

## C PROGRAM TO PERFORM COMPLEX NUMBER OPERATIONS

```
#include <stdio.h>
#include <stdlib.h>
struct complex
{
    int real, img;
};

int main()
{
    int choice;
    struct complex a, b, c;

    while(1)
    {
        printf("Press 1 to add two complex numbers.\n");
        printf("Press 2 to subtract two complex numbers.\n");
        printf("Press 3 to multiply two complex numbers.\n");
        printf("Press 4 to divide two complex numbers.\n");
        printf("Press 5 to exit.\n");
        printf("Enter your choice\n");
        scanf("%d", &choice);

        if (choice == 5)
            return 0;

        if (choice >= 1 && choice <= 4)
        {
            printf("Enter a and b where a + ib is the first complex number.");
            printf("\na = ");
            scanf("%d", &a.real);
            printf("b = ");
            scanf("%d", &a.img);
            printf("Enter c and d where c + id is the second complex number.");
            printf("\nc = ");
            scanf("%d", &b.real);
            printf("d = ");
            scanf("%d", &b.img);
        }
        if (choice == 1)
        {
            c.real = a.real + b.real;
            c.img = a.img + b.img;
            printf("Sum of the complex numbers = %d + %di", c.real, c.img);
        }
        else if (choice == 2)
        {

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        c.real = a.real - b.real;
        c.img = a.img - b.img;
        printf("Difference of the complex numbers = %d + %di", c.real, c.img);

    }
    else if (choice == 3)
    {
        c.real = a.real*b.real - a.img*b.img;
        c.img = a.img*b.real + a.real*b.img;
        printf("Multiplication of the complex numbers = %d + %di", c.real, c.img);

    }
    else if (choice == 4)
    {
        c.real = (a.real)/(b.real);
        c.img = (a.img)/(b.img);
        printf("Division of the complex numbers = %d + %di", c.real, c.img);

    }
    else
        printf("Invalid choice.");

    printf("\nPress any key to enter choice again...\n");
}
}

```

## OUTPUT

```

a1/desktop/c++ 2nd year/complexswitch
Press 1 to add two complex numbers.
Press 2 to subtract two complex numbers.
Press 3 to multiply two complex numbers.
Press 4 to divide two complex numbers.
Press 5 to exit.
Enter your choice
1
Enter a and b where a + ib is the first complex number.
a = 5
b = 6
Enter c and d where c + id is the second complex number.
c = 7
d = 8
Sum of the complex numbers = 12 + 14i
Press any key to enter choice again...
Press 1 to add two complex numbers.
Press 2 to subtract two complex numbers.
Press 3 to multiply two complex numbers.
Press 4 to divide two complex numbers.
Press 5 to exit.
Enter your choice
2
Enter a and b where a + ib is the first complex number.
a = 7
b = 8
Enter c and d where c + id is the second complex number.
c = 4
d = 5
Difference of the complex numbers = 3 + 3i
Press any key to enter choice again...
Press 1 to add two complex numbers.
Press 2 to subtract two complex numbers.
Press 3 to multiply two complex numbers.
Press 4 to divide two complex numbers.
Press 5 to exit.
Enter your choice
3
Enter a and b where a + ib is the first complex number.
a = 3
b = 3
Enter c and d where c + id is the second complex number.
c = 6
d = 6
Multiplication of the complex numbers = 8 + 36i
Press any key to enter choice again...
Press 1 to add two complex numbers.
Press 2 to subtract two complex numbers.
Press 3 to multiply two complex numbers.
Press 4 to divide two complex numbers.
Press 5 to exit.
Enter your choice
5

```