Evans Data Corporation

EDC

Developers' Choice

IDE Scorecard

Definitive Rankings of the Top Nine IDEs by Over 700 Developers

February 2006

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INSIDE THIS REPORT

"..in addition this IDE received high scores, though not top score, in virtually every other category.."

IDE Scorecard

Overview

Abstract and Methodology

In November 2005, Evans Data Corp conducted primary market research on IDEs, interviewing over 700 developers and asking them to rate nine of the top IDEs. Developers only rated the features of those IDEs that they had used. They were asked to rank thirteen different features commonly found in IDEs. Each feature could be ranked as "excellent, "very good" "adequate", "needs improvement" or "NA". During processing, the first four rankings were assigned a numerical value according to their relative significance. Values were then combined to produce a score for each element for every IDE and also for an overall total score.

IDEs ranked were:

BEA's Weblogic Workshop
Borland's JBuilder
Eclipse
IBM Rational Web Developer or Application Developer
IBM's Websphere Studio
Macromedia Studio MX
Microsoft Visual Studio .NET
Oracle Developer Suite
Sun Java Studio

The following pages describe the overall relative ranking of the IDEs by their own users, as well as the rankings for each IDE according to the category being assessed.

Most Frequently Used IDEs

"Eclipse provides excitement .. as the fastest growing IDE anywhere today"

This table shows the results of the stub question that opened the dynamic IDE ratings portion of the survey. Developers were asked to identify which of the IDEs in this table they used. They were then asked to rank the features of those they selected. This was a multiple response question and developers could select as many IDEs as they use.

Microsoft Visual Studio.NET continues to have a commanding lead in the IDE market. This is no doubt due in large part to the dominant position Windows has in the market and Visual Studio's close tie to the Microsoft operating system. However, Microsoft has always recognized the strategic importance of developers, and has spent significant resources on producing excellent development tools. Visual Studio.NET is no exception.

Eclipse provides excitement in this table as the fastest growing IDE anywhere today. Eclipse is not just an IDE, though, it is an entire community with close to 100 contributing members. Although Eclipse's users did not give it high marks for most of its features, this juggernaut is the one to watch as it continues to take market share.

Which of the following IDEs do you MOSTLY use for development today?	Count	Percent of Responses	Percent of Cases
Microsoft Visual Studio .NET	411	26.8	53.0
Eclipse	195	12.7	25.2
Macromedia Studio MX	116	7.6	15.0
Oracle Developer Suite	108	7.1	14.1
Borland JBuilder	78	5.1	10.1
IBM WebSphere Studio	67	4.4	8.6
Sun Java Studio	67	4.4	8.6
IBM Rational Developer	59	3.9	7.6
NetBeans	51	3.3	6.6
BEA Weblogic Workshop	47	3.1	6.1
Sun Studio (C/C++/Fortran)	41	2.7	5.3
Borland C#Builder	36	2.4	4.6
CodeWarrior	29	1.9	3.7
Other	226	14.8	29.2
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Total responses	1531	100	197.7
29 missing cases; 775 valid cases			

Enterprise and SMB Development Surveys 2005: Fall, © 2005 Evans Data Corp.

Compiler / Interpreter

Compiler / Interpreter	Relative Ranking
Borland JBuilder	227.8
Microsoft VS .NET	215.4
Eclipse	211.1

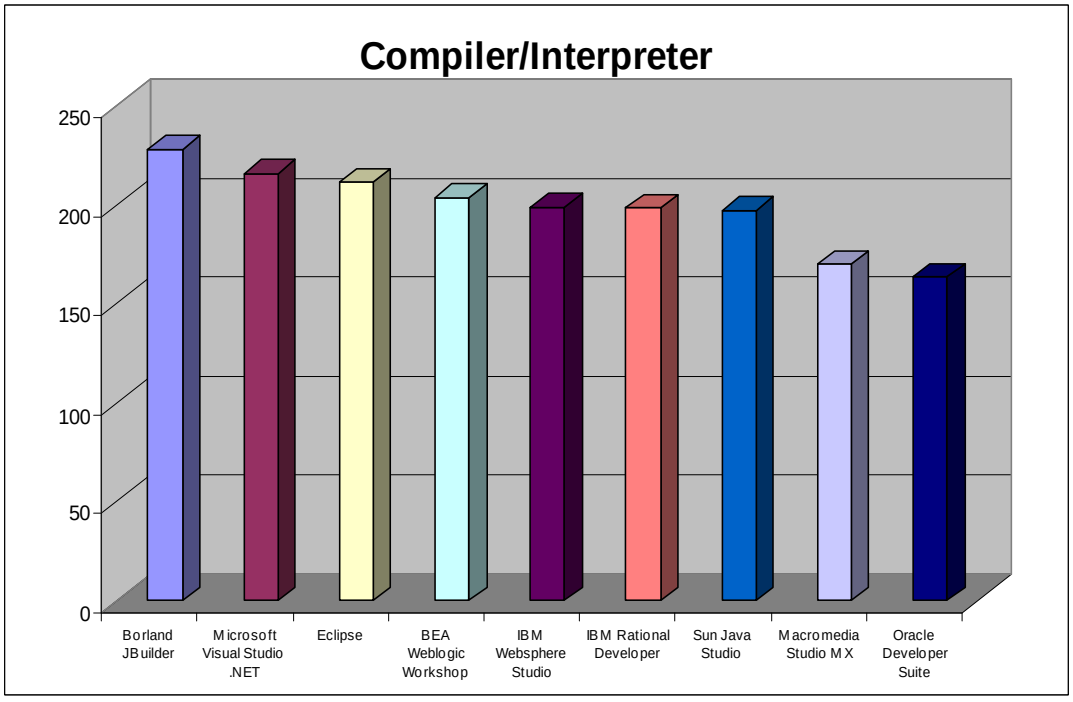
The compiler, or the interpreter in the case of interpreted languages, is the heart of the toolset that comes with an Integrated Development Environment. It is usually considered first in the selection of an IDE and arguably has the most impact on both the desirability of the IDE itself as well as on the applications the developers create.

Since its inception, Borland has been noted for the excellence of their compilers, and that reputation obviously is still well-earned today. It is no accident that Borland not only topped all the other tool makers as far as satisfaction with the compiler goes, but also got the best ranking for both speed of the compiler and also performance of the resulting applications.

".. It is no accident that Borland not only topped all the other tool makers as far as satisfaction with the compiler ..."

The compilers that ship with Microsoft's Visual Studio.Net also got very strong ratings from its users. Microsoft, of course, has been in the tools business since Bill Gates and Paul Allen released a version of BASIC for Altair computers when the company was first starting up in 1975. BASIC later morphed into Microsoft BASIC and finally evolved into a whole family of languages and tools. The quality that Microsoft insists on in their tools is reflected here by the high marks that Visual Studio.Net users gave this product.

