

SPAD

Specification, Planning, Architecture & Design

By Randy Charles Morin

There is no line in the sand that tells us if an individual is a software developer, a programmer or a hacker. I've known many individuals who were and are simply programmers and hackers who were and are Directors, VPs and CTOs. It's not like someone is handing out software developer professional designations that allow hiring managers to determine if they are truly hiring a software developer or just another hacker.

But what is the difference between a software developer and a programmer and even a hacker. The difference is SPAD, specification, planning, architecture and design. Both software developers and programmers can write code, but only a true software developer writes code by first specifying, then planning, then architecting, then designing and finally coding. I'll leave out testing for the meanwhile, but that too is an important part of the software development process.

The lack of SPAD in almost every software development project is a real indication of the lack of maturity that exists in the software development profession. I've read countless books and been instructed countless times to write software development plans, architecture documents and design documents. I've done so myself, countless times. But I've yet never read a software development plan for any project that I worked on, that wasn't written by myself. Neither have I ever read an architecture document not written by myself.

I've read a few design documents that were not written by myself and most of them were written by developers who report to me and who were instructed by me to write them. I've also read a few specification documents, but most of them again were completed well after the design and even after the coding and testing were complete.

Don't think that I've advocating the waterfall methodology. Not at all. The waterfall methodology of software development is not efficient in today's RAD (rapid application development) business models. Rigidly following such a methodology often will lead to 50% to 100% overruns on estimated costs and lengthy development cycles that cause the business to miss the boat.

Specification

A common joke in software development is when the product manager tells the programmer that it's a bug because the feature isn't implemented as per his specification. The programmer responds, "What specification?" Quite often, the specification doesn't exist, other times it's an email that the product manager sent and even other times it's the specification that was completed after coding and testing.



Think of the specification as the customer's order form. In fact, the specification is an order form that is given from the product management team to the development team. If you fail to correctly specify the product, then it will cost you more. Get the order right and you will make everybody happy.

I won't address what a good design is and how to minimize flaws in your design, but I will point out that documented and reviewed designs have fewer flaws than undocumented and unreviewed designed. What this means, is that developers should make an effort to write down their designs and have them critique by their peers.

There are countless tools on the market that help you design components. The two most popular are Visio and Rational Rose. Both use a popular technique called UML that rigidly structures the design process. I'm not a fan of rigid techniques, but UML is quite useful. In particular, Use Cases, Class, Statechart and Sequence diagrams I have found very useful in documented the design of a component. But don't lose yourself in the rigidity of UML and feel free to write your own ad-hoc diagrams, if they better describe your design.

Conclusion

I'm not saying anything new in this document. What I've said has been said several times before. And yet, software developers around the world continue to ignore SPAD. Or should I say programmers ignore SPAD. True software developers don't ignore SPAD. Are you a software developer? Or a programmer?