Tips for generating clean and readable code

Brad Duthie

14/20/2020

Why is writing readable code important?

"If the code runs successfully, who cares how it looks?"

Why is writing readable code important?

"If the code runs successfully, who cares how it looks?"

"I won't edit your code, so I don't care what it looks like." (true)

Why is writing readable code important?

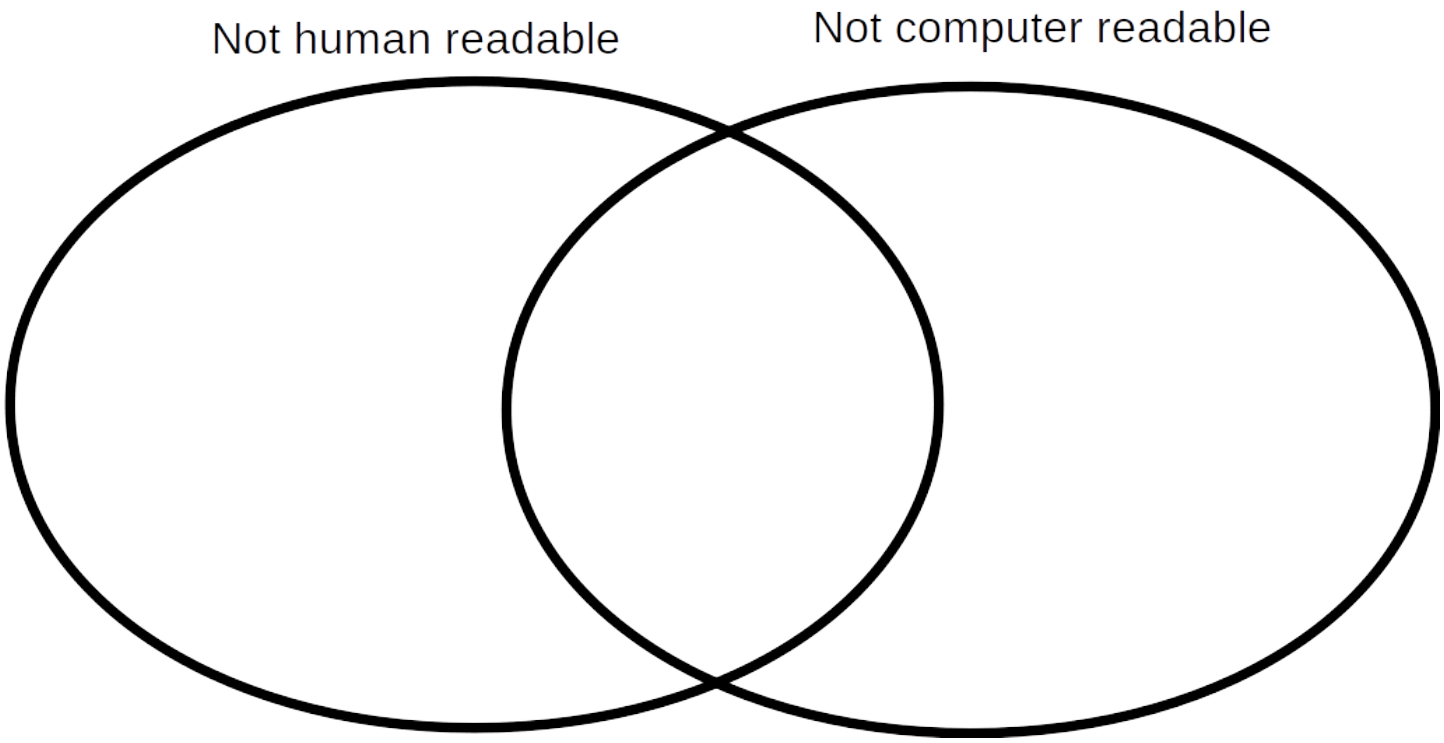
"If the code runs successfully, who cares how it looks?"

"I won't edit your code, so I don't care what it looks like." (true)

"It's frustrating enough just getting the code to work, so I shouldn't feel bad about writing code that doesn't look good." (**very true**)

Why is writing readable code important?

"If the code runs successfully, who cares how it looks?"