On the other hand, the users of Oracle Developer Suite are relatively unhappy with their compilers. Oracle's IDE got low marks in many areas during this survey. Recently Oracle has been acquiring tools companies. Perhaps that will help.



Debugger

Debugger	Relative Ranking
Borland JBuilder	206.9
Microsoft VS .NET	201.9
IBM Websphere Studio	189.0

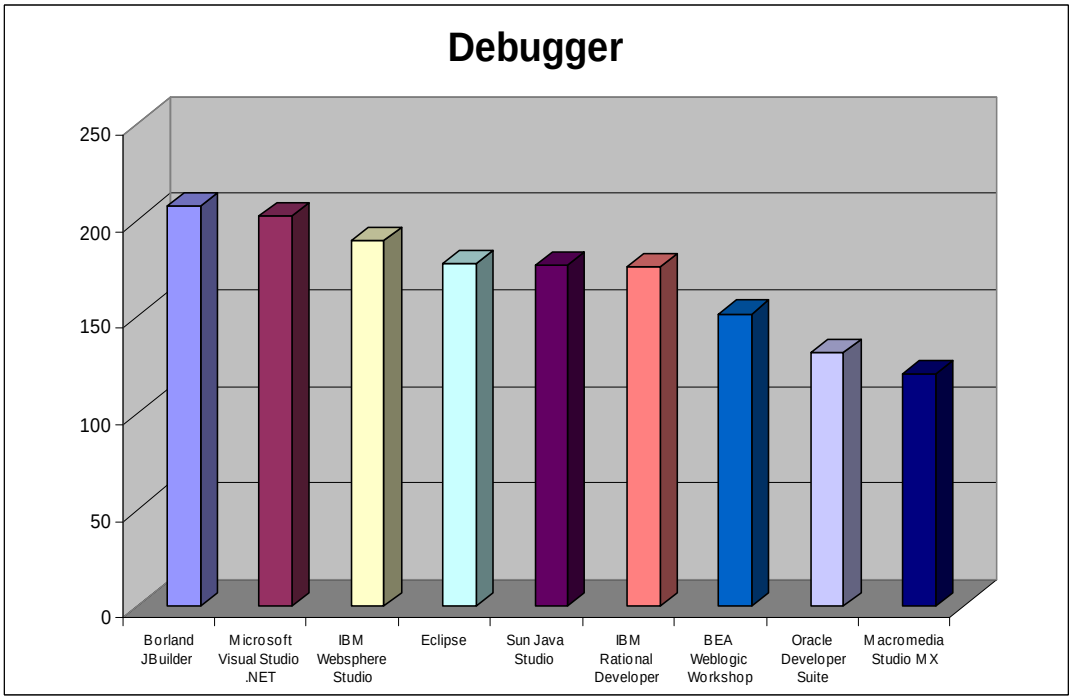
A debugger is just as important as a compiler since no developer writes a perfect program. All programs must be debugged, and this is usually an iterative process. The debugger that ships with most IDEs are source-level or symbolic debuggers. At its most basic function, the debugger runs with the applications and stops on the problem line when the program crashes, thus making it easy for the developer to identify and fix the problem. Most debuggers that ship with these IDEs, however, are more sophisticated than that and include features such as the ability to single step through each line of code, set breakpoints in the code, set conditional breakpoints and other capabilities.

"Once again, Borland shows its roots through the excellence of its tools."

Once again, Borland shows its roots through the excellence of its tools. Not only do their users value the debugging tools that ship with their IDEs, but they also make available a thread debugger which helps with debugging complex multi-threaded applications.

At the time this is being written the folks at Borland have just announced their intention of selling their tools business. If they go through with that, some company is going to get a great set of tools.

As with compilers, Microsoft's users gave the Visual Studio debugging tools very high marks. The difference in rankings between the Borland and the Visual Studio debugger was minimal and both debugging tools were viewed by their users as excellent.



Editor

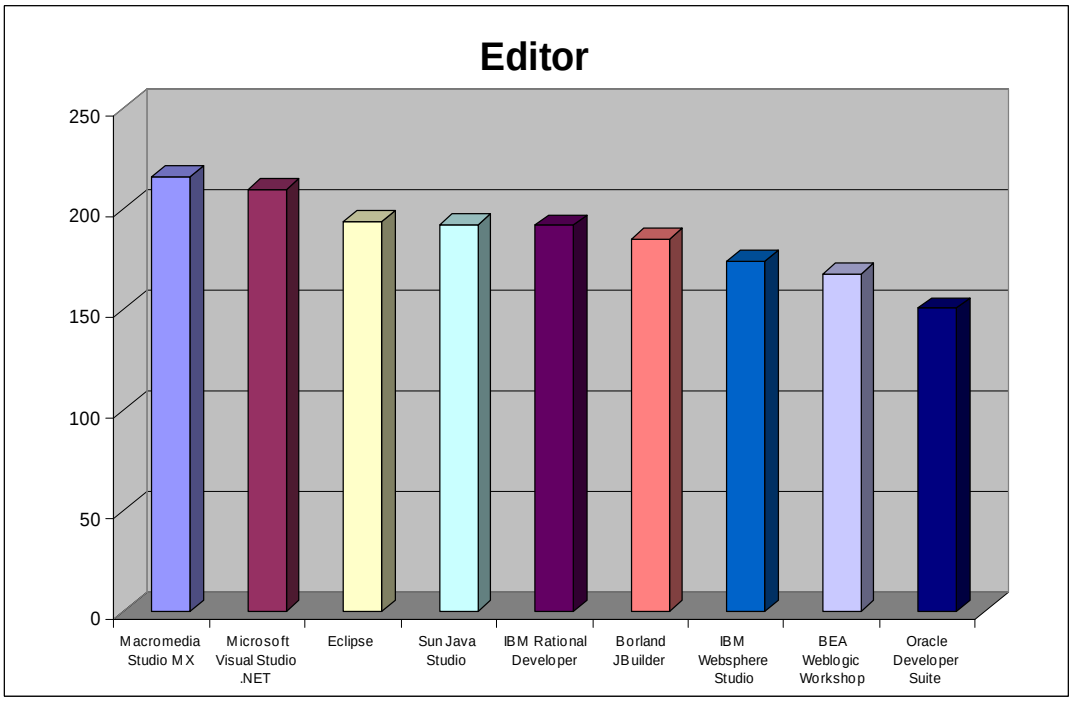
Editor	Relative Ranking
Macromedia Studio MX	215.9
Microsoft VS .NET	209.6
Eclipse	193.7

Of all the tools that ordinarily accompany an IDE, there is none that inspire as much loyalty or lack thereof than the editor. Why is this? The answer is obvious. The editor is the tool that developers spend the most time with – though a few might argue that they spend as much time with their debugger. Developers become very attached to their editor, so much so that they will often integrate their favorite editor into an IDE rather than use the one supplied.

