# Intro to Labs for Scientific Programming

By Deshawn Sambrano

# Pedagogy

# Tailoring the Class

# All Languages are the Same

**MATLAB**

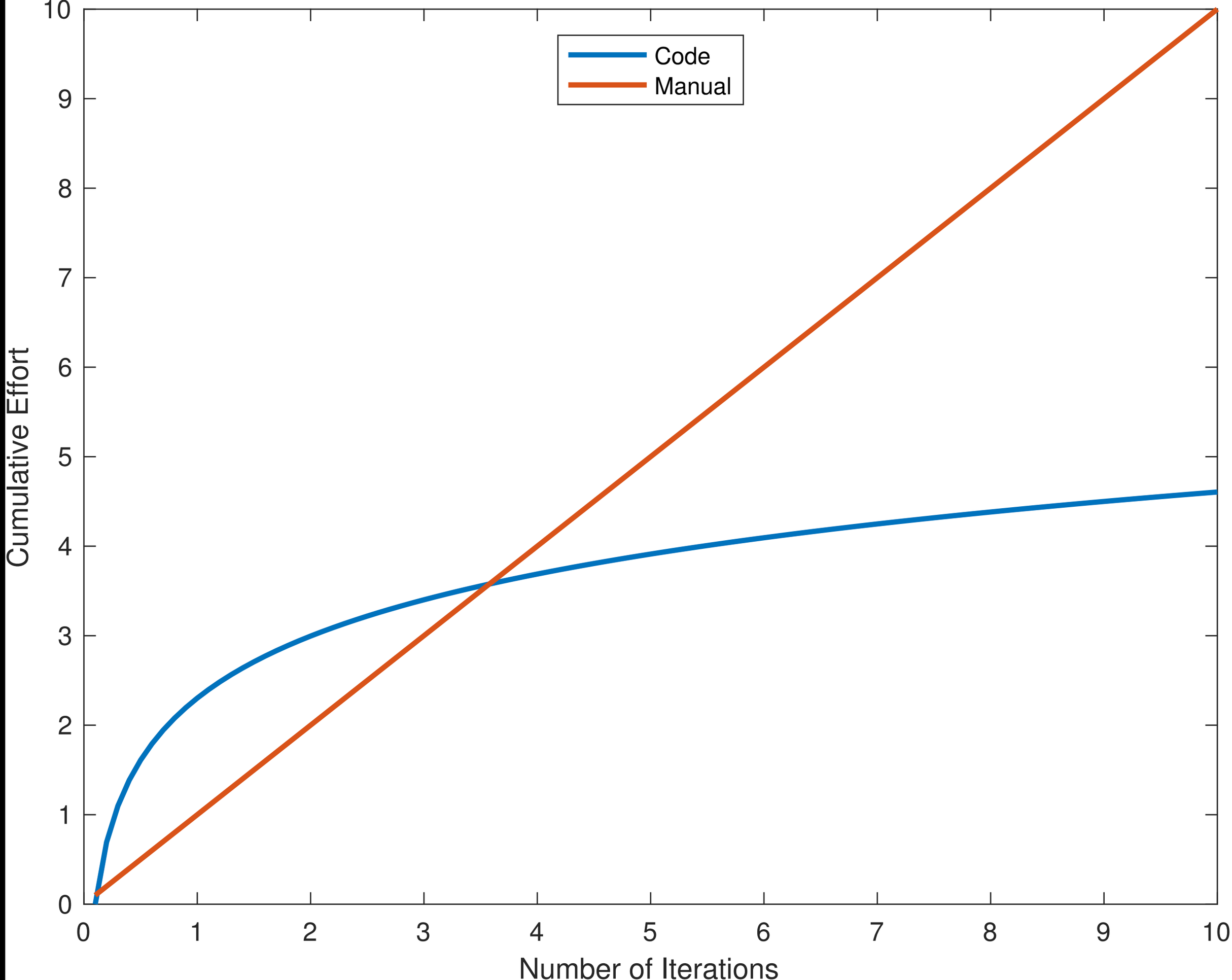
```
y = 0;
for i = 1:10
    y = y + i;
end
y
```

**Python**

```
y = 0
for i in range(1,11):
    y += i

y
```

**R**

```
y <- 0

for (i in 1:10) {
  y <- y + i
}

y
```


Code
Manual
Cumulative Effort
Number of Iterations
0
1
2
3
4
5
6
7
8
9
10

# Common Mistakes

# Code for People NOT Computers

- A program should not require its readers to hold more than a handful of facts in memory at once
- Make names consistent, distinctive, and meaningful
- Make code style and formatting consistent

# Human vs. Computer

- Limited memory
- Error prone over time
- Great at creating things that are larger than the sum of its parts

- Large memory
- Great at repeating things over time
- Very literal and bad a abstraction or error correction