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Exercises

Complex

You have to add methods to the Complex class from the lecture:

```
class Complex(object):
    def __init__(self, real, imaginary):
        self.re = real
        self.im = imaginary

    def __add__(self, z2):
        new_re = self.re + z2.re
        new_im = self.im + z2.im
        return Complex(new_re, new_im)

    # used by print
    def __str__(self):
        return str(self.re) + " + " + str(self.im) + "i"

z1 = Complex(4, 3)
z2 = Complex(-2, 1)
z3 = z1 + z2

print(z3)
```

- Implement the subtraction, multiplication and division methods (`__sub__`, `__mul__`, `__truediv__`).
- Also implement the `norm` method which returns the length of the complex number.
- Improve the `__str__` method to handle numbers like this for example:

```
2 - 4i
5i
2
```

For testing use this (or you can use other tests):

```
k1 = Complex(4, 3)
k2 = Complex(-2, 1)
k3 = Complex(4, 1)

print k1 + k2
print k1 - k3
print k2 * k1
print k3 / k1
print k1.norm()
```

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```
reservation_1
reservation_2
reservation_3
reservation_4
reservation_5
whowins
```

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