Any text editor can be used to create code, however source code editors have special features built in to help with the editing of source code such as color syntax highlighting, or autocomplete mode and often are designed to be able to also run a debugger or compiler and streamline switching between them.

The fact that Macromedia's users gave their editor the highest marks probably stems from Macromedia's history producing easy to use high quality html editors such as the popular Dreamweaver tools. It's also consistent with the fact that Macromedia's IDE received the highest rankings ease of use and for the quality of their help/documentation.

Oracle's editor received particularly low marks, significantly below what any of the others received.



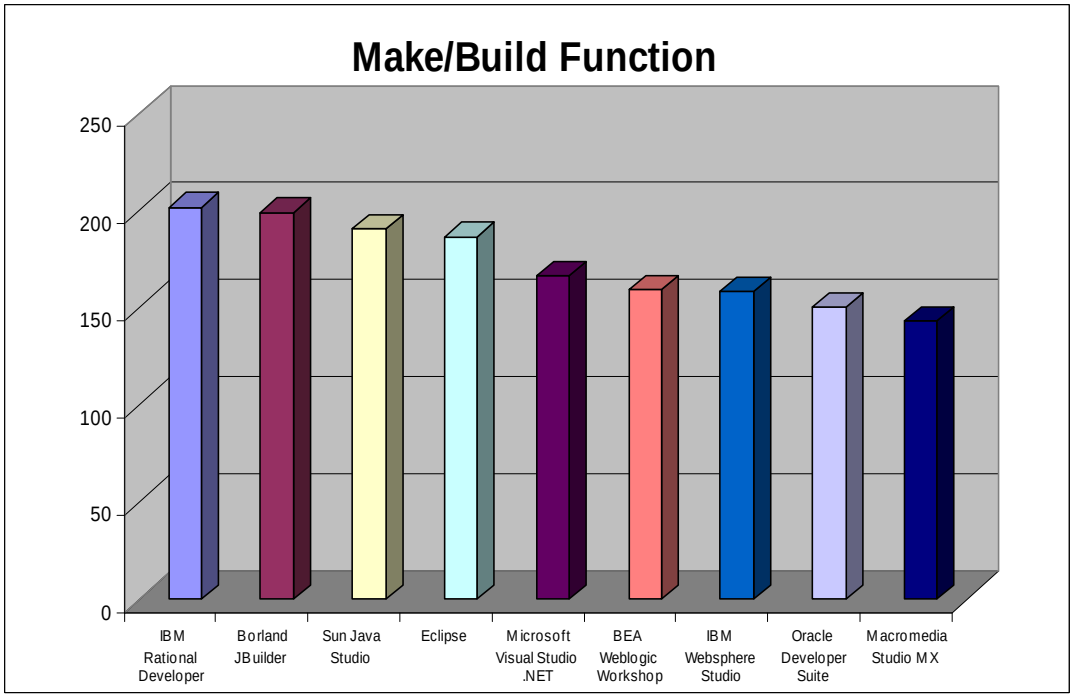
Make/Build Function

Make / Build Function	Relative Ranking
IBM Rational Developer	201.5
Borland JBuilder	198.6
Sun Java Studio	190.5

The original make file is a utility that automates the process of converting files from one form to another, doing dependency tracking and invoking external programs to do additional work as needed. It was originally used with UNIX and it and its variations are very widespread. Developers have been using make for a long time in the process of building their applications. Make-like tools are inherently shell-based -- they evaluate a set of dependencies, then execute commands not unlike what you would issue in a shell. Thus vendors can easily extend these tools. Consequently, a small industry has grown up for build automation tools.

Build automation tools are available commercially and as Open Source tools and most can be integrated into IDEs or certainly used alone. ANT, the Open Source build tool from the Apache Project is especially popular.

IBM's Rational Developer IDE was given the highest rankings for the build automation tools that ship with this IDE. IBM acquired Rational and its superior tools a few years ago and instead of killing off the products as happens in so many acquisitions. IBM has nourished and enriched the Rational toolset to the point where this IDE got the top overall ranking across all the features of each of the IDEs in this survey.



Help / Documentation

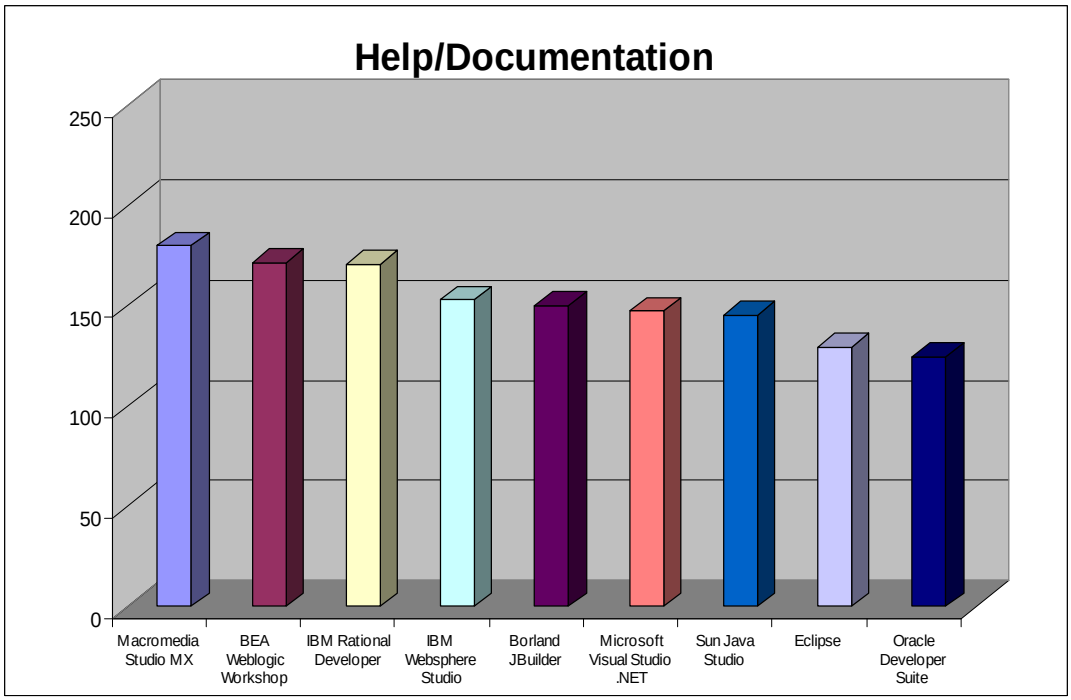
Help / Documentation	Relative Ranking
Macromedia Studio MX	179.9
BEA Weblogic Workshop	171.5
IBM Rational Developer	170.8

"…Macromedia's users are happy with their documentation and help facility."

