COMMON Corner

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Moving Beyond RPG: It's All Business

A lot has been made of RPG vs. Java, and when or why developers should consider this move. The first step in that process is to understand the whole concept of object-oriented (OO) programming and the benefits that it can immediately bring to you and your organization.

In OS/400, RPG used to be the only language that could deal with things like external files, packed decimal data, and data areas. That is no longer true. Java can do everything that RPG can—and much more. You've probably read about object-oriented concepts like polymorphism and data encapsulation. What those very intimidating words mean is that large programming tasks can be split into small chunks (objects) with explicit, enforced interfaces. Done well, OO programming makes programs easier to maintain, especially for teams of programmers where each person is responsible for some fraction of the entire application. OO languages also allow you to work with new technologies like Wireless Access Protocol (WAP) and JavaServer Pages (JSP) in an efficient, standard way.

Object Oriented Performance

Many people are not convinced that OO languages can perform well versus RPG. There are many factors involved in how well an application performs, but you can often minimize the impact of any language choice with careful examination and design of code. For example, on the iSeries you pay a (severe) penalty for anything involving packed decimal data—floating point calculations are as much as 10 times faster. For any numerically intensive calculation (involving less than 15 digits of precision), you can often rework your code and immediately see benefits. As another example, Java really only deals with Unicode data (text data stored in two bytes instead of one), so any EBCDIC text stored in your database has to be translated before Java can use it. If you add a logical file that maps your database to a Unicode code page, you can significantly increase database performance.

The bottom line is that a Java program, optimized to run at its highest level on an iSeries with lots of memory, will likely be slower, but in some cases may equal or even exceed a similar RPG program.

Object Oriented Payoff

As a CIO or MIS director, you need to always be aware of the cost of any development efforts. There are not only fixed costs like salary and training, but lost income because your department is unable to quickly adapt to new technologies like the web and wireless applications (and whatever the next great paradigm shift is). There are also costs involved in hiring skilled programmers.

Colleges continue to teach hundreds of thousands of students modern OO programming techniques in Java and C++, yet very few of them have even heard of RPG. It is going to be harder and harder, as time goes by and your business expands, to find the right people for the right price with the skill set to maintain your existing RPG code.

As an RPG programmer, your biggest motivation should simply be the help wanted ads. There are pages of jobs involving C++ and Java, but only a very few that mention RPG. Even if you are perfectly happy doing what you're doing, widening your skill set to a market that is 50 or 60 times larger makes your value (and your negotiating position) at your existing company that much better.

IBM is aggressively pushing new tool sets to broaden the appeal of the iSeries in new markets. Most of their research dollars seem to be going toward making their solutions internet friendly, and not toward making RPG into a true OO language. So, what does all of this mean to you? What it means is that there are significant advantages to moving code development into an OO environment. It means that you can move to a widely accepted language with little training. It means that you can edit your code on your PC with world-class tools from any of dozens of vendors. And with your choice of tools that facilitate an RPG to Java conversion, you can keep your existing business logic in place and enjoy all of those benefits today.

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The 5th Wave   By Rich Tennant

"Think of our relationship as a version of Linux — I will not share a directory on the love—branch of your life."