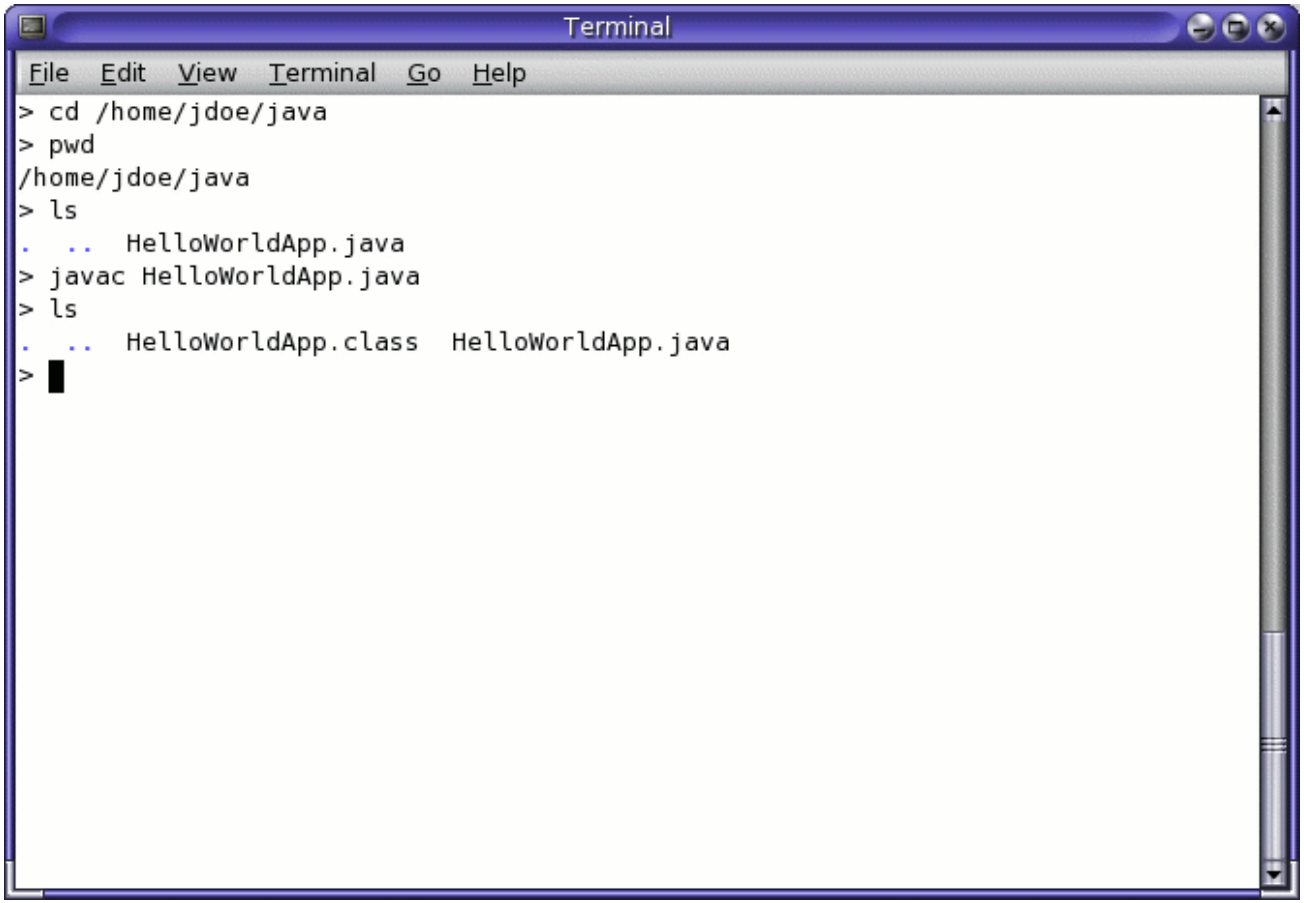
- Now are ready to compile the source file. At the prompt, type the following command and press **Return**.

```
javac HelloWorldApp.java
```

- The compiler has generated a bytecode file, HelloWorldApp.class.

Compile the Source File into a .class File Cont…

- At the prompt, type ls to see the new file that was generated: the following figure.

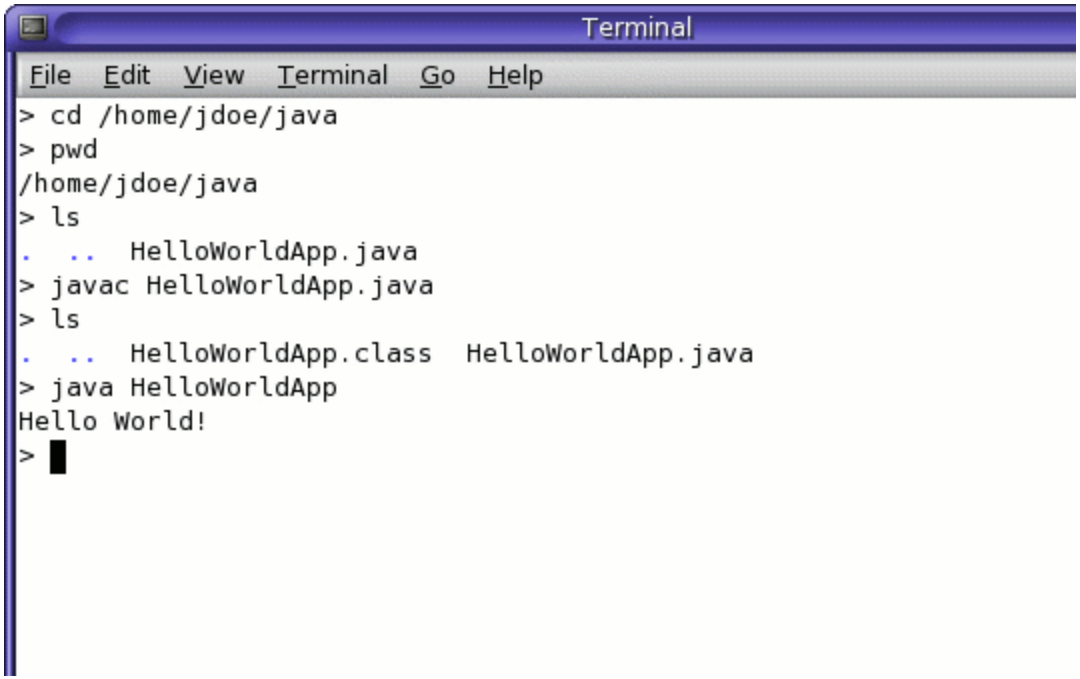


Run the Program

- In the same directory, enter at the prompt:

  java HelloWorldApp

- The following figure shows what you should now see.



The End