HOMEWORK-8

We cannot demonstrate a point or vector on a two- or more-dimensional plane with real numbers. For these cases, we use complex numbers, which include real numbers.

Complex numbers have real and imaginary parts. Although the properties such as summation and subtraction are similar to real numbers, complex numbers also have different properties.

In this assignment you will define a class of complex numbers. Complex numbers given as examples from this class will contain some properties. Let's define K1 = a + ib and K2 = x + iy.

Note: $i^2 = -1$

1. **Equality** : a == x and b == y => K1 == K2
2. **Not equal** : a != x or b != y => K1 != K2
3. **Length** : K1's length= $\sqrt{a^2 + b^2}$
4. **Conjugate**: K1's conjugate = a - ib
5. **Summation**: K1 + K2 = a+x + i (b+y)
6. **Abstract**: K1 - K2 = a+x + i (b-y)
7. **Multiply**: K1 * K2 = a*x + i (a*y) + i (b*x) + i^2(b*y)
8. **Comparison**: <,<=,>,>= compare lengths in these comparisons .

Application of Homework:

Python 3.7 will be used in this assignment. No libraries will be used. Python's own complex numbers will also not be used. The file to import and run the module you wrote is given to you.