

## From the TechnoManor

Have you ever been rummaging around on the Web and gotten some message about “Java?”

*What is this Java thing? Surely they don't want me to pour coffee into my computer!*

No, they don't. There's no slot in your computer to pour your morning elixir into.

When they use the words “Java” and “computer” in the same breath, they're talking about a programming language. But this language has some special characteristics.

Let me back up a little. A *programming language* is a set of instructions telling a computer what to do...at a very fundamental level. Most of these languages look sort of like English, but are baffling (e.g., “MyVariable = SmartValue”). They are converted, or *compiled*, into something the computer can understand (e.g., MOV #42,R12).

That's ok, but there are some problems with programming languages. They don't always work the same on different computers. This can be an issue when it comes to the Web.

When you visit a Web site, the Web site doesn't know what kind of computer you're using (it can make some educated guesses, but not always on the mark). If it tries to do something beautiful or clever on your computer, the results may look ok, or may look awful. It all depends on what kind of computer you're using to visit the Web site.

One way to solve this problem is for the Web site to assume it's talking to the same computer no matter what. Now that doesn't make sense. I'm using a Windows PC, you might be using a Mac, but the Web site thinks they're the same computer? How can this be?

In Computer Science there is the concept of a *virtual machine* (or *VM*). Think of it like “fantasy football.” In fantasy football, you have a dream team made up of players drawn from the stats and talent of real players. The team behaves more like you want, instead of suffering the quirks of reality. So a virtual machine acts like a dream computer behaving like everybody wants and understands. It's a fairly simplistic computer. Companies create computer programs on real computers that mimic this dream computer, this virtual machine.

When your real computer visits a Web site that wants to use this virtual machine, the Web site talks to the special computer program inside, thinking it's talking to

the dream computer. The Web site is satisfied. It displays something on your computer that looks beautiful.

Ok, so what's that got to do with Java?

Java is the programming language that tells this virtual machine what it should do. Web sites can send special little programs written in Java (called *applets*) that your Web browser takes and sticks inside it's virtual machine. The virtual machine runs this applet and shows you the results in your Web browser.

Two Web sites I'm familiar with that use Java are those belonging to the National Weather Service (<http://www.srh.weather.gov/fwd/>) and the US Postal Service (<https://sss-web.usps.com/cns/landing.do>). The National Weather Service Web site has interactive radar maps that allow you to watch approaching storms. The Postal Service Web site allows you to print your own shipping labels with postage.

So, if you get a message about Java, or a Java virtual machine, it refers to this special dream machine inside your Web browser and the language to instruct it.

Now, let me throw a wrench into this explanation. You might also get messages about a Web site needing to run *JavaScript* in your Web browser.

JavaScript is not related to Java, except in its confusing name. JavaScript is a different programming language. It was hatched in the early days of the Web. In those days, all Web pages were simple text with a few pictures. JavaScript was created and added to Web pages. It allowed Web pages to have animated navigation buttons, sophisticated data-collection forms, readily-changing images, and so on. In short, it breathed life into an otherwise static Web page.

Trouble is, JavaScript can be cranky, working differently on different computers in different Web browsers. It's easy to break. But without it, many Web pages (including DCC's) would stop working.

So there we have it. Two technologies that sound like your morning coffee. They give vitality to Web sites and allow for some pretty amazing things to happen. Gee, sounds a lot like how I feel after my first cup in the morning!

Have you gotten fed up with mysterious computer messages? Heard some technobabble in the press and wonder what it means? Drop me a line at:  
frenchygrey@gmail.com

I'll attempt to answer one question each week in *The Link*. If you don't send me questions, I'll have to ask my greyhounds what I should write about. Typically all they want to know about involves food and walks.

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