

This Document Contains a Link to our GitHub repository, a description of our good code, a description of our bad code, and screenshots of git commits

GitHub Link with good and Bad calculators:

<https://github.com/da-dave/Dcoders-programs/tree/master>

Simple Calculator:

1. KISS -

The code for the simple calculator contains just the required number of functions to operate the four basic functions of the calculator. Each function has simple code lines that carry on the calculator operation assigned to them. I.e.

```
def addition(a, b):  
    # Return the sum of a and b  
    return a + b
```

In this function for addition, return a + b is the only code line.

2. DRY -

The code for the simple calculator does not repeat unnecessary lines. Each function has lines specific to its operational needs. I.e.

```
def subtract(a, b):  
    # Return the difference between a and b  
    return a - b
```

This function is used for subtraction; there are no unnecessary lines that are being repeated. Both addition and subtraction are distinct and do not repeat anything, except for the variable names.

3. Document Your Code -

In the good calculator, each function includes comments that briefly explain its purpose.

```
def get_user_input():  
    # Prompt user for two numbers. Returns computed value.  
    try:  
        # Ask user for two numbers and convert to float  
        num1 = float(input("Enter first number: "))  
        num2 = float(input("Enter second number: "))  
        return num1, num2  
    # Handle non-numeric input
```

Here are the various uses of comments to help users easily understand what is happening

4. Clean Code -

In this part, there is consistent spacing and formatting, as well as clear and descriptive variable and function names.

```
def main():  
    # Main function that controls calculator flow  
    print ("Welcome to the simple calculator!")
```

```
print ("Choose an operation: add, subtract, multiply, divide")
```

Horrible Calculator:

1. KISS -

The code for the bad calculator hard-codes all the calculator operations into one function, making it hard to read and understand.

```
def calc():  
    # This project is a calculator  
    x = int(input("1 add 2 sub 3 mul 4 div: "))  
    if x == 1:  
        a = float(input("a: "))  
        b = float(input("b: "))  
        print("a+b=", str(a+b))  
    if x ==2:  
        a = float(input("a: "))  
        b = float(input("b: "))  
        print("a-b=", str(a-b))
```

This is a snippet of the function. This could have been separated into two functions, like in the simple calculator file.

2. DRY -

The code for the bad calculator repeats input lines many times and uses typecasting even though it does not need to.

```
if x ==3:  
    a = float(input("a: "))  
    b = float(input("b: "))  
    print("a*b=", str(a*b))  
if x ==4:  
    a = float(input("a: "))  
    b = float(input("b: "))  
    print("a/b=", str(a/b))
```

In all the operations, the code expects input based on the user's choice rather than just having it written once.

3. Document Your Code -

There are no comments or documentation at all in the bad calculator.
From bad calculator:

```
def calc():  
    x = int(input("1 add 2 sub 3 mul 4 div: "))  
    if x == 1:  
        a = float(input("a: "))  
        b = float(input("b: "))  
        print("a+b=", str(a+b))
```

There should be some comments here to describe what the code is doing

4. Clean Code -

Using a singular function to do everything is not good practice, and there is repeated code for getting user inputs using if blocks.

From bad calculator:

```
if x == 1:  
    a = float(input("a: "))  
    b = float(input("b: "))  
    print("a+b=", str(a+b))
```

This shows one of the many repeated if statements, demonstrating bad practice of clean code

Screenshots of git commands and commits:

```
Terminal Local x
1 add 2 sub 3 mul 4 div: 1
a: 2
b: 4
a+b= 6.8
(.venv) akhichappidi@Akhis-MacBook-Pro HorribleCode % git add bad_calculator.py
(.venv) akhichappidi@Akhis-MacBook-Pro HorribleCode % git commit -m "style: made bad_calculator intentionally violating four principles"
[master b03668c] style: made bad_calculator intentionally violating four principles
1 file changed, 24 insertions(+)
(.venv) akhichappidi@Akhis-MacBook-Pro HorribleCode % git push origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 11 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 491 bytes | 491.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/da-dave/Dcoders-programs.git
5b99bc2..b03668c master -> master
(.venv) akhichappidi@Akhis-MacBook-Pro HorribleCode %
```

SoftwareEngineeringProject > HorribleCode > bad_calculator.py 6:23 LF UTF-8 4 spaces Python 3.13 (SoftwareEngineeringProject)

```
Terminal Local x + v
modified: bad_calculator.py
modified: good_calculator.py

no changes added to commit (use "git add" and/or "git commit -a")
(.venv) akhichappidi@Akhis-MacBook-Pro HorribleCode % git add good_calculator.py

(.venv) akhichappidi@Akhis-MacBook-Pro HorribleCode % git commit -m "docs: added inline comments to good_calculator.py for clarity"

[master 5b99bc2] docs: added inline comments to good_calculator.py for clarity
1 file changed, 54 insertions(+), 2 deletions(-)
(.venv) akhichappidi@Akhis-MacBook-Pro HorribleCode % git push origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 11 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 1.05 KiB | 1.05 MiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/da-dave/Dcoders-programs.git
3f65cdb..5b99bc2 master -> master
```

SoftwareEngineeringProject > HorribleCode > good_calculator.py 58:11 LF UTF-8 4 spaces Python 3.13 (SoftwareEngineeringProject)

Commits

master		All users	All time
Commits on Jun 24, 2025			
docs: added single comment to bad_calculator	Dave Nallipogu committed 1 minute ago	2731905	Copy Compare
docs: added single comment to bad_calculator	Dave Nallipogu committed 1 minute ago	5705e85	Copy Compare
style: made bad_calculator intentionally violating four principles	akhimass committed 47 minutes ago	b03668c	Copy Compare
docs: added inline comments to good_calculator.py for clarity	akhimass committed 1 hour ago	5b99bc2	Copy Compare
feat: initial commit with good and bad versions of calculator	akhimass committed 1 hour ago	3f65cdb	Copy Compare