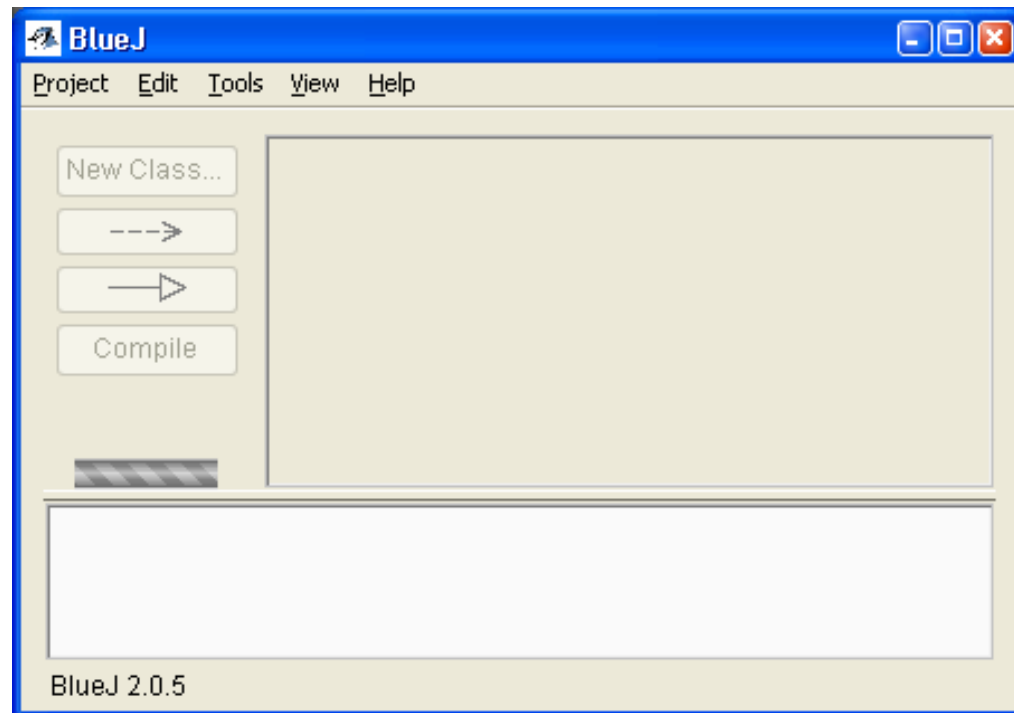


Java applets & the BlueJ IDE


- Java applets must be
 - Prepared as *source text* in the Java language
 - Then *compiled (translated)* into runnable form
 - Then run or viewed by a WWW browser (or an appletviewer)
- To do this we will use the BlueJ IDE
- IDE stands for “integrated development environment”
- The IDE helps to manage the process of
 - Preparing the program (applet)
 - Translating the program so it can be run
 - Running/viewing the program
- BlueJ organizes your work into *projects*
 - A project is all the files for a particular program
 - All in one folder

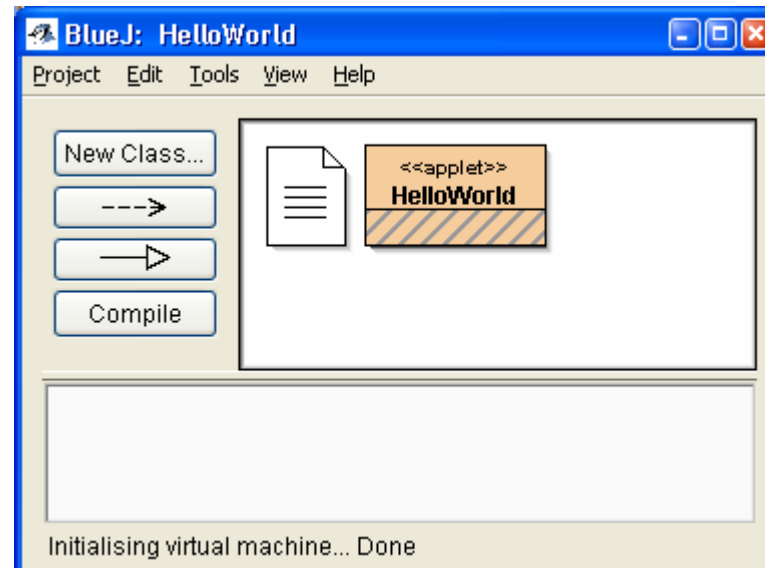
Starting the BlueJ IDE

- Always launch BlueJ from the Start menu:
Start / Programs / BlueJ / BlueJ
- The BlueJ window will appear, with a menu bar across the top:
- It may open a previous project immediately -
If so we can select *Project menu/Close*