Documentation and the Help function has always been a favorite topic of complaint for IDEs and for any other software product. If we think about it logically there is no reason why the documentation should always be such a problem, but it nonetheless usually is. The reason for this may be more human than technical. Everyone is exposed to the help system and everyone has an opinion about how things should be said and how they should be presented. With an extensive help system there is plenty of room to present information in a way that not everyone will like.

That said, Macromedia's users are happy with their documentation and help facility. This is undoubtedly related to their history of producing clear and easy to use web design products like Dreamweaver. Products which are created for the less technical users have to be clear and have to be easy to use. That ease of use is demonstrated through a clear and comprehensive help system and documentation.

Once again, Oracle's IDE got rated significantly lower than the others by its users. Oracle's developer tools and its OTN developer program were strong at one time. However, the company has lost a lot of the focus it had on development in the last few years what with acquisitions and a different directional movement. At this point Oracle has just bought a small Open Source embedded database named Sleepycat and there has been some speculation in the news about Oracle buying JBoss. Perhaps the management at Oracle will now direct their attention to enhancing their tools.



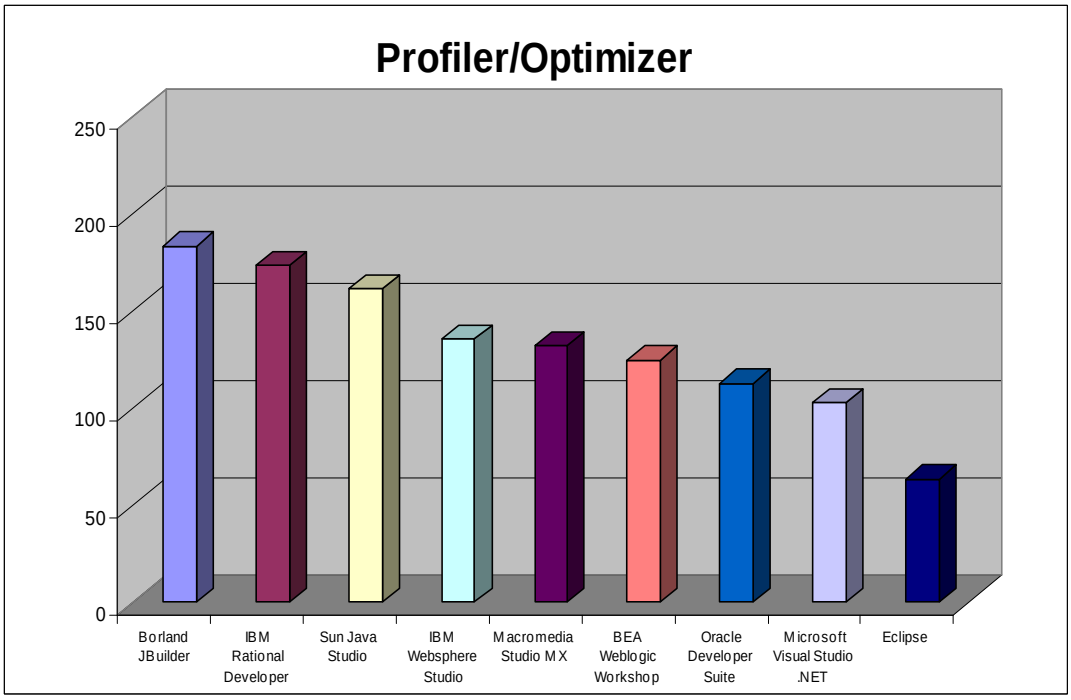
Profiler / Optimizer

Profiler / Optimizer	Relative Ranking
Borland JBuilder	183.0
IBM Rational Developer	173.2
Sun Java Studio	161.4

A performance profiler is a tool that is used on prototype code in order to optimize it or make it more efficient. Most profilers today have distributed capabilities so developers can identify bottlenecks in their code throughout a network. Performance analysis is often used to determine how long certain parts of the program take to execute, how often they are executed, or to generate a call graph. This information is then used to identify those parts of the program that take the longest to complete. These time consuming parts can then be optimized for better performance.

The reason Borland did far better than the others in this area is undoubtedly due to their Optimizeit product. This is a full-featured profiler that lets the developer quickly isolate and resolve performance problems. Optimizeit manages performance across J2EE application tiers and lets developers create high-performance applications that can span the enterprise. In line with their compiler and the overall performance of the resulting applications, Borland's JBuilder IDE and toolset is clearly the best one for creating high performance applications in a variety of settings.

Many IDEs don't have a profiler included. And, in fact, developers have never seemed to value profilers very highly. For one thing, they're only useful during the last part of the development cycle. Additionally many developers rely on compiler optimizations for performance improvements. Note that Eclipse herein received the lowest ranking which is a comment on the availability of Open Source profilers.



Modeling and Design Tools

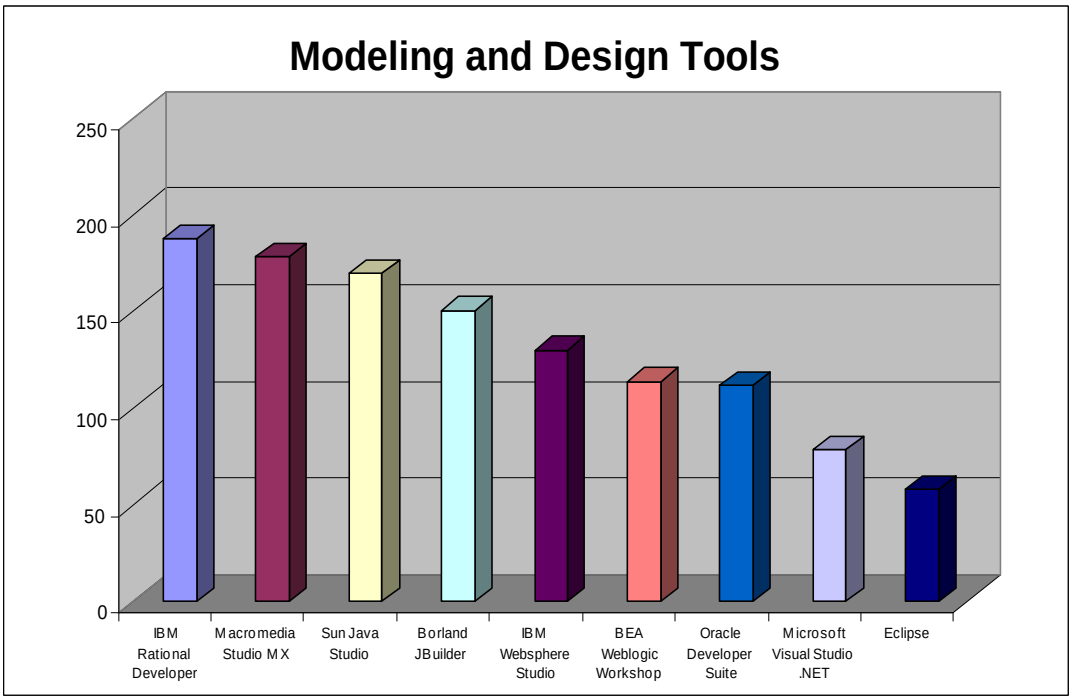
Modeling and Design Tools	Relative Ranking
IBM Rational Developer	187.4
Macromedia Studio MX	177.9
Sun Java Studio	169.4

