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SWEN 603  
June 22, 2016

Unified Process Programming Methodology

The Unified Process (UP) development methodology made its mark primarily as the Rational Unified Process in the late 1980s. It was developed by Rational Corporation, a company acquired by IBM in 2003 (Taft, 2002). The terms Unified Process and Rational Unified Process are often interchanged and generally indicate the use of the Rational suite of software planning tools. Many of these tools are still in use today by IBM and are a regular part of the development environment used in major federal contracts. These tools allow software teams to collaborate through the four project life cycle phases of the RUP, 1. Inception, 2. Elaboration, 3. Construction, and 4. Transition. RUP is considered to be an iterative development methodology that allows for requirements to be revisited throughout time. The Rational suite outlines much of the methodology for software teams to follow in its path, while integrating concepts into their development environments.

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| --- | --- | --- | --- | --- |
|  | Inception | Elaboration | Construction | Transition |
| Business Modeling |  |  |  |  |
| Requirements |  |  |  |  |
| Analysis & Design |  |  |  |  |
| Implementation |  |  |  |  |
| Testing |  |  |  |  |
| Deployment |  |  |  |  |

Based on the visual, the Rational Unified Process touches on each of the primary activities of most lifecycle methodologies, from Business Modeling to the Deployment of the software product for the client. Each phase of the RUP is listed and can be followed from inception to finish of the overall project. Iterations of each of these steps occur within the columns in most of the graphics found online, whereas the graphic above simplifies this greatly to show the key elements that are addressed throughout each process of the framework.

Some of the benefits of the RUP include, 1. Its ability to be adaptable to the organization and project specific needs, 2. The tools provided to the software teams well outline the process with recommended process documentation, 3. There are many services available that make the adoption of the methodology slot into the development process well, and 4. Tools available to the team have expanded to include UML diagram and documentation tools developed by Rational corporation and sold by IBM. The Rational suite also includes tools for outlining user interface design and database mapping.

There are a set of core principles associated with RUP, of which help to guide best practices for the software team. The first core principle is that development should occur iteratively, with features broken down into smaller stories. The second is that requirements should be outlined and managed in a central location, this refers to any dependencies utilized by the team. The third principle is to follow an architecture which componentizes the aspects of the program. The fourth principle is to use visual aids to model the software program. The fifth principle is to perform testing throughout all processes. The sixth principle is in controlling changes made to the architecture, which can also best be described as integration.

All of these tools and principles make Rational Unified Process a very well documented and guided resource that has largely been kept internal to IBM since acquisition. This is perhaps where the disadvantage of RUP comes into play. Many of the processes and tools are now products of IBM. This requires outside corporations to purchase a license for use. Aside from the Open Unified Process, much of the enterprise oriented technologies are guarded as intellectual property of IBM. Fast forward to today, the RUP has grown to become the Agile Unified Process. This integrates the tooling of the Rational suite into an agile management style. The latest tool used internal to IBM is called the Rational Team Concert, which is commonly called the Swiss Army Knife of development planning tools within IBM management.

Rational Unified Process may not have the public and open source communities’ attention, but it does serve a very large role to this day in developing the most important web applications in government, homeland security, and defense.

References:

Taft, D. K. (2002, December 06). IBM Acquires Rational. Retrieved June 23, 2016, from http://www.eweek.com/c/a/Desktops-and-Notebooks/IBM-Acquires-Rational