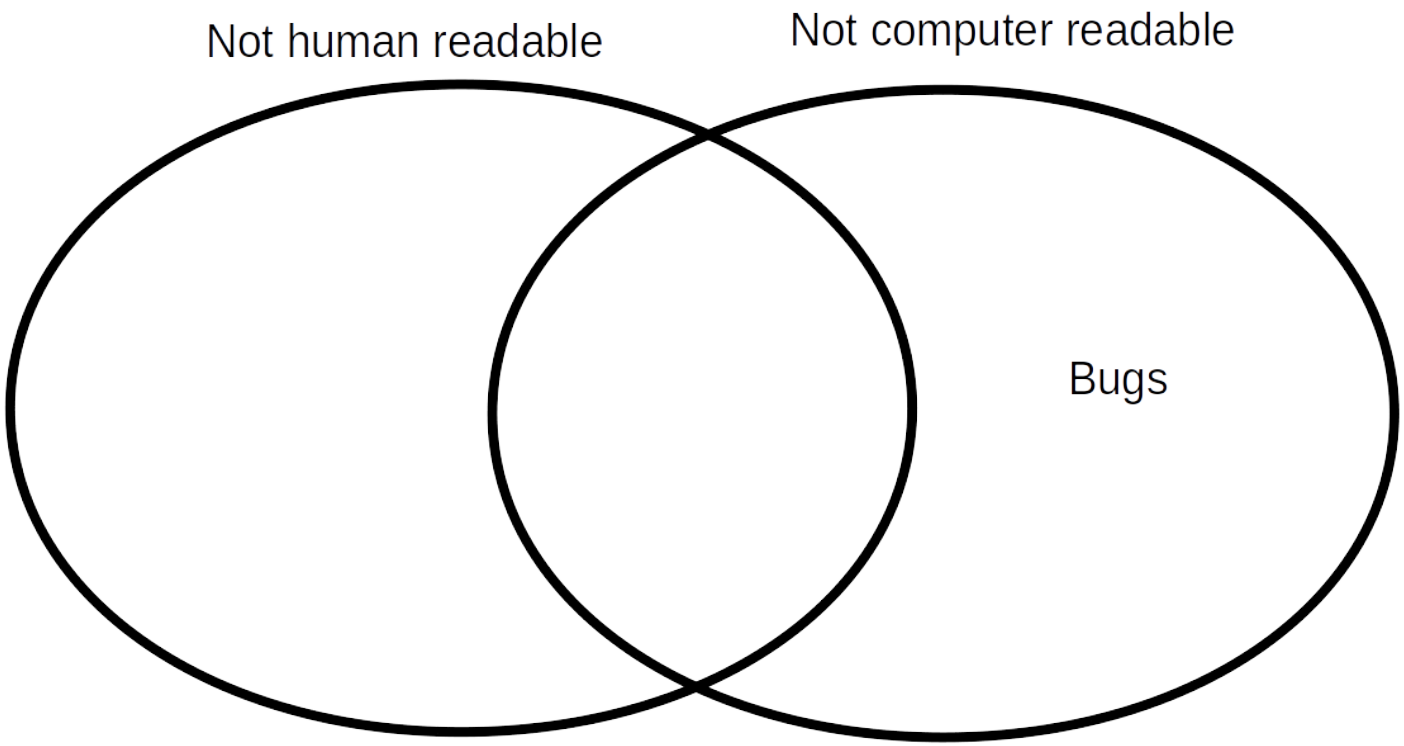


"I won't see your code, so I don't care what it looks like." (true)

"It's frustrating enough just getting the code to work, so I shouldn't feel bad about writing code that doesn't look good." (**very true**)

Why is writing readable code important?