For the last ten years, Rational has owned the modeling tool market. Indeed, in the early nineties it was James Rumbaugh and Grady Booch, two Rational employees, who united their two methods for modeling objects into one and so began the Unified Modeling Language (UML). UML was completed and adopted by a team from multiple companies, but the impetus and origin came from Rational. IBM, of course, acquired Rational several years ago and consequently, it's no surprise to see that IBM's Rational Application Developer IDE showed the highest level of satisfaction among its users for modeling and design tools.

Microsoft, on the other hand, acquired Visio in an attempt to bolster their modeling tools offering, and completely integrated them into the company, but has apparently not profited from the acquisition. Visio produced two tools – one for modeling applications and another for data modeling that were both well respected before they were subsumed.

Traditional modeling tools allow an architect to create a visual model of how a complex application will work, outlining components, calls, and other functions and thus providing means to optimize and provide stability to applications.

There is another type of design tool which is featured in web design packages and specialized typically to HTML. Macromedia has the corner on this type of design tool, as is clear from the high marks Macromedia received from its users.



Sample Applications

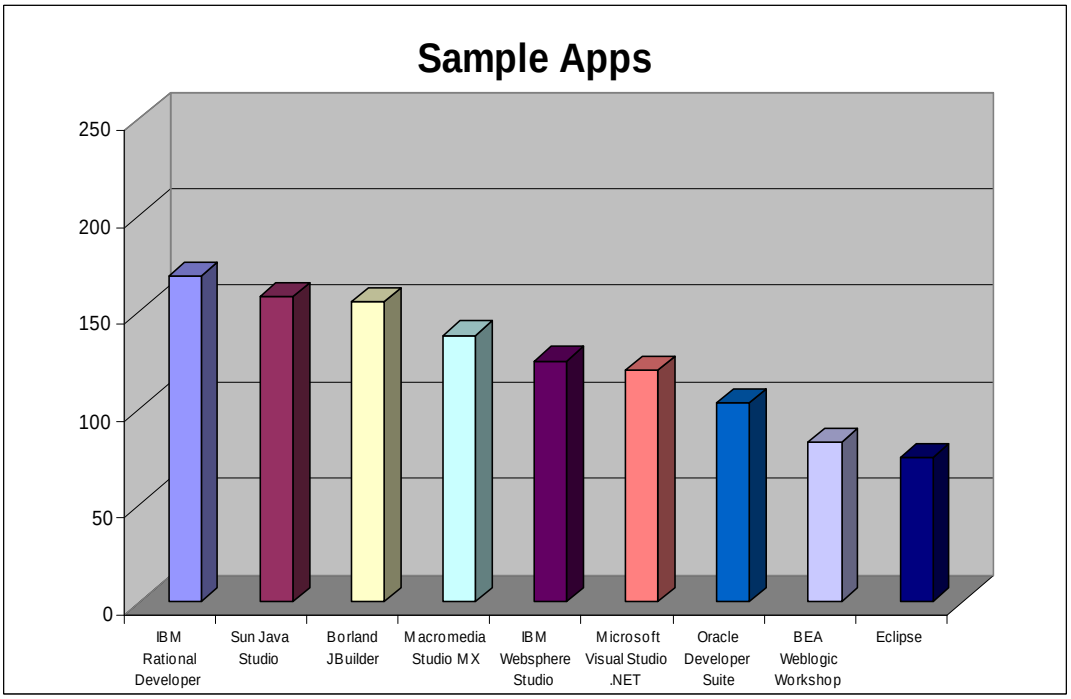
Sample Applications	Relative Ranking
IBM Rational Developer	168.4
Sun Java Studio	158.1
Borland JBuilder	155.4

Some might say that sample applications are not a tool and not necessary to the operation of any IDE and therefore that they are not a valid feature for comparison. However, Evans Data surveys over the last 8 years have consistently shown that from the developers' point of view, sample applications are one of the most critical parts of any tool.

Sample applications not only illustrate to the developer how a tool works, but they're also mostly reusable. Developers can take snippets or whole programs of sample application code and build them right into their own applications. Thus sample applications provide for both education but also provide some shortcuts.

Sample applications do not ship only with IDEs. In the Open Source community there are plenty of applications with source code to be found, but they don't come included when you download Eclipse, which is probably why Eclipse received the lowest marks in this category.

IBM is ever thorough in whatever they set out to do, and developers' have given IBM's Rational product the nod when it comes to the richness of available sample applications.



