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Experiment-7 (Structures and Union)

1.) Write a C program that uses functions to perform the following operations :-

a) Reading a Complex Number
b) Writing a Complex number
c) Addition and Subtraction of two Complex numbers.

⇒

```
#include <stdio.h>
Struct Complex {
        float real;
        float imag;
};
 Struct Complex read Complex() {
        Struct Complex c;
        printf("Enter real part : ");
        Scanf("%f", &c.real);
        printf("Enter imaginary part :");
        Scanf("%f", &c.imag);
        return c;
}
Void Write Complex (Struct Complex c) {
 if (c.imag >= 0)
    printf("%.2f + %.2f i\n", c.real, c.imag);
else
    printf("%.2f - %.2f i\n", c.real, -c.imag);
}
```

Remarks:

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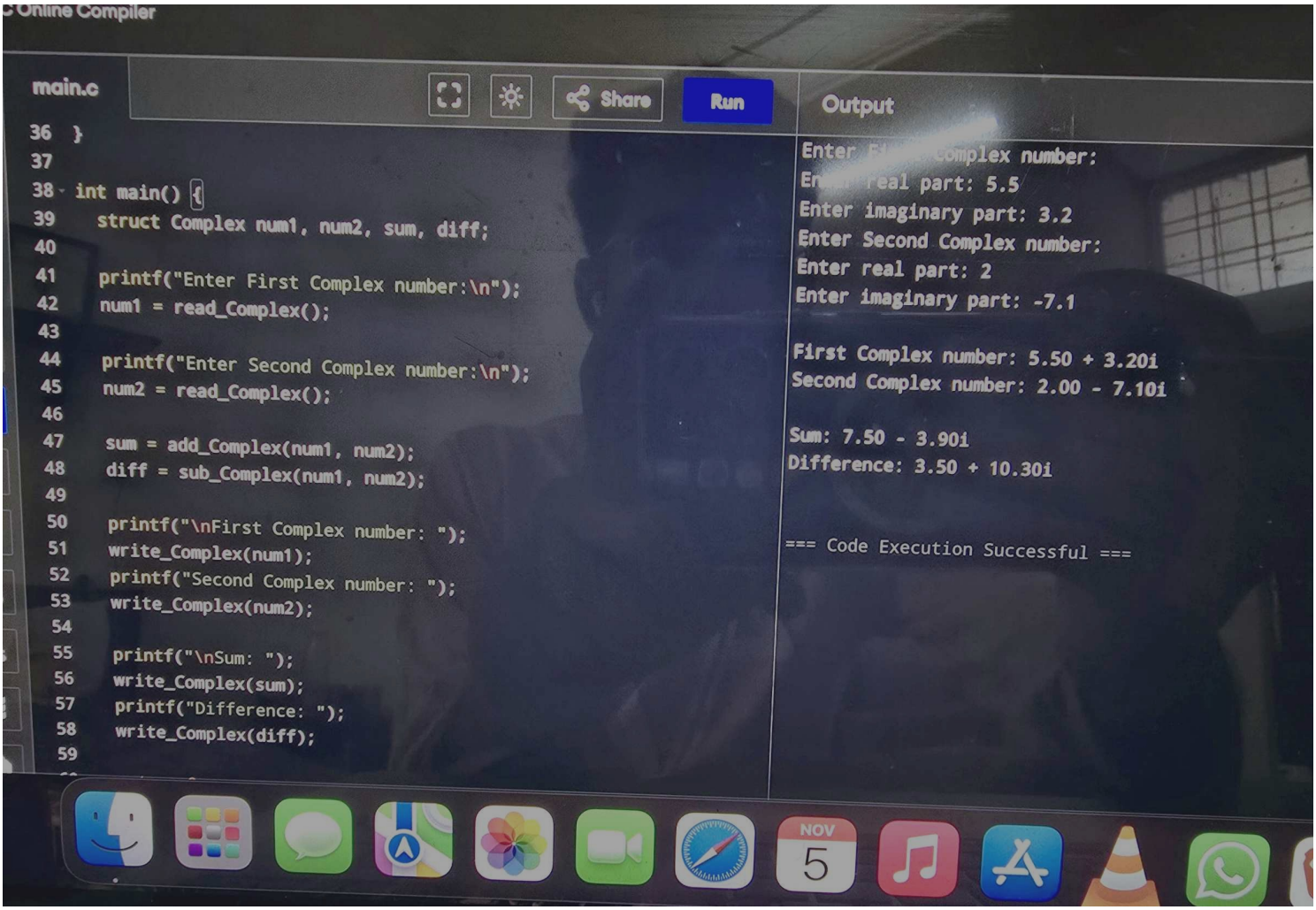
```
struct Complex add_complex (struct Complex c1,
                            struct Complex c2) {
  struct Complex result;

result.real = c1.real + c2.real;
result.imag = c1.imag + c2.imag;
return result;
}

struct Complex sub_complex (struct Complex c1, struct
                            Complex c2)
        struct Complex result;
        result.real = c1.real - c2.real;
        result.imag = c1.imag - c2.imag;

    return result;
}
  int main () {
     struct Complex num1, num2, sum, diff;
printf ("Enter first Complex number: \n");
  num1 = read_Complex ();
printf ("Enter Second Complex number: \n");
  num2 = read_complex ();
     sum = add_complex (num1, num2);
diff = sub_complex (num1, num2);
printf ("\n First Complex number:");
write_Complex (num1);
printf ("Second Complex number:");
```

Remarks:

Teacher's Signature

```
    writeComplex(num2);
    printf("\n Sum: ");
    writeComplex(sum);
    printf("Difference: ");
    writeComplex(diff);
    return 0;
}
```


C Online Compiler
main.c
Share
Run
Output
36 }
37
38 int main() {
39 struct Complex num1, num2, sum, diff;
40
41 printf("Enter First Complex number:\n");
42 num1 = read_Complex();
43
44 printf("Enter Second Complex number:\n");
45 num2 = read_Complex();
46
47 sum = add_Complex(num1, num2);
48 diff = sub_Complex(num1, num2);
49
50 printf("\nFirst Complex number: ");
51 write_Complex(num1);
52 printf("Second Complex number: ");
53 write_Complex(num2);
54
55 printf("\nSum: ");
56 write_Complex(sum);
57 printf("Difference: ");
58 write_Complex(diff);
59
Enter real part: 5.5
Enter imaginary part: 3.2
Enter Second Complex number:
Enter real part: 2
Enter imaginary part: -7.1
First Complex number: 5.50 + 3.20i
Second Complex number: 2.00 - 7.10i
Sum: 7.50 - 3.90i
Difference: 3.50 + 10.30i
=== Code Execution Successful ===
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