Mindfulness in Software Engineering

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What is Mindfulness?

"Mindfulness involves intentionally bringing one's attention to the internal and external experiences occurring in the present moment."

Baer, Ruth A. (2003). "Mindfulness Training as a Clinical Intervention: A Conceptual and Empirical Review"

Why?

- Help deal with stress and anxiety.

- Worry less about the past and future.

- Enjoy the here and now.

Techniques for Mindfulness

- Meditation.

- Use your breath as an anchor.

- Focusing on the present moment.

- Can do this anywhere.

- Great apps available. E.g. Smiling Mind
https://www.smilingmind.com.au/smiling-mind-app

https://twitter.com/janmarshmellow/status/792383608002519040/photo/1

Bad Habits in Software Engineering

- Trying to solve a problem in one go.

- Thinking too many steps ahead.

- Implementing functionality or a high-level design before it is required.

https://vincetheanomaly.com/blog/2015/8/9/zeigarnik-effect
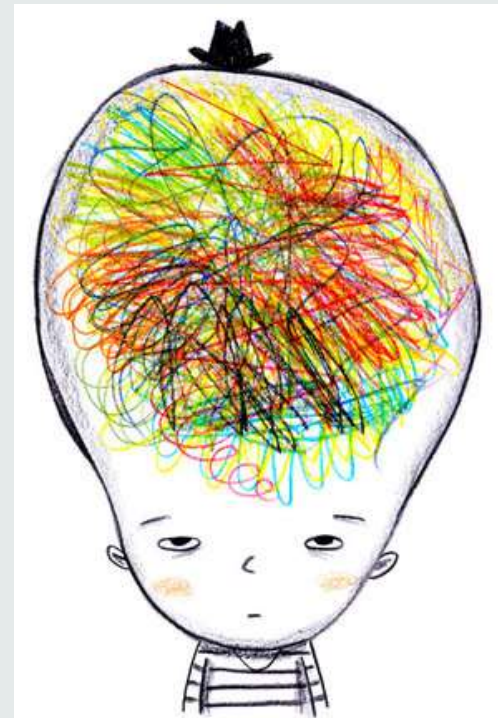
HOLD YOUR HORSES!

Mindfulness in Software Engineering

- Test Driven Development (TDD)
- Transformation Priority Premise (TPP)
- Mindfulness for pair- and mob-programming

https://www.horsejournals.com/riding-training/western/reining/rhythm-cadence-reining-horse

Test Driven Development

- Developing software mindfully.

- Focus on one behaviour at a time.

- Small increments of functionality.

- Existing tests take the anxiety out of refactoring.
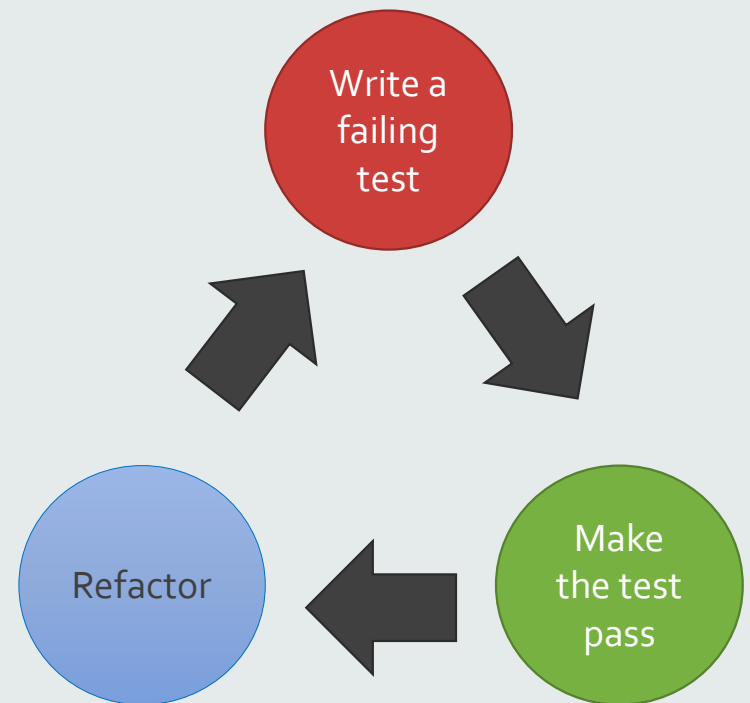
Write a failing test

Make the test pass

Refactor

Test Driven Development

How do you evolve your code through this process?

1. Fake implementation.

2. Obvious implementation.

3. Triangulation.

Test Driven Development

How do you evolve your code through this process?

1. Fake implementation.

2. **Obvious implementation. What is this?**

3. Triangulation.

Transformation Priority Premise

- Helps define the obvious implementation.

- Refactoring mindfully.

- A table of code transformations ordered by complexity.

- Focus on the least complex solution to make a test pass.

- Can be tailored to your team.

- Small increments in complexity.

Transformation	Initial code	Transformed code
{} -> nil		`return null`
nil => constant	`return null`	`return "1"`
Constant =>	`Return "1"`	`return "1" + "2"`
…	…	…

Mindfulness in Pair- and Mob-Programming

- Get the most out of working together.

- Focus on the current task.

- Be present and concentrate on your role.

- Really listen to your team members.

- Do you have a great idea?
  - Do not break mob's concentration.
  - Remember the idea or write it down.
  - Bring it up later.

https://imgflip.com/meme/67516948/South-Park-Mob

Mindfulness in Software Engineering

- Less stress.

- More fun.

- Helps to produce more effective and maintainable code.