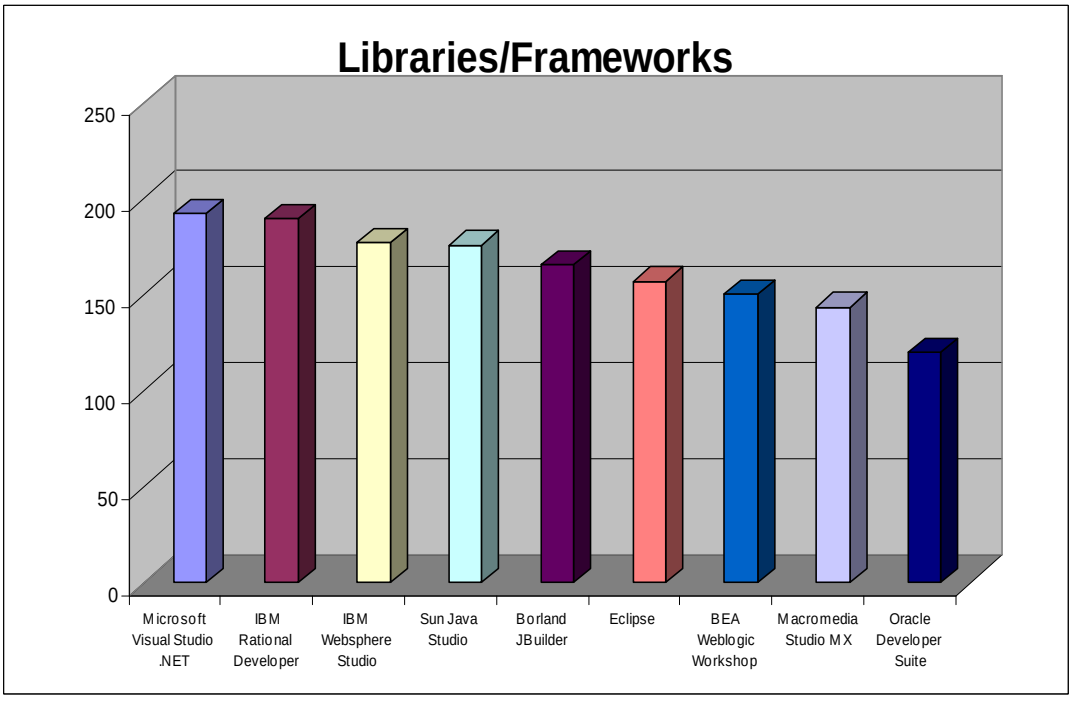
Libraries and Frameworks

Libraries and Frameworks	Relative Ranking
Microsoft VS .NET	191.8
IBM Rational Developer	189.4
IBM Websphere Studio	177.0

An application framework provides a set of components for often used functions that a developer can use to build an application skeleton (or framework) and thus cut down on the amount of development time that's spent on everyday tasks like drawing Windows, dialog boxes, and so on. These frameworks or libraries of pre-assembled code provide a tremendous boost in productivity, but sometimes at the cost of high overhead in the code, which in turn leads to poor performance or large resource footprints.

Microsoft set the bar for frameworks with its Microsoft Foundation Classes (MFC) back in the early eighties. MFC was faulted for being large and slow when it was first introduced, but it was also extensive and was launched at a time when application frameworks were new and exciting. MFC gained more share than competing frameworks and became a standard.

Today, Microsoft's .Net Framework is a major evolution from the days of MFC. The .Net Framework is a development and execution environment that allows different languages and libraries to work together to create Windows applications for the .Net environment. Users of .Net Framework give it the highest ranking.

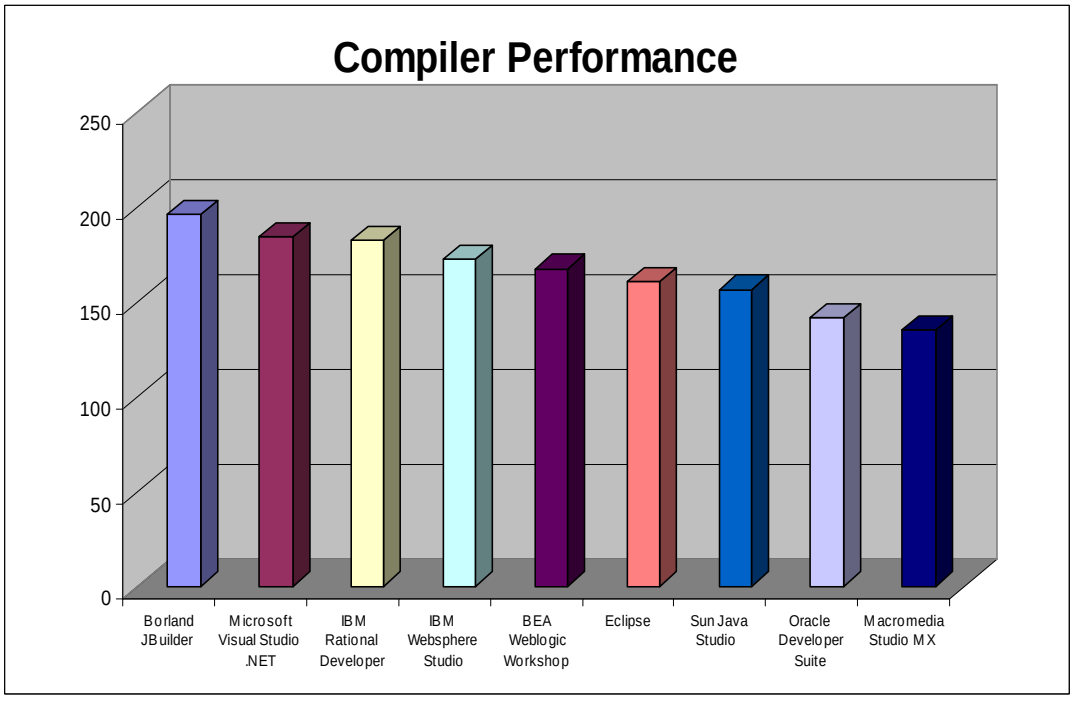


Compiler Performance

Compiler Performance	Relative Ranking
Borland JBuilder	195.8
Microsoft VS .NET	183.9
IBM Rational Developer	182.1

Software programs execute with varying degrees of performance based on several factors including the hardware and operating system they're running on, the optimizations that were used when they were created and the basic way in which they were created and coded. Compilers are software programs, and as such are subject to the same variability in performance as other programs. The difference between compilers and other programs is that compilers are often asked to compile extremely long applications and sometimes millions of lines of code, and so they may need to execute for a relatively long time. Thus performance becomes much more important for compilers than it might for other types of programs.

Borland has long been focused on performance of both its compilers and the resulting applications, and that dedication of high performance has consistently produced the fastest compilers, as their users herein atest. Microsoft and IBM have also devoted much time and effort to keeping their compilers running at optimum speed, and their users also appreciate the fast execution of their compilers. Oracle and Macromedia apparently need some improvement in this area.