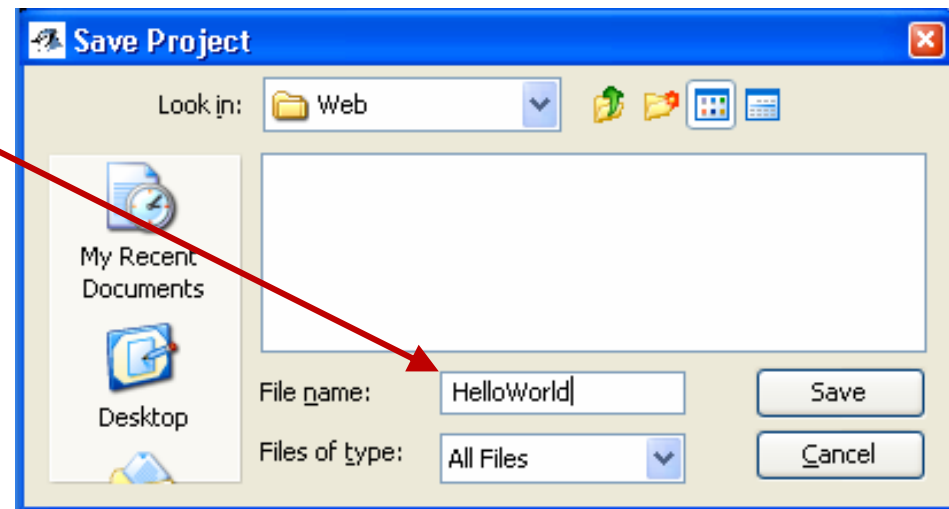
Creating a simple project

- The easiest way to start is to ask BlueJ to take a copy of an already existing project. For example...
- Select BlueJ's **Project menu/Open Project** - a file chooser dialogue box will pop up
- In the usual way navigate to **My Computer / Groups on Wide (V:) / CSC941 / Java**
- Click ONCE on the folder **HelloWorld** (it might have a strange "package" icon  HelloWorld)
- Click **Open**
- BlueJ will open and display the contents of the project:



