My Inspiration
Late. Shivlal Dhamone

Subject Teacher
Santosh Dhamone

Practical No. 7:

Practical based on verification of $|a+b||a|+|b|$ and other properties of absolute value function.

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27th September 2024

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Absolute Values:

The absolute value of a number refers to the distance of a number from the origin of a number line. It is represented as —a—, which defines the magnitude of any integer 'a'. The absolute value of any integer, whether positive or negative, will be the real numbers, regardless of which sign it has. It is represented by two vertical lines —a—, which is known as the modulus of a. For example: 5 is the absolute value for both 5 and -5.
$|-5| = +5$ and $|+5| = +5$

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Python Code with Output Sample 1:

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Code Python

```
[14...  # |a+b|<|a|+|b|
        a = float(input('Enter number a: '))
        b = float(input('Enter number b: '))
        print('|a|:', abs(a))
        print('|b|:', abs(b))
        print(' |a+b|:', abs(a+b))
        print('|a|+|b|:', abs(a)+abs(b))
        if abs(a+b) <= abs(a)+abs(b):
           print("|a+b|<=|a|+|b| verified")
        else:
           print("Not True")
```

```
Enter number a:  -2.5
Enter number b:  -5.5
|a|: 2.5
|b|: 5.5
 |a+b|: 8.0
|a|+|b|: 8.0
|a+b|<=|a|+|b| verified
```

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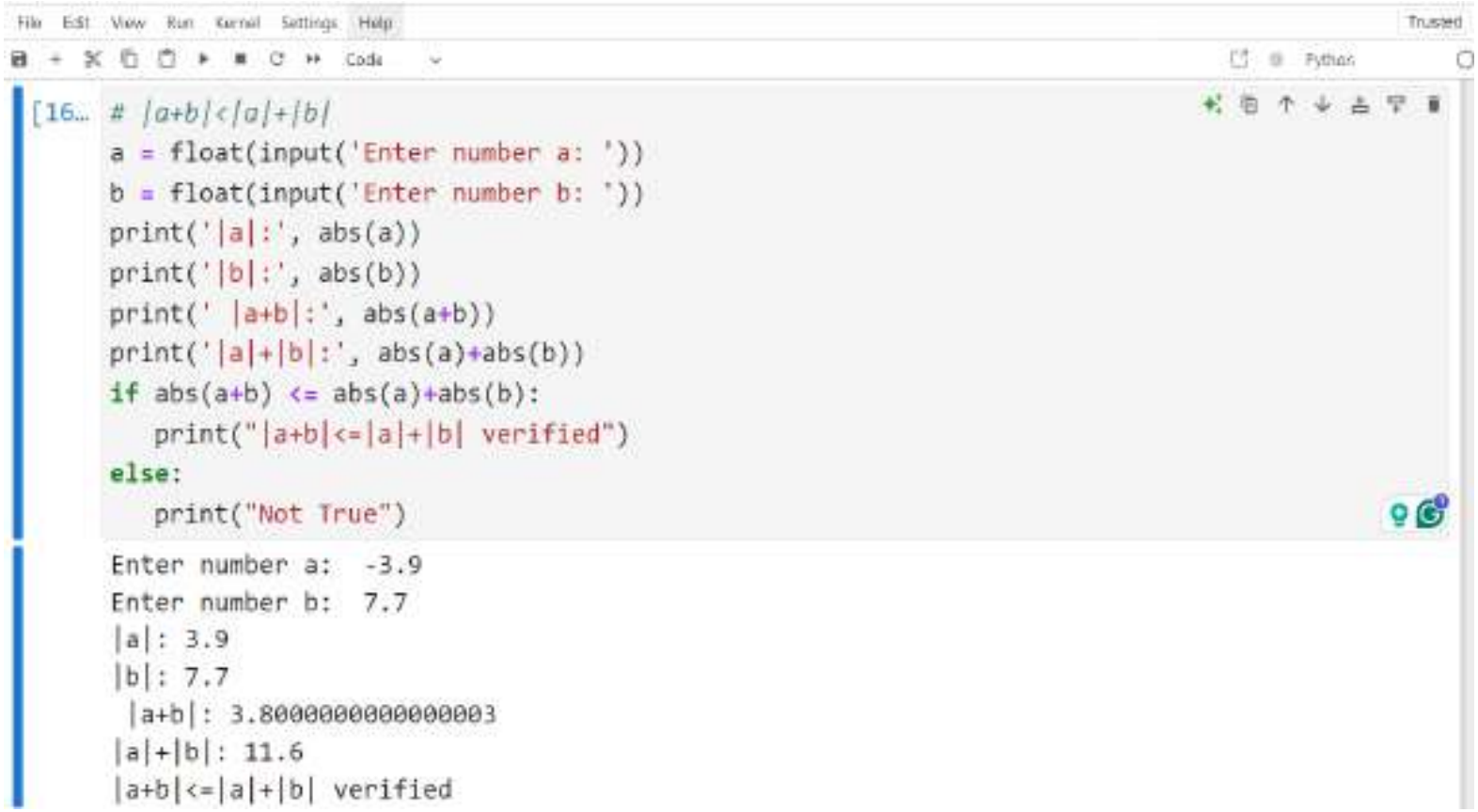
Python Code with Output Sample 2:



```
[16...  # |a+b|<|a|+|b|
        a = float(input('Enter number a: '))
        b = float(input('Enter number b: '))
        print('|a|:', abs(a))
        print('|b|:', abs(b))
        print(' |a+b|:', abs(a+b))
        print('|a|+|b|:', abs(a)+abs(b))
        if abs(a+b) <= abs(a)+abs(b):
           print("|a+b|<=|a|+|b| verified")
        else:
           print("Not True")
```

```
Enter number a:  -3.9
Enter number b:  7.7
|a|: 3.9
|b|: 7.7
 |a+b|: 3.8000000000000003
|a|+|b|: 11.6
|a+b|<=|a|+|b| verified
```