Performance of Resulting Applications

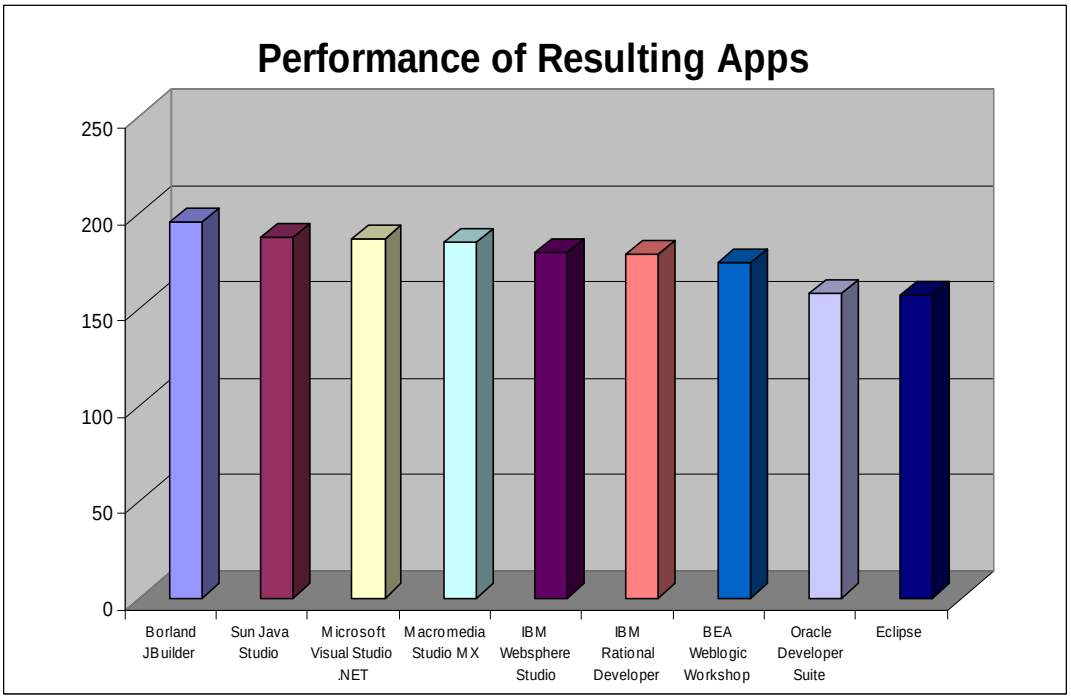
Performance of Resulting Applications	Relative Ranking
Borland JBuilder	194.5
Sun Java Studio	186.6
Microsoft VS .NET	186.3

When asked which is more important, compiler performance or the performance of the resulting compiled applications, developer invariably reply that they care more about how fast the applications they create are than how much time they spend waiting for the compile. There's good reason for that too, as the performance of the resulting application will determine to some degree how successful that application is in the market.

Compiler optimizations are techniques that have been built into a compiler to improve the performance of the resulting applications. In the past, developers used to apply some of these manually, but most compilers today automatically apply optimizations whenever they are appropriate. This frees the developer for other tasks, but also but the burden of application performance is squarely on the compiler.

Generally compiler optimizations are focused on improving performance, by avoiding redundancy, by inlining code and eliminating jumps where possible, by trimming unnecessary code, and by locating those pieces of code which are executed close together in time close together in memory.

Once again, Borland's JBuilder users have lauded the excellent compiler technology that has been a hallmark of Borland tools for fifteen years.



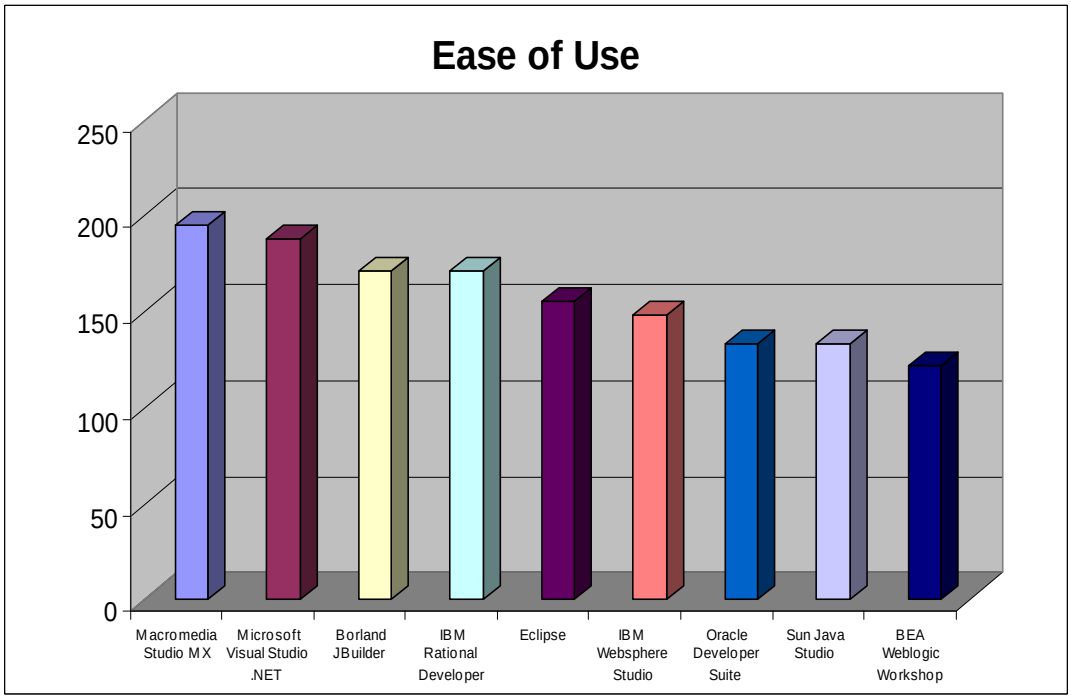
Ease of Use

Ease of Use	Relative Ranking
Macromedia Studio MX	194.6
Microsoft VS .NET	187.3
Borland JBuilder	170.8

IDEs were invented to make developing software easier. The whole idea behind an IDE is to provide an environment for development in which all the tools a developers uses are quickly and easily accessed. IDEs make it easy to switch from the editor to the debugger to the compiler and so on. They also usually provide features for tracking code, for version control, and other administrative chores.

In the last ten years, since the advent of Visual programming, they also provide this capability in the form of providing the ability to create new applications by moving programming building blocks or code nodes to create flowcharts or structure diagrams which are then compiled or interpreted. Visual Programming theoretically eliminates the need to actually write code, though in most cases the developer still must do some coding.

Macromedia Studio MX was designed from the ground up to be easy to use. Its devotion to helping the user and the intuitive visual programming aids that are included in this product are obviously well appreciated by it users.