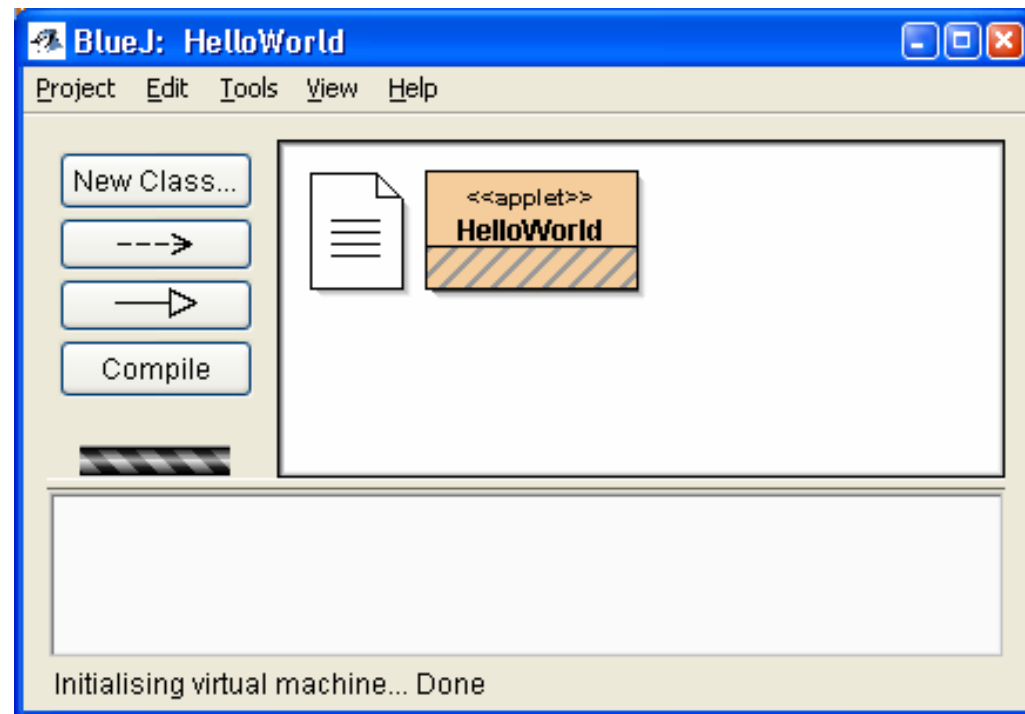
Saving a new copy of the project

- Select BlueJ's **Project menu/Save As...**
- You will see a dialogue box which will allow you to
 - Find a *location* for your project
 - Choose a *name* for a new folder for the project
- Navigate to an appropriate location in the usual way:
 - Navigate to a suitable folder in your file store, here your **Web** folder
 - Type **HelloWorld** in the File name box as a new project folder name
- Click "Save"



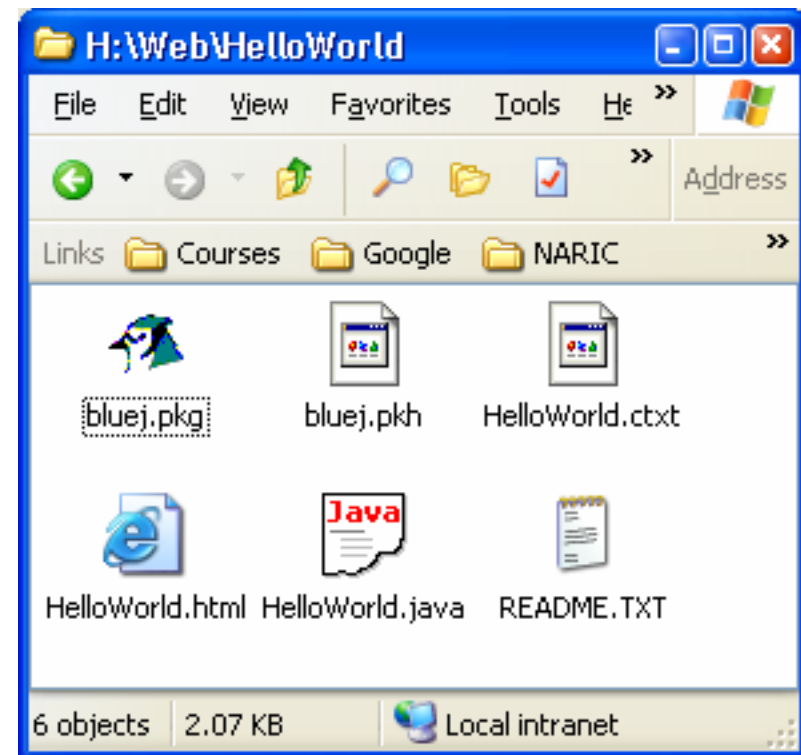
The BlueJ Window

- You will see a screen like the one below
- The upper white sub-window shows that there is one Java file, **Hello.java**, in the project folder
 - The stripes indicate that **Hello.java** has not yet been compiled
- It also shows that there is a descriptive plain text file in the folder