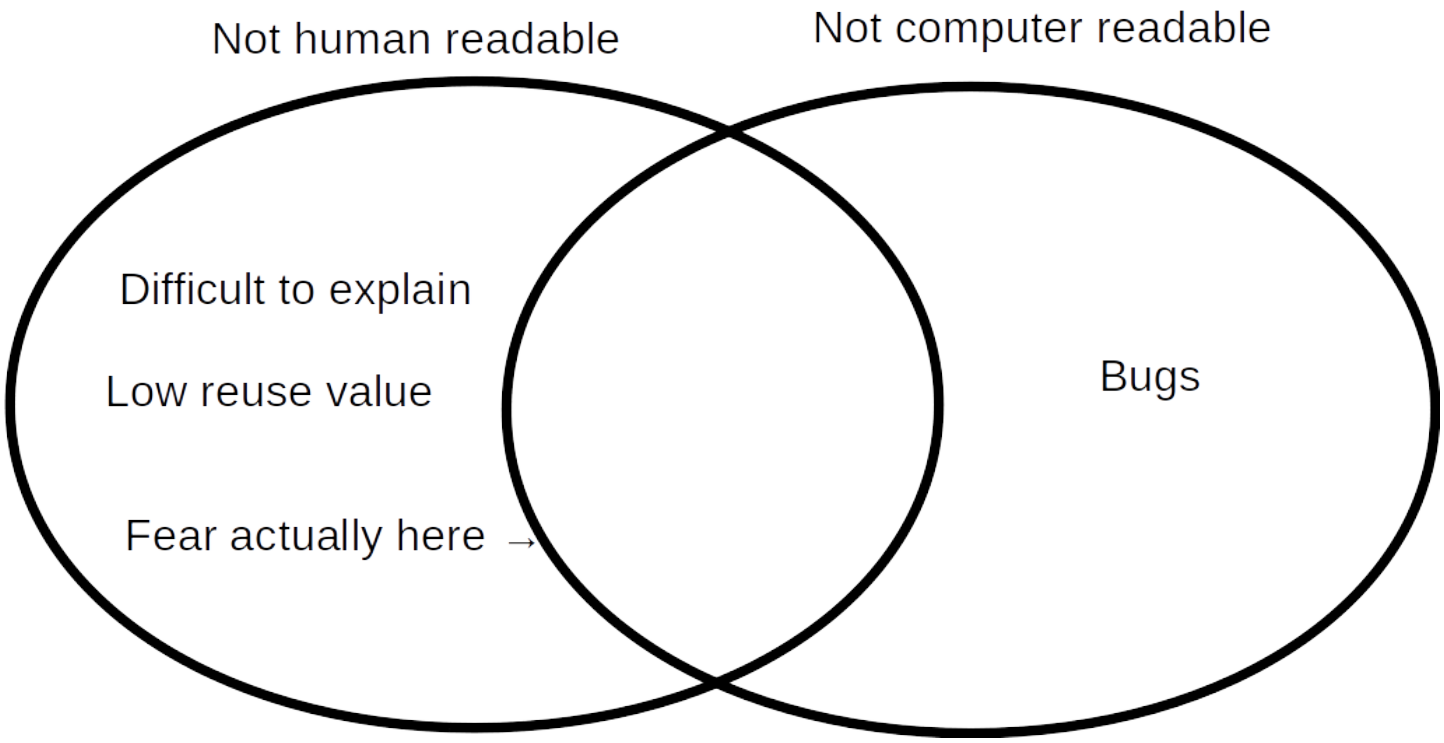
"If the code runs successfully, who cares how it looks?"



"I won't see your code, so I don't care what it looks like." (true)

Why is writing readable code important?

"If the code runs successfully, who cares how it looks?"