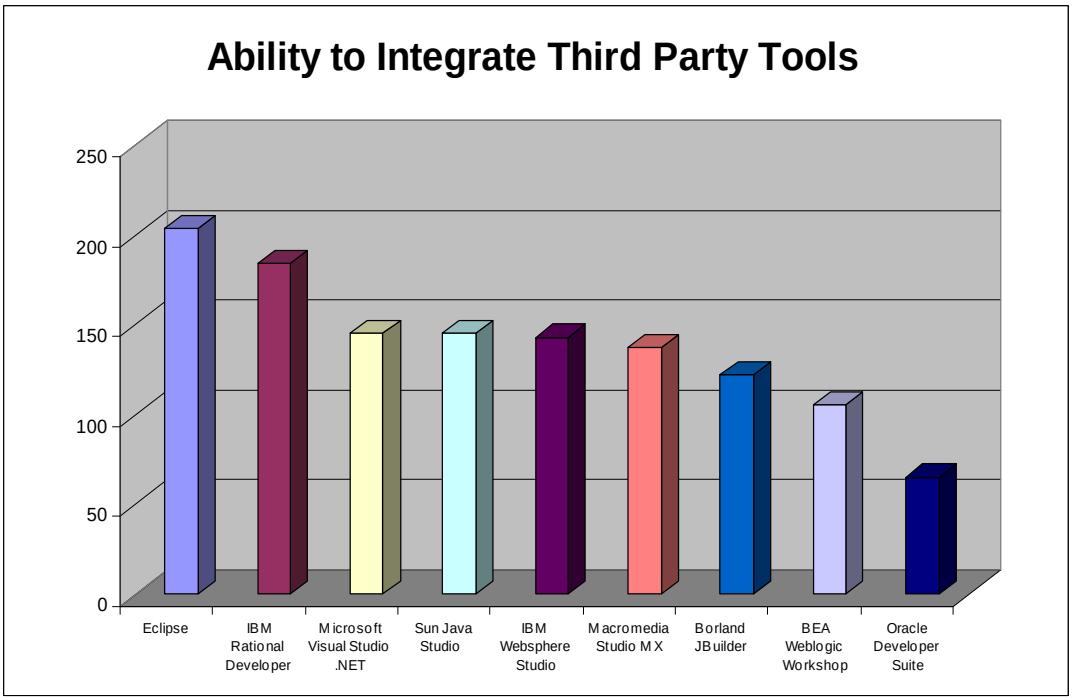
Ability to Integrate Third-Party Tools

Ability to Integrate Third-Party Tools	Relative Ranking
Eclipse	203.9
IBM Rational Developer	184.4
Microsoft VS .NET	145.6

"It's no surprise that Eclipse gets excellent marks from its developers…."

Eclipse is a community as much as a technology. Membership in the Eclipse organization consists of three different levels. There are thirteen Strategic developers who are also members that actively contribute to the Eclipse platform through development or financial support. On top of these, there are fifteen Associate members, who are not for profit organizations or members of the media, like IDG Japan and the Object Management Group. But the vast bulk of the members are Add-in providers, or makers of plug-ins for the Eclipse platform. There are 85 member companies of the Eclipse organization that all make plug-ins for Eclipse, including such heavyweights as Novell, Hitachi, and Red Hat. With such a huge and vibrant community and with a platform that was really designed to accommodate a wide variety of plug-ins, it's no surprise that Eclipse gets excellent marks from its developers for the ability to integrate third party tools.

Compare this with the Oracle Developer Suite, which is largely a proprietary and closed system. Users of Developer Suite gave the Oracle product not only the lowest rankings in this category, but Oracle actually received the lowest ranking here of any product in any category. If Oracle is serious about offering development tools and an IDE then the company needs to invest some serious attention to raising the quality of its toolset. This might be accomplished by opening up the Developer Suite product so it is easier to integrate third-party tools – or by acquiring quality tools from another company, a tactic that seems more in line with Oracle's business operations.



Overall Relative Ranking

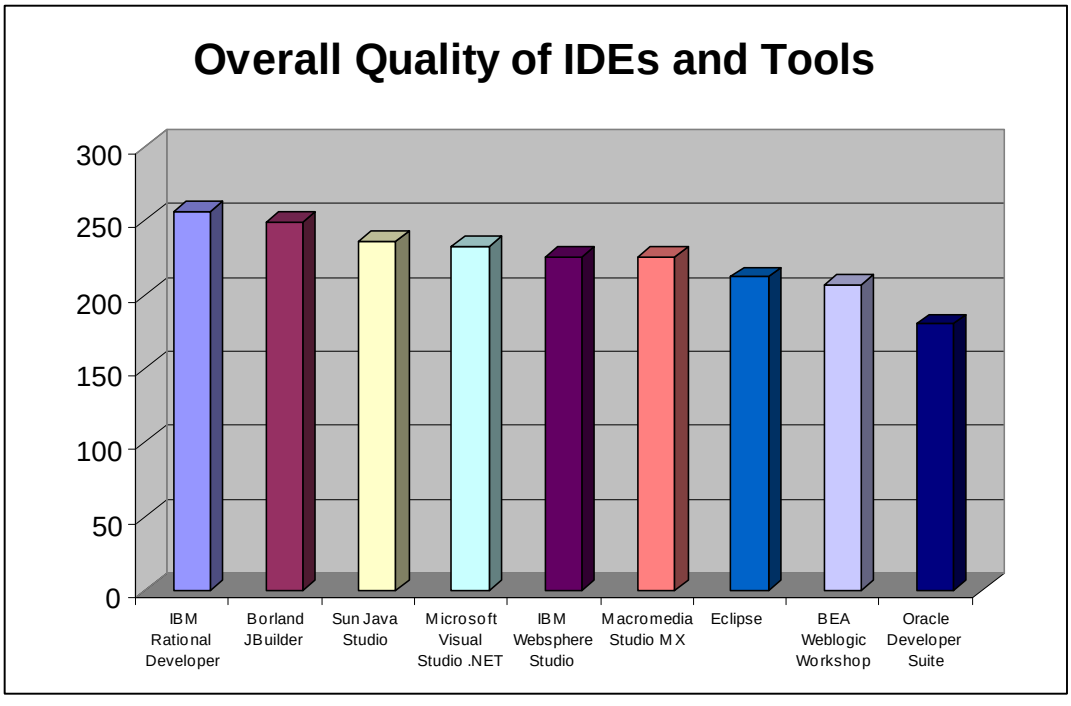
Combined Overall	Relative Ranking
IBM Rational Developer	256.0
Borland JBuilder	249.1
Sun Java Studio	236.2

The chart on this page shows the combined overall ranking for the nine IDEs that developers rated. Relative scores for each of the categories were calculated for each of the IDEs and then the scores were added together. What resulted was a combined overall ranking as shown below.

IBM's Rational Application Developer product received the highest overall rankings from it users. It received the highest ratings for Modeling and Design Tools, Sample Applications and the Make/Build function. In addition it received high scores, though not top score, in virtually every other category. Rational was a powerhouse of development tools when IBM bought the company and IBM has handled the acquisition beautifully, not letting the quality of the Rational products slip at all.

Borland's JBuilder won the top scores for the core IDE tools and for performance. Always focused on high-performance compilers, Borland took top place for Compiler/Interpreter, Compiler Performance, Performance of the Resulting Applications, Debugger, and Profiler/Optimizer. At this tie Borland has just announced that it will divest itself of its IDEs and tools to concentrate on Application Lifecycle Management. This presents a huge opportunity for some company to buy some of the best tools on the market.

Perhaps Oracle should make this acquisition. Their Developer Suite IDE is not well loved by its own users. It consistently got the poorest marks in many categories, including Compiler/Interpreter, Editor, Libraries/Frameworks, and the Ability to Integrate Third party Tools.



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