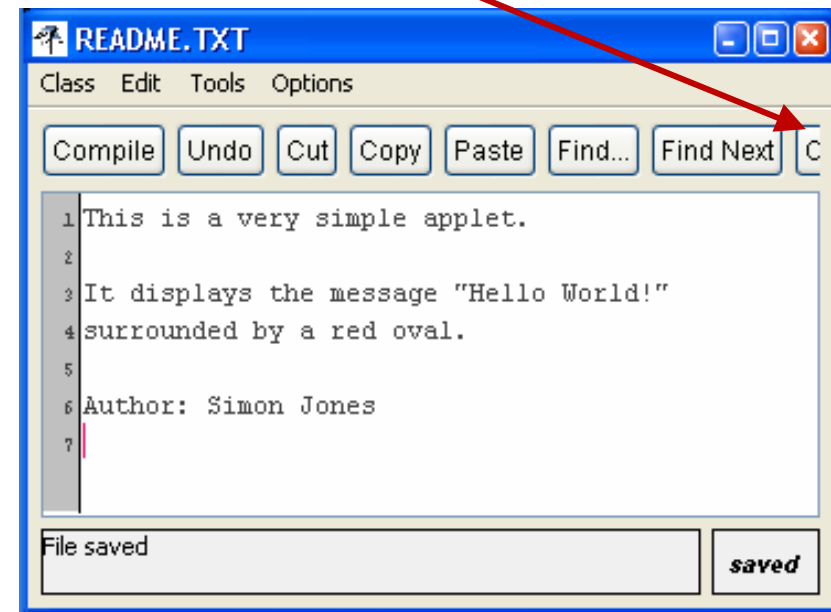
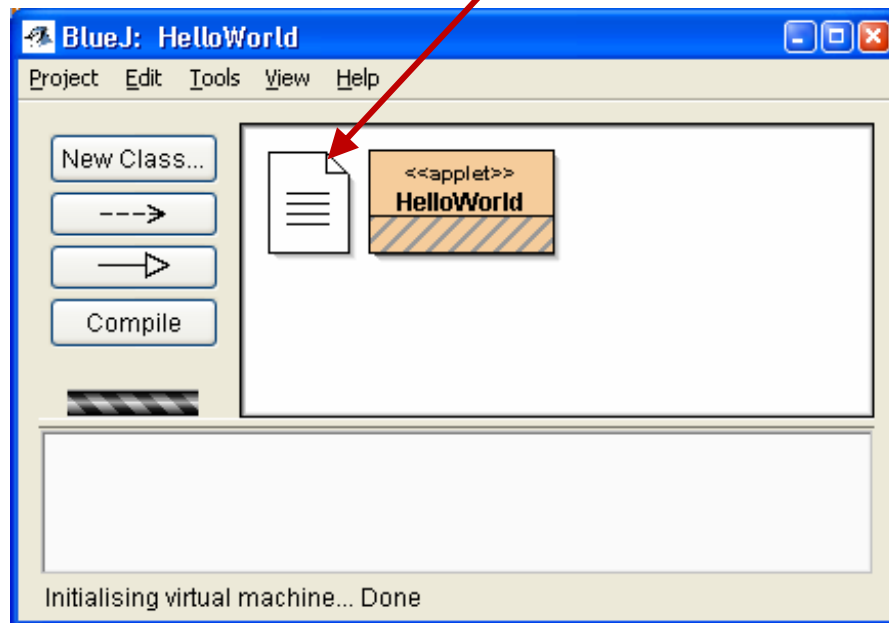
The project folder

- On the desktop, open your Home folder and navigate to the new folder **Web\HelloWorld** that you created. Open it
- This folder contains the basic necessary items for a BlueJ Java project (which have been created for you):
- Note that the icons might not all appear as in this image
- Look at the file name extensions to see which file is which (may need to enable these via **Tools/Folder Options**)



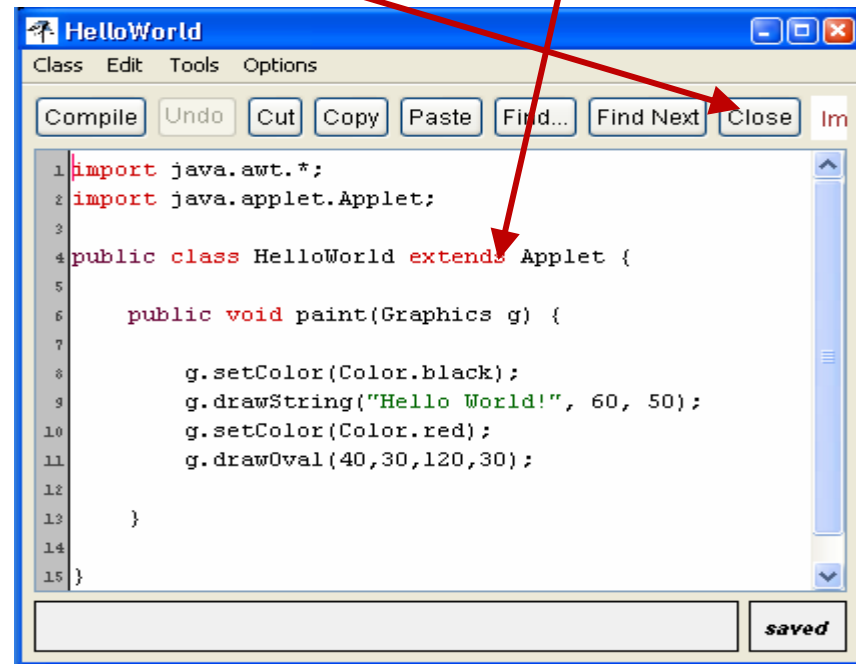
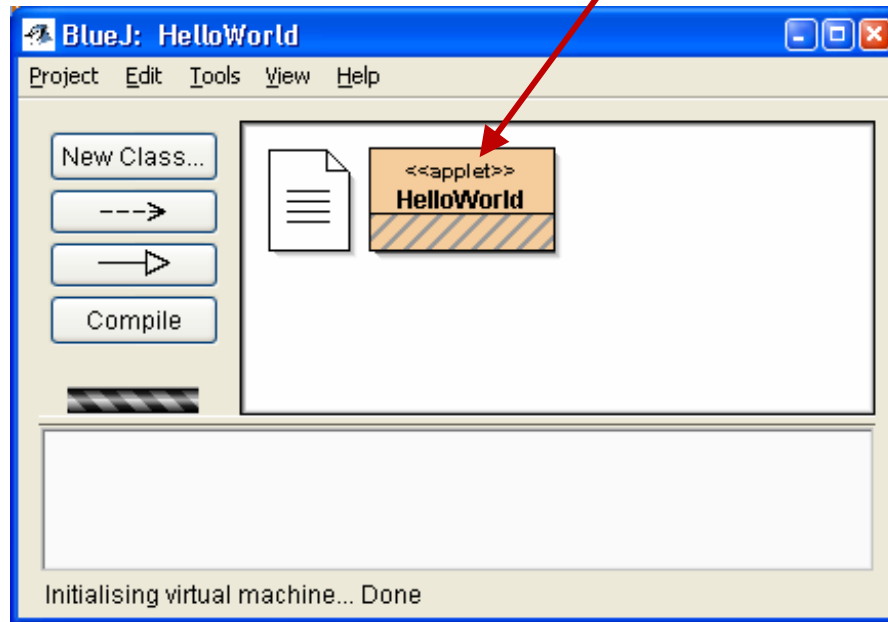
The descriptive notes file