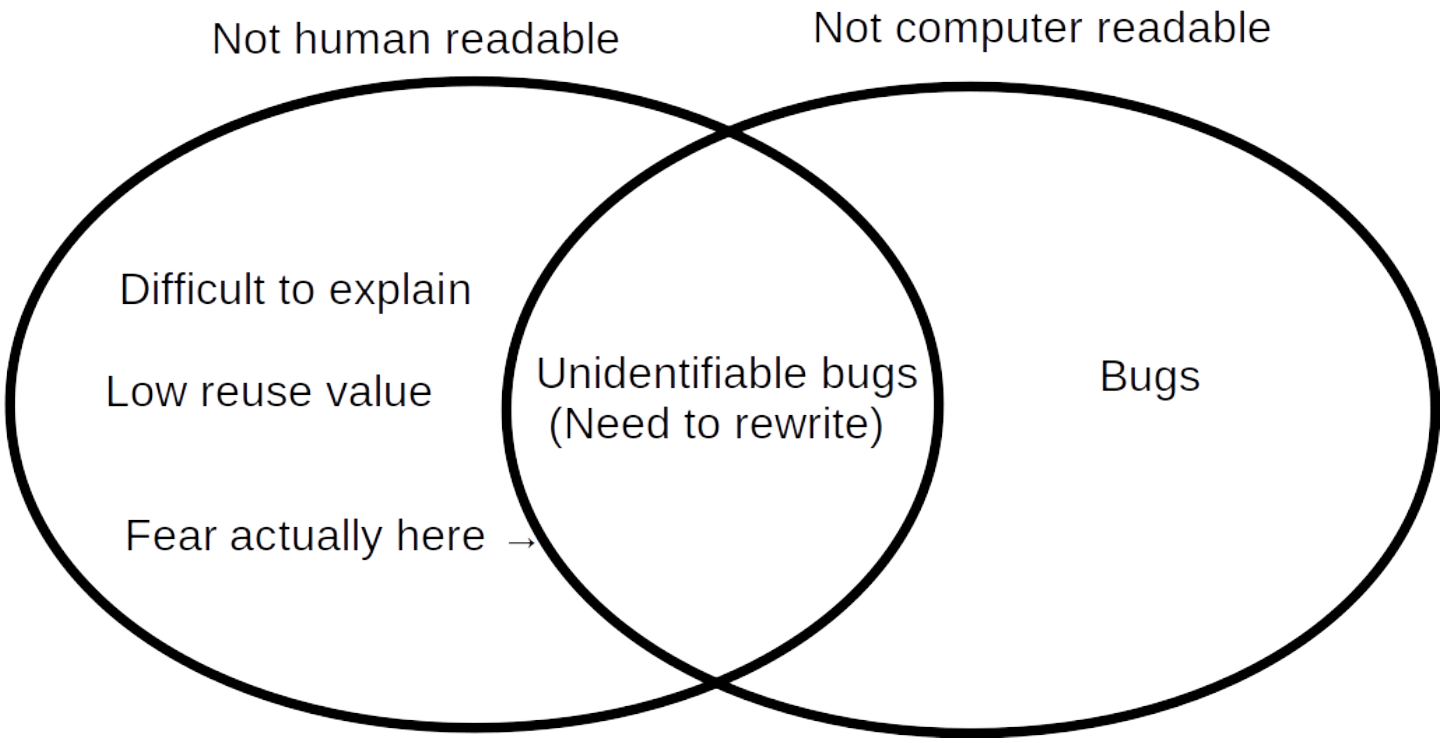


"I won't see your code, so I don't care what it looks like." (true)

"It's frustrating enough just getting the code to work, so I shouldn't feel bad about writing code that doesn't look good." (**very true**)

Why is writing readable code important?

"If the code runs successfully, who cares how it looks?"



"I won't see your code, so I don't care what it looks like." (true)

"It's frustrating enough just getting the code to work, so I shouldn't feel bad about writing code that doesn't look good." (**very true**)

Sometimes readability is sacrificed for speed

- Usually better to focus on human readability first
- Can refactor code later if absolutely necessary
- Often there are alternative solutions
  - Find a faster computer (short term)
  - Learn a new programming language (long term)

```
send(to, from, count)
register short *to, *from;
register count;
{
    register n = count / 8;
    switch (count % 8) {
    case 0: do { *to = *from++;
    case 7:      *to = *from++;
    case 6:      *to = *from++;
    case 5:      *to = *from++;
    case 4:      *to = *from++;
    case 3:      *to = *from++;
    case 2:      *to = *from++;
    case 1:      *to = *from++;
            } while (n-- > 0);
    }
}
```

What makes code readable?

- **Judicious use of comments**
  - Used to clarify where necessary
  - No need to use where redundant

What makes code readable?

- **Judicious use of comments**
  - Used to clarify where necessary
  - No need to use where redundant
- **Clear naming of variables and functions**
  - E.g., 'make_data_table' instead of 'mdt'
  - Easier to follow, less need for comments

What makes code readable?

- **Judicious use of comments**
  - Used to clarify where necessary
  - No need to use where redundant
- **Clear naming of variables and functions**
  - E.g., 'make_data_table' instead of 'mdt'
  - Easier to follow, less need for comments
- **Consistent and readable spacing**
  - Easy to follow indentation style
  - Spaces after commas, semicolons, etc.
  - Avoid deep nesting where possible

Other considerations aiding readability

- **What does the code look like on other screens?**
  - Set a limit to characters per line (80 is common)
  - If a lot of code, consider using multiple files

Other considerations aiding readability

- **What does the code look like on other screens?**
  - Set a limit to characters per line (80 is common)
  - If a lot of code, consider using multiple files
- **Break code into manageable chunks**
  - Avoids having to remember a lot all at once
  - Functions that can be viewed without scrolling help
  - Much easier to test (fewer bugs!)

Other considerations aiding readability

- **What does the code look like on other screens?**
  - Set a limit to characters per line (80 is common)
  - If a lot of code, consider using multiple files
- **Break code into manageable chunks**
  - Avoids having to remember a lot all at once
  - Functions that can be viewed without scrolling help
  - Much easier to test (fewer bugs!)
- **Rstudio tools can be very helpful**
  - Code > Reflow Comment
  - Code > Reindent Lines
  - Code > Reformat Code

Find something that works for you