



# Coding Best Practices

Here are some best practices to follow when writing code.

## Start Early!

It's easy to not follow these best practices in the initial phases of coding, as your exploratory code gets more complex, but it's easier to follow these from the start instead of needing to refactor later.

## Use Functions

Use functions instead of copying and pasting code blocks. Every time code is copied, it increases the number of lines that need to be edited if that base code is modified, which in turn increases the potential for bugs. If you find yourself repeating code, it's more effective to write a function, which can be more directly debugged and edited.

## Write Good Comments

When writing comments, write about "why," not "what." What a particular line of code is doing is pretty straightforward to understand. The logic or goal of a section of code is more important to comment so you or anyone else can put those sections and lines into context

## Write Unit Tests

Unit tests are a great debugging and software validation tool. The purpose of a unit test is to check that a particular function or set of functions behaves as expected. They consist of a few steps:

1. Set the environment's state. Initialize variables to desired values for the test.
2. Execute the desired function(s).
3. Compare the output to the expected output given the specified variables.

It's useful to write a file containing the unit tests and add this to the repository; then others can verify that the code works as it should.