

"Base template details - Not to be changed"

Template Id	Template Name	Version No.	Release Date
TMT025	Training Manual Document	1	DD/MM/YY

White Paper

GENERAL_2016_QUALITIES_OF_SOFTWARE_PROFESSIONALS_001.V1

[Document Related To]

Amendment sheet

Version No.	Release Date	Modified by Date	Reviewed by Date	Authorized by Date	Remarks
1.0		Resource DD/MM/YY			Initial Version

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Introduction

A profession is a disciplined group of individuals who adhere to ethical standards and possessing special knowledge and skills from research. A professional is a member of a profession governed by codes of ethics. Professionalism comprises the personally held beliefs about one's own conduct as a professional. It's often linked to the upholding of the principles, laws, ethics and conventions of a profession as a way of practice. Professionalization is the pattern of how a profession develops, as well as the process of becoming a profession.

Software is a general term for the various kinds of programs used to operate computers and related devices. Engineering is about infrastructure. Engineers identify a problem, and come up with a solution – often creating something completely new in the process. Software Engineering is the application of engineering to the design, development, implementation, testing and maintenance of software in a systematic method. A software engineer is a licensed professional engineer who is schooled and skilled in the application of engineering discipline to the creation of software. A software engineer is often confused with a programmer, but the two are vastly different disciplines.

Characteristics of a Professional

Once you enter the world of professional software engineering and the dust settles down, you find the rules of the game are not exactly what you expected.

Passion

All great software engineers have a passion for giving solutions to variety of complex problems. It is in their nature to give solutions and they do not back down from challenges. Let's face it, software engineers have either just finished solving a problem or are in a problem or heading towards a problem. So you need to have passion to find solutions to these problems. The solutions could be a software design, an analytical / logic design or a code change.

Desire to learn

Any software engineers, they desire to grow and expand their skill set as well as understand what their giving their software solution for. In order to do this a software engineer needs to have burning desire to learn. The technologies in the industry are changing ever so rapidly that it is extremely hard to keep up, but as engineers it is expected.

Discipline

A true software engineer is totally focused and disciplined. Discipline is the difference between a cowboy and a seasoned engineer.

To end what you start – You need to make sure that you complete things that you start, otherwise you will have foundations laid down all over but no building to show for that.

To look before you leap – You need to think and see what are the consequence of doing something before doing. My metaphor for this is “Read the README before running the Software”.

Learn from your mistakes – You need to be discipline enough to document what went wrong with each project and see how you can improve on this. Most of the time I have seen engineers make the same mistakes over and over again. This leads to loss of credibility and potentially damaging projects.

Flexibility

A software engineer should be flexible enough to adopt change. They should be able to learn and see what the current situation requires and becomes the very agent that provides the solution. Now you may choose to master an area of expertise, but you should not get locked to any. The more flexible you are in changing yourself to the current needs of the industry the better solutions you can give and more you will be valuable to the industry.

Enjoy

The last but the most important attribute I have seen by solid and successful engineers is that they enjoy being a software engineer. They love and thrive on the solutions that they give and what they are called upon to do.

Qualities of Software Professionals

A good software must have technical skills and personal traits.

Technical Skills

A framework is simply a set of libraries that are used to develop code on a particular platform or on multiple platforms. It usually makes common programming tasks on that platform easier. A professional software should have following technical skills.

Basic Computer Science Skills: The ability to know how to use library functions, and understanding computing problems, design patterns, and frameworks are other skills that are valuable to have. A great class involves students and helps them to develop skills in logical thinking, creative problem-solving and communication. Classes that incorporate a team approach, requiring clear communication among members as they solve a problem and explain their solution to others, enables graduates to work this way at their jobs.

Passion for Code: Programmers must have a passion for code, developing it from a purely scientific skill into a craft or an art. Building code is much like developing a painting, a sculpture, or a symphony. With the popularity of Open Source, you don't have to be alone in code creation. The ability to work with software engineers and developers from around the world is possibly through the Internet.

Fearless Refactoring: Refactoring is the ability to improve code without changing what it does. The ability to realize that no one should be a slave to original code is key here. That old code can become unstable and incompatible over time. Refactoring enables the developer to own the code, instead of the code owning you.

