



Challenge 1: Subtract Two Complex Numbers

Test your understanding of structures by solving a simple challenge.

We'll cover the following



- Problem statement
 - What is a complex number?
 - Structure `complex_number`
 - Function `subtract`
 - Subtraction of complex numbers
 - Sample input
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- Coding exercise

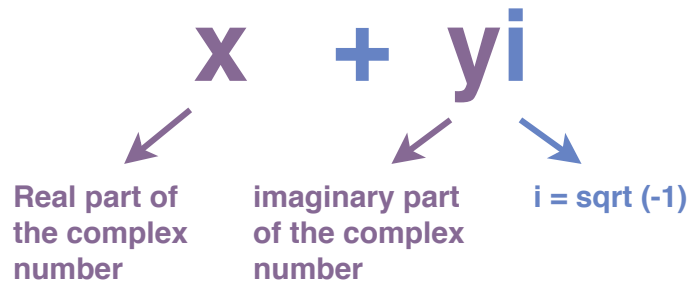
Problem statement#

Your task is to subtract two complex numbers.

What is a complex number?#

A complex number is a number with both real and imaginary parts.

In the figure below, $x + yi$ is a complex number.



Structure `complex_number`

To store the complex number, we have already defined the structure `complex_number` for you.

```
struct complex_number {
```

```
double real ; —————> real will store real part of the complex number
```

```
double imaginary ; —————> imaginary will store imaginary part of the complex number
```

```
};
```

Function `subtract`

In this challenge, we have already declared the function `complex_number` that will take values of type `complex_number` in its input parameters and return value of type `complex_number` in output.

```
complex_number subtract ( struct complex_number c1 , struct complex_number c2 )
```

You have to write your program logic inside the function `complex_number`.

Subtraction of complex numbers



To subtract the complex number, we will follow the following steps:

STEP 1: Apply the negative sign to the real and imaginary parts of the second complex number.

STEP 2: Add a real part of the first complex number in the real part of the second complex number and imaginary part of the first complex number in the imaginary part of a second complex number.

Sample input#



```
subtract ({12.3 , 67.4} , {54.2 , 90.8})
```

Sample output#

```
-41.900000 + -23.400000
```

Coding exercise#

Before diving directly into the solution, try to solve it yourself. Then check if your code passes all the test cases.

Good luck! 🍀

```
1 // Structure to store complex number
2 struct complex_number {
3     double real;
4     double imaginary;
5 };
6
7 // Function to subtract two complex numbers
8 complex_number subtract(struct complex_number c1, struct complex_number c2)
```

```
9    struct complex_number c;  
10   // Write your code here  
11   return c;  
12 }
```



🎉 Well done! If you have solved the problem, give yourself a round of applause.

In case you got stuck, go over the solution review in the next lesson.

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Structure and Pointers

Solution Review: Subtract Two Compl...



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