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What is code smell?



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Christophe Grosjean, born to code

Updated Nov 19, 2014 · Upvoted by Miguel Paraz, professional Java programmer since 2002



As far as I know (maybe Kent can confirm) The word code smell was proposed by Kent Beck when contributing on the book [Refactoring](#) by Martin Fowler.

Experienced programmers can often glance at beginner's code and point out a bug. This is because some problems does not need deep understanding of code, just a local understanding.

Code smells are similar, but does not imply some outright bug, merely poor structure. Things like **this function need to know too much about the outside**, or **this function is too long**, or **why do you unpack this object before passing**

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likely this function should be a method of the accessed object, *etc.*

Other cases easy to spot at a somewhat larger scale, like repeated patterns.

Obviously seeing repeated (copy pasted ?) code is a smell. If before calling some function you always put the same lines, these lines probably belong to the function. If two classes implement list of functions very similar may be this classes should inherit of some common ancestor, or even be merged ?

Other smells are of a more dynamic kind, like when you want to change a minute implementation detail you have to change (too) many things in some object... some abstraction layer is probably missing.

Summarily code smells are a kind of list of recipes you can go through saying:

- **if you see this** (local property easy to spot without deep code understanding) **you should probably perform that refactoring** (specific code change not needing deep code understanding either).

Many lists of code smells are available online and reading them is probably the best thing to do to understand what are code smells.

I like this one: [Code Smell](#) because it is thoroughly detailed and commented and usually points to proposed refactoring (often from Martin Fowler).

Of course, it's not always true and some code smells may conflict with each other (you fix one, but introduce another one). Also the initial list was corned in

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Tim Mensch, Freelance CTO/Software Architect

Answered Feb 26, 2017



Human brains are fine tuned pattern matching devices. When you've spent years dealing with code, fixing code, refactoring code, finding bugs in code, and generally making things work, you acquire a *lot* of patterns.

Some of those pattern memories are indicative of happy times the code worked the way you needed it to. Some of the memories were of code that was hard to get working correctly, or hard to understand.

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Code smell is not entirely consc... [\(more\)](#)



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Ian Brown, Senior software developer, jack-of-all-trades programmer

Answered Feb 26, 2017



Originally Answered: What does code smell mean?

Code smells are not usually a bug in the sense that code doesn't work, but rather, a case where the code could (and probably should) be better. The code can be awkward to use, possibly hard to read or understand, maybe unnecessarily complicated or convoluted.

For example, the use of the GOTO statement has long been discouraged because there are better ways to accomplish the same thing (aside from terminating loops as now performed using a BREAK statement). Code containing GOTOs would generally be considered a code smell.

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Tim Mensch

I disagree that "using goto" is necessarily a code smell. There's certainly a lot of bad ...



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Andrew Spina, Loves giving orders to machines

Answered Sep 13, 2014



One important part of code smell is that it is aesthetic. You feel it before you understand it. Eventually you may be able to explain the feeling according to rules, but really it's about a sense for the craft of writing code and recognizing the beauty or horror of the code you see.

When there is a bad smell, it's because the code is doing something wrong. Once you find a bad smell, then it's time to figure out how to fix it. That is when rules, design and refactoring come in to play. They are like deodorizers.

Because this is a judgement that comes from a sense of beauty, different peopl...
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Gregory Currie, Australian C++ programmer

Answered Sep 2, 2014



Imagine code is like food. You open the fridge, pull out some food. It looks alright, it appears to be good but it smells a little funny.

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not quite right. You can use the code, but maybe you'll spend the night on the toilet.

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