

# Code Style

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Lecture #22 out of 24  
80 minutes

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BRIAN KERNIGHAN

“The harder it is for people to grasp the intent of any given section, the longer it will be before the program becomes operational. Trying to outsmart a compiler defeats much of the purpose of using one. Write clearly — don’t sacrifice clarity for ‘efficiency.’”

— Brian W. Kernighan and Phillip James Plauger. *The Elements of Programming Style*. McGraw-Hill, Inc., 1974

## Which One Is Better?

```
1 int f(int n)
2 {
3     if (n == 1 || n < 2)
4         return 1;
5     int r = f (n-1);
6     int r2 = f(n - 2);
7     return r +r2;
8 }
```

```
1 int fibonacci(int n) {
2     if (n <= 2) {
3         return 1;
4     }
5     return fibonacci(n - 1)
6         + fibonacci(n - 2);
7 }
```



HENRY LEDGARD

“An individual’s body language helps clarify the spoken word. In a similar sense, the programmer relies on white space—what is not said directly—in the code to communicate logic, intent, and understanding.”

— Robert Green and Henry Ledgard. Coding Guidelines: Finding the Art in the Science. *Communications of the ACM*, 54(12):57–63, 2011

**Figure 9. Examples of K&R, ANSI, and Whitesmiths coding styles.**

```
if (expression) {  
    statements  
}
```

```
if (expression)  
{  
    statements  
}
```

```
if (expression)  
{  
    statements  
}
```

Source: Robert Green and Henry Ledgard. Coding Guidelines: Finding the Art in the Science. *Communications of the ACM*, 54(12):57–63, 2011

## My Favorite Style Checkers

- Qulice for Java (Checkstyle + PMD)
- ESLint for JavaScript
- Clang-Tidy for C++
- Pylint for Python
- Rubocop for Ruby
- PHP\_CodeSniffer for PHP
- rustfmt for Rust

## How Many Rules in Style Checkers?

- 690+ in Clang-Tidy (C++)
- 550+ in Rubocop (Ruby)
- 400+ in PMD (Java)
- 130+ in Checkstyle (Java)
- 120+ in Pylint (Python)

Some/most of the rules no only check style, but also find bugs

## Some Exotic Style Checkers

- Shellcheck for Bash
- markdownlint for Markdown
- Checkmake for Makefile
- xcop for XML



# References

Robert Green and Henry Ledgard. Coding Guidelines: Finding the Art in the Science.

*Communications of the ACM*, 54(12):57–63, 2011.  
Brian W. Kernighan and Phillip James Plauger. *The Elements of Programming Style*. McGraw-Hill, Inc., 1974.