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Methodology–Implementing web-based applications

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The Internet and pervasive computing has affected all scientific disciplines, including Geomatics. In almost all of the GIS applications, while providing a web-based (intranet- or the Internet-) solution to clients, it usually reflects the well-known n-tier architecture, specifically “3-tier”. In this way, it is easy to isolate platforms and their implementation details from each other. The first tier implements a “user interface” that only contains the presentation elements, such as buttons, text boxes, labels, list boxes, etc. The middle tier is “business logic”. This tier contains all the business logic, functionality, workflows, access control, etc. The third tier is the “database management system”. It contains database related structures and functionality. 3-tier architecture brings us scalability, flexibility and enhanced maintainability on deployment. It is, then, possible to add as many components as needed. It only affects that particular tier and the rest of the application remains intact. Since tiers are independent and only the communication between them is important, it is easy to replace your existing database management system with another vendor, such as SQL Server with Oracle, or vice versa. Changes in business logic do not affect the other parts of the system. Your user interface will remain the same and your database structure will also be the same. You need only change the way you implement your business logic! You can easily replace Java with C# or C++ with PHP, and so on, without any obligation to rewrite the rest of the code in the other tiers. This presentation goes in depth illustrating various aspects of this topic.