

# Producing Quality Software

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This presentation explains how to produce quality software.

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# Outline

1. What is quality?
2. Influencing behavior
3. Promoting quality

## 1. What is Quality?

# Producing Quality Software

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# Producing *Quality* Software

## What is Quality? (Philosophical)

Quality ... you know what it is, yet you don't know what it is. But that's self-contradictory. But some things are better than others, that is, they have more quality. But when you try to say what the quality is, apart from the things that have it, it all goes poof! There's nothing to talk about. But if you can't say what Quality is, how do you know what it is, or how do you know that it even exists? If no one knows what it is, then for all practical purposes it doesn't exist at all. But for all practical purposes it really does exist.

*Zen and the Art of Motorcycle Maintenance*

# What is Quality? (Practical)

The final definition, “quality equals fitness-for-purpose” is one of the most commonly used ..., and rightly so, because it subsumes all the rest.



# Why Should You Care?

Quality represents various desirable aspects of software, and you will be judged on these qualities:

- Efficiency
- Reliability
- Completeness
- Ease of use
- Performance
- Fitness of purpose

# You Will Be Compared to Your Competition



Open source software is known for its quality.

## 2. Influencing Behavior

### Operant conditioning

	Not Desired	Desired
Reinforcement	-	+
Punishment	+	-

[https://en.wikipedia.org/wiki/Operant\\_conditioning](https://en.wikipedia.org/wiki/Operant_conditioning)

## Typically Only Two Quadrants Are Used

	Not Desired	Desired
Reinforcement		+
Discourage	+	

Not all quadrants can be controlled equally.

# Take a Vacation

	Stay Home	Vacation
Reinforcement	save money	new experiences
Discourage	wasted days	risk

# Flight Attendant Promptness

	<b>Late</b>	<b>On Time</b>
<b>Reinforcement</b>	home/family	salary/awards
<b>Discourage</b>	loss of income/job	others late

Home/family was a driving reason for lateness.

# Producing Quality

	Low	High
Reinforcement	other projects	accomplishment/recognition
Discourage	loss of income/job	apathy about quality

Quality is notoriously hard to control by management because it is not easily detected by those not working on the software, and can appear to users only months later.

### 3. Promoting Quality Software

First, promote the value of quality software in the company via its:

- Value to end users (listed previously)
- Increased customer satisfaction and sales opportunities
- Simplified software support
- Simplified services engagements
- Increased professional skills and recognition
- Greater job satisfaction, “Complete the job successfully”



# Increase Activity to Promote Quality

- Reward high quality
- Discourage/punish low quality

## Decrease Forces that Discourage Quality

- Reduce demands from other projects that prevent quality results
- Reduce apathy about quality
- Reduce focus on arbitrary goals that ignore fit-for-purpose quality

# Conclusion



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