- Switch back to the BlueJ window
- Double click on the text file icon
- BlueJ will open a new editor window and show you the description - click Close when you have seen it



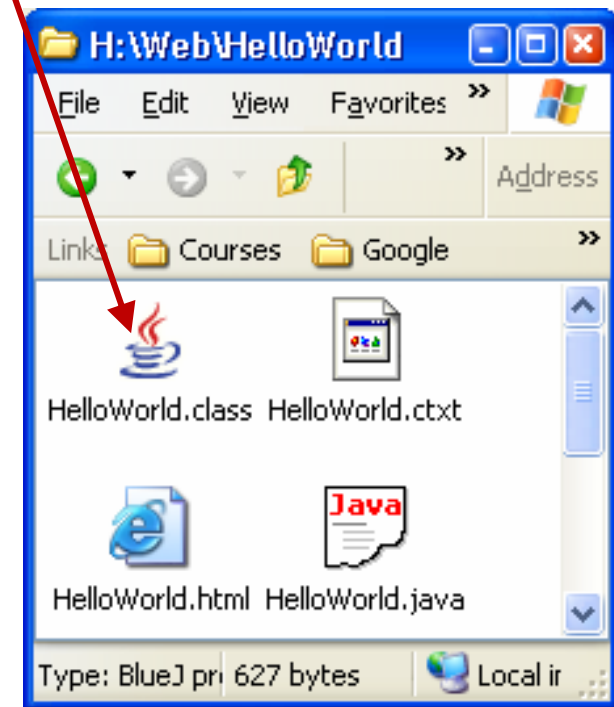
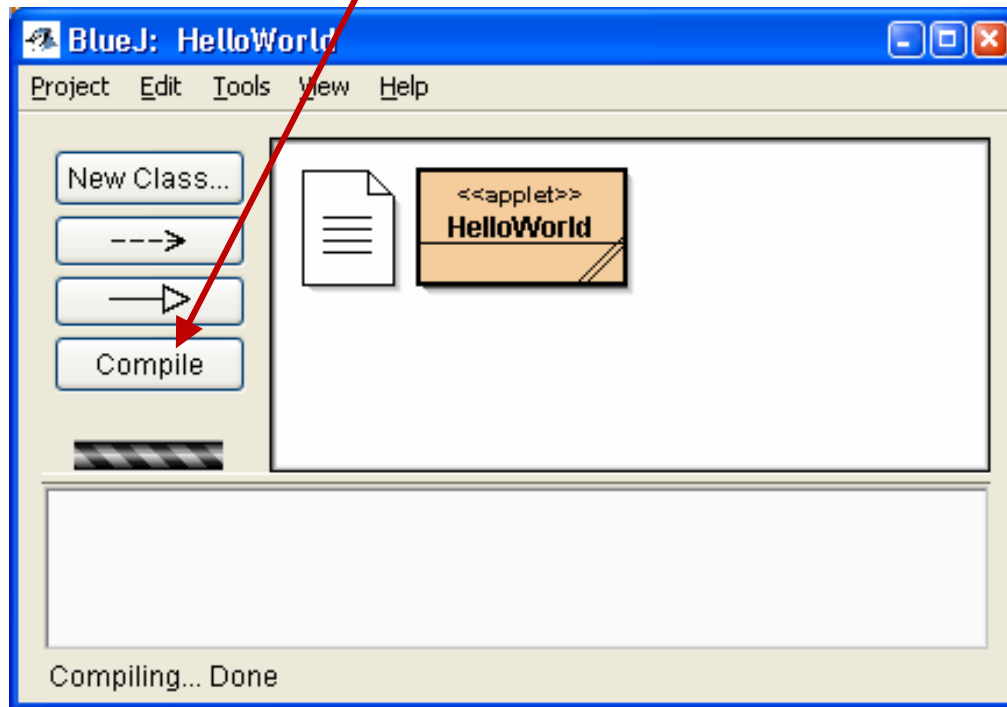
The Java file

