CSB Lab-10

Q1) Define a structure “complex” (typedef) to read two complex numbers and perform addition, subtraction of these two complex numbers and display the result.

```c
#include <stdio.h>
typedef struct complex {
    float real;
    float imag;
} complex;
complex add(complex n1, complex n2) {
    complex temp;
    temp.real = n1.real + n2.real;
    temp.imag = n1.imag + n2.imag;
    return (temp);
}
complex sub(complex n1, complex n2) {
    complex temp;
    temp.real = n1.real - n2.real;
    temp.imag = n1.imag - n2.imag;
    return (temp);
}
int main() {
    complex n1, n2, result1, result2;
    printf("For 1st complex number \n");
    printf("Enter the real and imaginary parts: ");
    scanf("%f %f", &n1.real, &n1.imag);
    printf("For 2nd complex number \n");
    printf("Enter the real and imaginary parts: ");
    scanf("%f %f", &n2.real, &n2.imag);
    result1 = add(n1, n2);
    result2 = sub(n1, n2);
    printf("Sum = %.1f + %.1fi\n", result1.real, result1.imag);
    printf("Sub = %.1f - %.1fi", result2.real, result2.imag);
    return 0;
}
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

PS G:\Nitin\Code Blocks\Calm> gcc Complex.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
For 1st complex number
Enter the real and imaginary parts: 4
7
For 2nd complex number
Enter the real and imaginary parts: 1
8
Sum = 5.0 + 15.0i
Sub = 3.0 - -1.0i
PS G:\Nitin\Code Blocks\Calm>
```

Q2) Write a program to add two distances in feet and inches using structure.

```c
#include<stdio.h>
struct distance{
    int feet;
    int inch;
};
int main(){
    struct distance d1, d2, sum;
    printf("Enter feet and inch of first distance: ");
    scanf("%d%d", &d1.feet, &d1.inch);
    printf("Enter feet and inch of second distance: ");
    scanf("%d%d", &d2.feet, &d2.inch);
    sum.inch = d1.inch + d2.inch;
    sum.feet = d1.feet + d2.feet;
    if(sum.inch>=12){
        sum.feet += sum.inch/12;
        sum.inch %= 12;
    }
    printf("Sum is %d' %d''", sum.feet, sum.inch);
    return 0;
}
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

PS G:\Nitin\Code Blocks\Calm> gcc Inch.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
Enter feet and inch of first distance: 5
4
Enter feet and inch of second distance: 7
9
Sum is 13' 1''
PS G:\Nitin\Code Blocks\Calm>
```

Q3) Write a program to create a file called emp.rec and store information about a person, in terms of his name, age and salary.

```c
#include <stdio.h>

void main(){
    FILE *fptr;
    char name[20];
    int age;
    float salary;
    fptr = fopen ("emp.rec", "w"); /*open for writing*/
    if (fptr == NULL){
        printf("File does not exists\n");
    return;
    }
    printf("Enter the name: ");
    scanf("%s", name);
    fprintf(fptr, "Name :  %s\n", name);
    printf("Enter the age: ");
    scanf("%d", &age);
    fprintf(fptr, "Age : %d\n", age);
    printf("Enter the salary: ");
    scanf("%f", &salary);
    fprintf(fptr, "Salary : %.2f\n", salary);
    fclose(fptr);
}
```