



# **So you want to Become a Software Developer !**

*-What Makes a Good Software  
Developer/Programmer ?*

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# Productivity Differences between Good and Bad Programmers

*In a study of 12 Experienced Programmers*

- *The best programmers finished coding and debugging a problem **28 times faster** than the worst programmers .*
- *The best program in the study was roughly **10 times more efficient** than the worst*



## Productivity Differences between Good and Bad Developers

Thus, the difference between quality, productivity and the ability to meet schedules varies, *at least by an order of magnitude* between the **BEST** and the **WORST** Software Developers



# Experience & Performance

*Also, Programmer Experience has been found to have **little correlation** to his Performance.*



# Experience in Tenberry Software

- *One Engineer was consistently producing work with **defect rate more than 100 times smaller** than other developers.*
- *She has done so for over 3 years.*
- *During the same time she has produced **3 to 5 times as much code** as any other developer.*

- Terence Colligan, Tenberry Software.



*So, What Do **Best** Software  
Developers/Programmers Do  
Differently than Bad/Average  
Software Developers/Programmers?*



# **What are the Characteristics of Best Programmers ?**



# Humility

- *The People who are Best Programmers are People who realize how small their brains are*
- *Hence, Best Programmers a Humble*
- *The Worst Programmers are people who refuse to accept the fact that their brains are not equal to task. Their Egos keep them from being Great Programmers*



# Curiosity

- *Best Programmers have a genuine interest and knowledge of a variety languages, technologies*
- *Most Programmers are so busy working that they don't have time to be curious. DON'T FALL INTO THAT TRAP*



# Intellectual Honesty

- *Best Programmers know their limitations. They refuse to pretend that they are experts, when they are not*
- *Best Programmers readily admit their mistakes*
- *Best Programmers try to Understand a compiler warning rather than suppressing the message*
- *Provide realistic schedule estimates and stick to those estimates*



# Communication and Cooperation

- *Best Programmers are Good Communicators at all levels*
- *Best Programmers write readable code. In fact, Best Programmers write code for other programmers first and for Computers second*
- *You rarely need to ask them to explain, how a piece of their code works*



# Creativity and Discipline

- *Best Programmers don't waste creativity on things that don't matter. They establish conventions on non critical areas and then strictly follow the conventions.*
- *He always designs before he codes, and checks his designs with the appropriate people*
- *He looks for simplicity in design, rather than clever technical solutions*



# Laziness

- *Best Programmers write tools to do the repetitive unpleasant tasks so that they don't have to do it again*
- *Best Programmers try to maximize Reuse (of code, tools, ideas, design, etc.)*
- *Best Programmers don't write everything in C++, they write scripts to small repetitive tasks.*



# Good Habits

- *Best Programmers first learn/do something, they try to learn/do it right way.*
- *Good Habits matter, because most of what you do as programmer, you do without consciously thinking about it.*
- *Over time your habits determine if you are good or bad programmer. Make sure that habits that take over, are the ones you want to have*



# Why Say this Now ?

***Any Programmer, Who Will Ever Be Good, Is Good in First Few Years.***

***-Bill Gates, Microsoft***

**After that , whether a Programmer is Good or Bad is cast in concrete**