- Double click on the stripy HelloWorld icon
- BlueJ will open a new editor window and show you the Java
- BlueJ uses colours to indicate different parts of the program, but they are not saved in the file
- Click Close when you have looked at it



Compiling an applet

- Programs in Java must be *compiled* before they can be run
- The BlueJ IDE organises this for us
- Click the Compile button, and wait a bit...
- When compiling has finished, the stripes disappear, and "Compiling... Done" appears at the bottom of the window
- The file **HelloWorld.class** has been created



- If the program contains errors, the translation may not be possible:
 - The IDE will show an error message in the Java editor window (which will be re-opened automatically if necessary)
 - The cursor will be placed where the error was detected, and some of the text may be highlighted
- For more help on an error, click the question mark
- After making corrections, click the Compile button again
 - There is a handy one in the editor window too!
- Note: The IDE *automatically* saves files

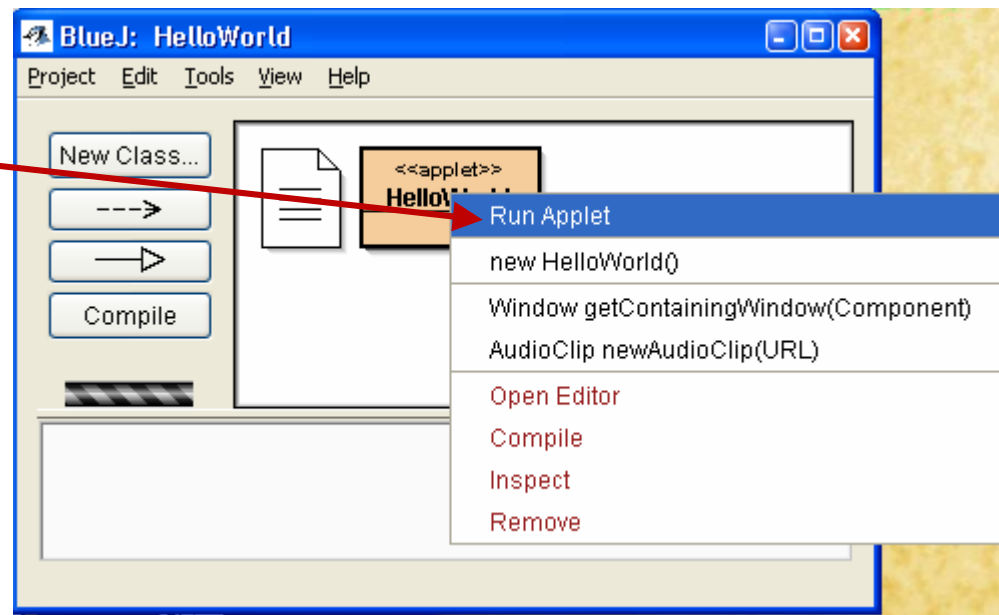
```
1 import java.applet.Applet;
2
3 public class HelloWorld extends Applet {
4
5 public x void paint(Graphics g) {
6
7
8     g.setColor(Color.black);
9     g.drawString("Hello World!", 60, 50);
```