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Python Code with Output Sample 3:

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Code Python

[18]:
```
# |a+b|<|a|+|b|
a = float(input('Enter number a: '))
b = float(input('Enter number b: '))
print('|a|:', abs(a))
print('|b|:', abs(b))
print(' |a+b|:', abs(a+b))
print('|a|+|b|:', abs(a)+abs(b))
if abs(a+b) <= abs(a)+abs(b):
   print("|a+b|<=|a|+|b| verified")
else:
   print("Not True")
```

```
Enter number a:  3.3
Enter number b:  -11.7
|a|: 3.3
|b|: 11.7
 |a+b|: 8.399999999999999
|a|+|b|: 15.0
|a+b|<=|a|+|b| verified
```

Practical based on verification of $|a+b||a|+|b|$ and other properties of absolute value function:

Python Code with Output Sample 4:

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Code Python

[20...

```
# |a+b|<|a|+|b|
a = float(input('Enter number a: '))
b = float(input('Enter number b: '))
print('|a|:', abs(a))
print('|b|:', abs(b))
print(' |a+b|:', abs(a+b))
print('|a|+|b|:', abs(a)+abs(b))
if abs(a+b) <= abs(a)+abs(b):
   print("|a+b|<=|a|+|b| verified")
else:
   print("Not True")
```

```
Enter number a:  3
Enter number b:  13.5
|a|: 3.0
|b|: 13.5
 |a+b|: 16.5
|a|+|b|: 16.5
|a+b|<=|a|+|b| verified
```

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Python Code with Output Sample 5:

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Code Python

[22...
```
# |a+b|<|a|+|b|
a = float(input('Enter number a: '))
b = float(input('Enter number b: '))
print('|a|:', abs(a))
print('|b|:', abs(b))
print(' |a+b|:', abs(a+b))
print('|a|+|b|:', abs(a)+abs(b))
if abs(a+b) <= abs(a)+abs(b):
   print("|a+b|<=|a|+|b| verified")
else:
   print("Not True")
```

```
Enter number a:  -9.9
Enter number b:  0
|a|: 9.9
|b|: 0.0
 |a+b|: 9.9
|a|+|b|: 9.9
|a+b|<=|a|+|b| verified
```