Develops Quality: Experienced engineers know and understand the value of tests, because their goal is to create a working system. Exposing bugs and eliminating them is the best way

to develop stellar code. But a good engineer also knows not to waste time writing trivial or redundant tests, instead focusing on testing the essential parts of each component.

Willing to Leverage Existing Code: Reuse of internal infrastructure, use of third-party libraries, and leveraging web-scale services such as the ones offered by Amazon, are marks of a software genius.

Focus on Usable and Maintainable Code: Good engineers work hard to make the system simple and usable. They think about customers all the time and do not try to invent convoluted stuff that can only be understood and appreciated by geeks. A disciplined engineer thinks about the maintainability and evolution of the code from its first line, as well. Expressive names for methods and variables can make the code self-explanatory.

Can Code in Multiple Languages: A willingness to learn new languages, new libraries and new ways of building systems goes a long way to creating a great software engineer.

Personal Traits

Personality traits are distinguishing qualities or characteristics that are the embodiment of an individual's. They are your habitual patterns of behavior, temperament and emotion. Skills, on the other hand, are the learned capacity to carry out specific tasks. A professional software should have following personal traits.

Vision: Visionaries create code and libraries that are open to refactoring, and easy to use in all code languages. Being able to see the impacts of present-day decisions is paramount to building great software.

Attention to Detail: Software professionals probably try to avoid those issues yourself. Bad installation packages, sloppy deployments, or a misspelled column name can bring down entire systems. Be obsessive about details, and you'll be on your way to becoming a software star.

Curiosity: The best software engineers are curious about why something is done one way or another, yet with the added ability of being objective about the solutions. Many engineers we know got in trouble as kids for taking things apart to see how they worked. Putting together software is just a creative, and many software engineers also have artistic hobbies. This creativity and curiosity is required to think outside the box when designing programs. The thrill you get from making something work is what keeps you going.

Experience: If you've been tinkering with software programs since you were a kid, your abilities as an adult will be quadrupled. Beyond hands-on experience, you might also be addicted to math and science, and the ability to stay organized. At the same time, great software engineers also realize that they don't know it all...the ability to continue to learn is essential in a field where change is a constant.

Discipline: Although you may have passion for your job, this love for your work and for the next project doesn't mean that you can be sloppy. Attention to detail is important, but so is an ability to stay organized. So much bad code belongs to developers who don't do what they know should be done.

Patience: Bugs are natural. Design glitches are normal. Sloppy coding by other engineers occurs often. Patience is a key quality for software engineers who want to work in this field.

Teamwork: Software professionals are working as a team online or in the office can only produce stellar projects. Successful engineers also become good communicators. They know how to write clear and concise reports and instructions, and know how to convey ideas to clients and customers.

Self-Organization

Self-organization is important personality skills and it will become a good software professional. Self-organized persons are planned and measured to his/her works in earlier and also they analyzed their outcomes. The self-organized people are having following self-achieving skills.

Goal Setting: They THINK before they act. They think out what they are going to do, how they will accomplish it and when they are going to do it.

Make a List: They have lists that they keep track of everything that they plan on doing for every job they are going to get finished and how they will do it

Keep a Calendar: In a prominent place in their home is a calendar so they don't forget appointments; meetings etc. and have a view of where and when anyone in the home will be on any given day.

Pick your Priority Jobs The jobs that are the most important get tackled first, this helps to relieve the stress and the less important jobs are a breeze to go through.

Get Rid of Clutter: This can be junk lying around the house, too many things listed on your schedule of places to be or too many things to remember and fill up the old brain.

Take a Break: Organized people do not have to schedule 'fun times' in their lives. They seem to be able to take the day off from home drudgery and enjoy themselves.

Make life Simple: Get rid of all of the excess things that control your life and go back to the simple part of life. Too many meetings; get rid of some. Too many chores; look for faster and easier ways of getting the job done.

Create a Routine that becomes a Habit: The hint is to make it one that can be modified. Most of us have daily routines but get confused when something seems to upset that routine. If you are organized, a routine is nothing more than a guide and can be changed when need.

Conclusion

Though this paper is a good start at better understanding professionals characteristics and qualities of skills for software professionals. The combinations of attributes that are interesting and it will make good software professionals. I result of this research in any professionals, they have both personality and his/her technical(domain, profession) skills. Give yourself the time for fun, time to relax and the feeling of an organized life by taking a good look at the clutter in your life and become an organized person.

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