<identifier> expected

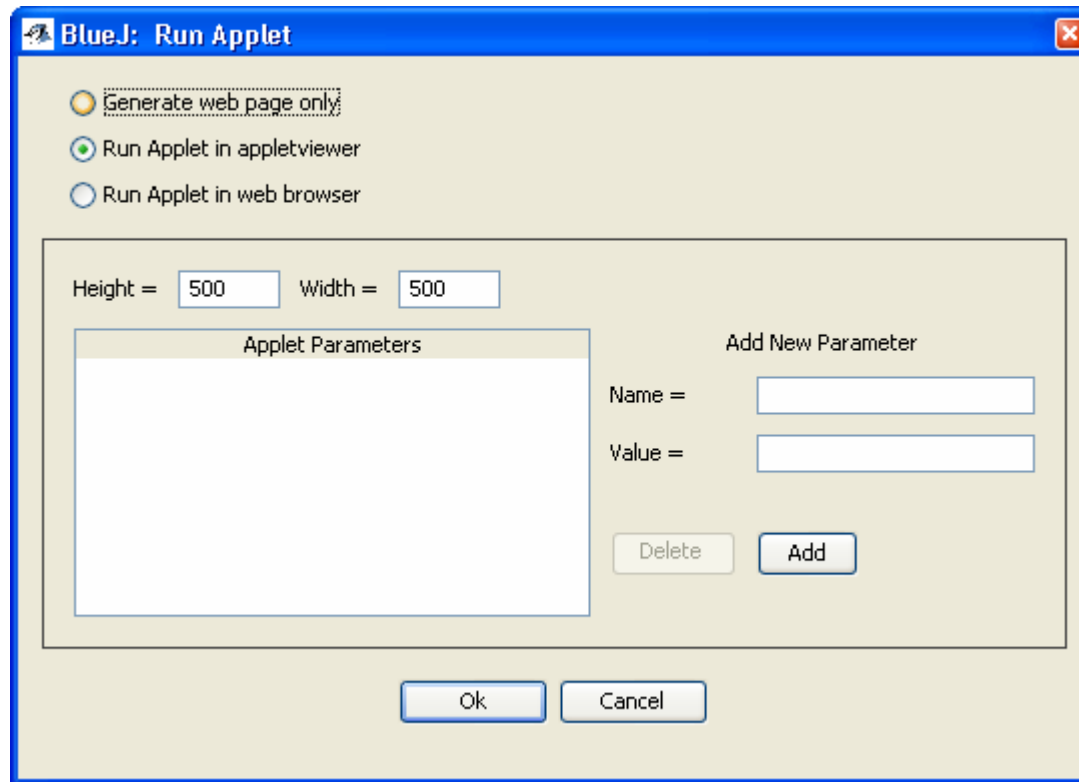
? saved

Running the applet

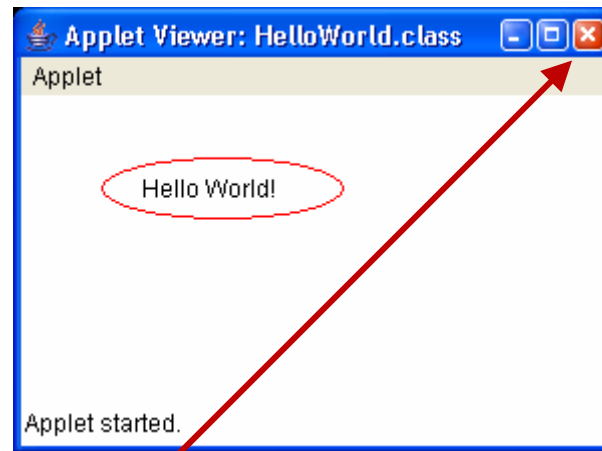
- When there are no more compiling errors, the applet is ready to run
- Switch to the main BlueJ window
- Click the **RIGHT MOUSE BUTTON** on the HelloWorld icon
- A list of possible actions will pop up
- Click once on the option that says **Run Applet** to request that action to be carried out



- First a dialogue box pops up inviting you to set up the applet's launch details
 - This is used to automatically build a small HTML file
 - You can adjust the defaults, or just click OK to accept them



