

Enhancing IDEs with XP project management and automatic tracking capabilities

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1 Introduction and Motivations

Tracking is the critical activity of measuring the team's progress. The essence of tracking is the face-to-face contact and a couple of numbers per task. In fact, the tracker asks developers two questions about each task they signed up for: 1) How many ideal days have you worked on this? 2) How many more ideal days do you need before you've done?

The first question implies that each programmer should record how many hours he has spent on each task he subscribed for. This can be frustrating, especially when a programmer has underestimated the effort of collecting process data. In order to reduce the programmer overhead and increase the precision of data collected by the tracker, we propose to gather lots of data automatically. This could be done, for example, by integrating tools supporting an Extreme Programming process with Integrated Development Environments (IDEs). In section 2, we present the integration³ between XPSwiki⁴[1] (a tool supporting XP, developed by our research group) and the IDE IntelliJ IDEA⁵.

Why integrate an XP supporting tool with an IDE? Many applications exist to aid project management, supporting planning, tracking and report generation. Besides XPSwiki, many tools, free or open source, are available, like XPlanner⁶, MILOS-ASE⁷, XPWeb⁸ and TWikiXpTracker⁹. Unlike the other ones, XPSwiki and XPlanner define a SOAP interface to access via Web their data in an efficient and language independent way.

So far, XP project management tools have never been integrated with any development environment. But why integrating them? We may cite the following advantages:

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⁴ <http://www.agilexp.org/xpswiki>

⁵ <http://www.intellij.com/>

⁶ <http://www.xplanner.org>

⁷ <http://sern.ucalgary.ca/~milos/mase/M-ASE.htm>

⁸ <http://xpweb.sourceforge.net>

⁹ <http://twiki.org/cgi-bin/view/Plugins/XpTrackerPlugin>

- The IDE measures and suggests how much time you have actually spent working on a task. This can be taken at least as a starting point for a personal estimate that will additionally take into account the time spent consulting documentation, investigating the problem, etc. . .
- Viewing stories, tasks and the project advancement directly into the IDE allows programmers to view process data without opening a web browser to connect to the project management tool
- A better knowledge of the project as a whole is spread among programmers
- XP beginners find easier to understand XP roles and concepts if directly presented inside their favorite tools

2 Integrating XPSwiki and IntelliJ IDEA

The communication between XPSwiki and IDEA is based on SOAP protocol. XPSwiki implements a SOAP interface through which IDEA can access entities involved in an XP process, like User Stories, Tasks, Acceptance Tests and so forth. On the client-side, a plugin running on IDEA sends SOAP requests and analyzes XPSwiki responses. In this way, it can provide the developer information about User Stories and Tasks, like their description, estimated effort and state of advancement. Moreover, it displays artifacts created during a certain Task, distinguishing among source code, unit tests, customer tests, documentation, by means of a GUI coherently integrated with the development environment. In addition, it measures how long each programmer works on a specific task, automating in such a way the tracking activity. From the management point of view, data gathered in such a way are more accurate and detailed, giving a more effective control on the project. The automatic recording of development activities allows the production of periodical reports about the project advancement, helping to establish a quality management system. The integration of process specific information into development environments increases the involvement of programmers on the project, thus improving team harmony and motivation.

Privacy Issues and Workers' Rights Tools such as those described here could damage the rights of workers. As an example, Italian legislation bans the use of automatic control instruments in the workplace, even with the approval of interested parts, except for those ones that have effective systems for data obfuscation. On the other hand, the XP process depends on a strong assumption of responsibility by the developers about the evaluation and the progress of the tasks. However, the implications of the techniques described and the study of feasible alternatives are beyond the scope of this preliminary job and require more deepened reflections.

References

1. Sandro Pinna et. al, XPSwiki: An Agile Tool Supporting the Planning Game. In: Proceedings of XP2003, Italy, May 25-29, 2003, pp. 104-113.