

INTRODUCTION TO

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# REFACTORING





# WHAT IS REFACTORING?



A black and white photograph of three wind turbines against a cloudy sky. The largest turbine is in the foreground on the left, with two smaller ones in the background to the right.

# THE DISCIPLINED APPLICATION OF A SERIES OF SMALL, BEHAVIOR PRESERVING TRANSFORMATIONS

**I NUKED THE CODE FROM ORBIT AND  
REFACTORED IT UTTERLY. SEEMS LEGIT  
BUT I HAVE TO TEST IT CAREFULLY.**

**An unnamed developer**



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# WHY REFACTOR?

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# REFACTORING'S VALUE PROPOSITION IS ECONOMIC

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**IT IS NOT TO MAKE THE CODE PRETTIER OR MEET YOUR DESIGN PREFERENCES!**



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# WHEN DO I REFACTOR?



**ALL THE TIME!**

# ALL THE TIME!

But in tiny bursts

# HOW DO WE DO IT?



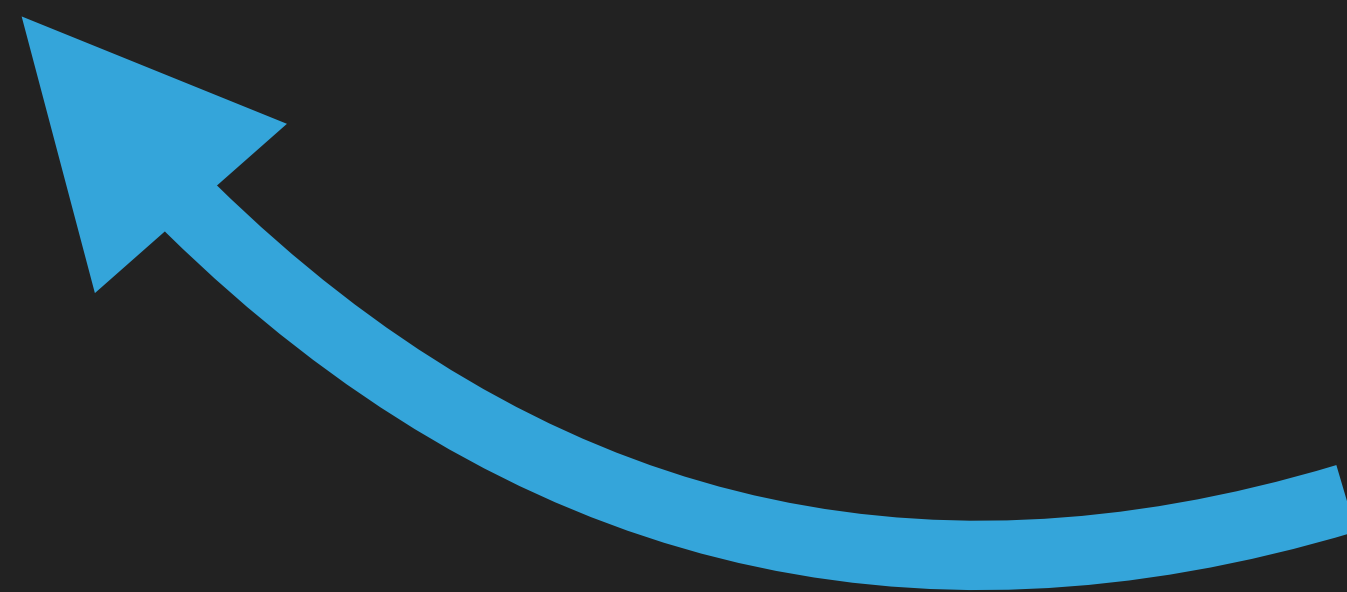
**FIND A CODE SMELL**



**RUN TESTS**



**APPLY A TRANSFORM**







# CODE SMELLS





# A SURFACE-LEVEL INDICATION OF AN UNDERLYING PROBLEM

**Think about diapers**



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# CODE SMELLS

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- ▶ Mysterious Name

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# CODE SMELLS

- ▶ Mysterious Name
- ▶ Long Method



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# CODE SMELLS

- ▶ Mysterious Name
- ▶ Long Method
- ▶ Duplicate Code

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# CODE SMELLS

- ▶ Mysterious Name
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- ▶ Switch Statements

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- ▶ Complex Conditionals

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- ▶ Data Class