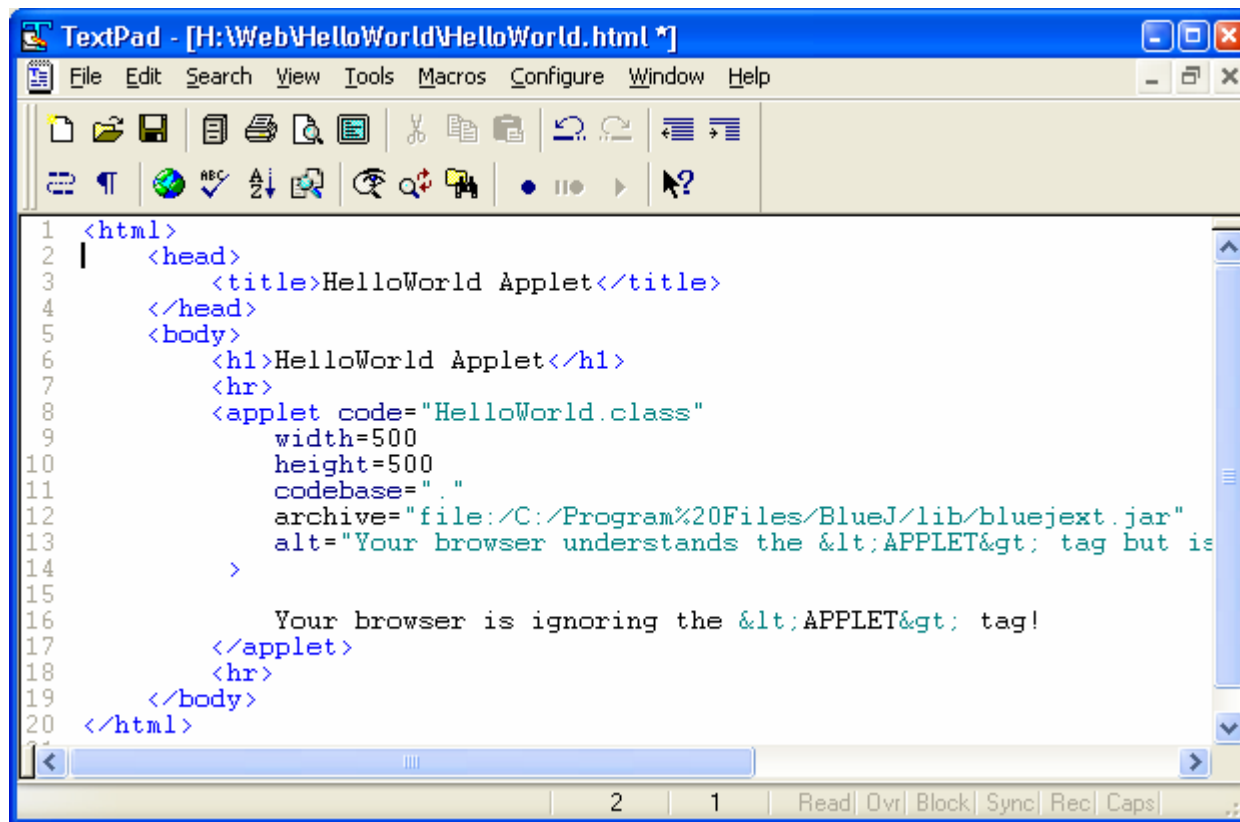
- The applet will start in a new applet viewer window
 - The applet viewer shows us the applet without the cumbersome browser window!
 - It may be BEHIND other windows, so try minimizing if you cannot see your applet's window!



- Click the usual close box when you have finished viewing the applet

The HTML

- BlueJ automatically writes a small HTML file to run our applets for us
 - You can open it with TextPad if you wish
- Here are the contents of BlueJ's **HelloWorld.html** file:

A screenshot of the TextPad application window. The title bar reads "TextPad - [H:\Web\HelloWorld\HelloWorld.html *]". The menu bar includes "File", "Edit", "Search", "View", "Tools", "Macros", "Configure", "Window", and "Help". The toolbar contains various icons for file operations and editing. The main text area shows the following HTML code:

```
1 <html>
2 |   <head>
3     <title>HelloWorld Applet</title>
4   </head>
5   <body>
6     <h1>HelloWorld Applet</h1>
7     <hr>
8     <applet code="HelloWorld.class"
9         width=500
10        height=500
11        codebase="."
12        archive="file:/C:/Program%20Files/BlueJ/lib/bluejext.jar"
13        alt="Your browser understands the &lt;APPLET&gt; tag but is
14    >
15
16        Your browser is ignoring the &lt;APPLET&gt; tag!
17    </applet>
18    <hr>
19  </body>
20 </html>
```

The status bar at the bottom shows "2 | 1 | Read | Ovr | Block | Sync | Rec | Caps".

End of basic introduction to BlueJ for developing applets