**How to run Java Applets**

Java applets are small programs that run inside a web browser. They used to be very popular, but are less so today. However, here are still many useful applets out there; in particular, our Interactive Real Analysis (IRA) online text uses a few. Here are instructions for how to configure a web browser to run these (and other) applets.

1. **Download and install Firefox**

Firefox is a free web browser that is easiest to configure for running Java applets. And, it has many other useful features, so it is good to have that program installed in any case. Download the program from [www.mozilla.org](http://www.mozilla.org) and install it. Note: you do not have to make it your default browser.

1. **Download and install the Java Runtime Environment JRE**

Visit [www.java.com/en/download/](http://www.java.com/en/download/) and download and install the latest Java version. This will take a little bit; just follow the instructions.

1. **Configure Java to run applets for IRA**

Before you can run a Java applet, you need to “white-list” the corresponding web site(s). Click the Windows *Start* button and type “Java”. You should see a program called “Configure Java” – start that program. The “Java Control Panel” should open. Click on the “Security” tab, then “Edit Site List …” and “add” the following websites: <http://www.mathcs.org/> and <http://pirate.shu.edu/> . You might get a warning about “https” versus “http” – ignore it and add the two sites exactly as spelled.

1. **Run a Java applet**

Start the Firefox web browser and visit our IRA site [www.mathcs.org/analysis/reals/](http://www.mathcs.org/analysis/reals/), as usual. Pick the “Java Tools” category from the list of chapters on the left and choose, say, the “Continuity Checker” applet. Firefox should display a warning, but when you click on “run…”, the applet should run and you can play with it. The continuity checker applet, like several other applets, are built into the online text at various locations and they allow you to interactively explore different topics.

You can find additional applets I created at [www.mathcs.org/java/programs/](http://www.mathcs.org/java/programs/) in support of different mathematical topics. You might find *zMap* (for Complex Analysis), *Population* *Dynamics* (to illustrate predator-prey systems), *Mandelbrot* *set* (to explore the Mandelbrot set), and *Fast* *Fourier* *Analysis* (which we will discuss in Analysis 2 next semester) particularly interesting, or you could use the *Tower* *of* *Hanoi* applet to try to bring the world to the end.

Note that if you want to run applets on other sites, you will first need to “white-list” them. Be careful, though, there are malicious applets out there.