Arithmetic in c-language and their precedence

```c
/*
  File with name lecture2.c
  Sample Algebraic and C Expressions
*/
#include <stdio.h>
int main(){
    int i1, i2, i3, i4, i5, j1, j2, j3, j4, j5;
    /* Here i1, i2, i3, i4, i5 and j's are declared as integers */
    printf("Give any 5 integers with single space between them: ");
    scanf("%d%d%d%d%d", &i1, &i2, &i3, &i4, &i5);
    printf("Integers, which are given are follows:\n");
    printf("%d, %d, %d, %d and %d\n\n", i1, i2, i3, i4, i5);
    j1 = i1 + i2 + i3 + i4 + i5;

    /* Here it will first calculate i1 + i2
       In that sum it will add i3 and after i4 and in the end i5;
```

Remaining part of above program

```c
/* Here it will first calculate i1 + i2
   In that sum it will add i3 and after i4 and in the end i5;
*/
j2 = i1 - i2;
printf(""Addition of given integers is = %d\n", j1);
printf("Addition of %d and %d is %d\n", i1, i2, i1 + i2);
printf("Subtraction of first 2 integers is equal to %d\n\n", j2);
/* In subtraction also, it will go from right to left */
j3 = i1 * i2 * i3;
printf("i1 * i2 * i3 = %d\n", j3);
j4 = i1 / i2; j5 = i1 % i2;
printf("i1/i2 = %d and i1 remainder i2 is %d\n\n", j4, j5);
/* Here in divide, it will show only integer part of the result */
return 0;
}
```

Before Arithmetics (read and write integers)

```
/*
   Read/write integers in c-program
*/
#include <stdio.h>
int main(){
    int a, b;
    /* Here a and b are declared as integers */
    printf("Give any 2 integers: ");
    scanf("%d%d", &a, &b);
    printf("Given integers are: %d and %d\n", a, b);
    return 0; /* indicate that program ended successfully */
}
```

Here we are reading 2 integers declared as 'a' and 'b'.
In scanf and printf, %d's are coming in ordered way. First %d represents first integer.
If there are more than one %d's are written, means they are in a ordered way.

Before Arithmetics (read and write real numbers)

```c
/*
  Read/write float in c-program
*/
#include <stdio.h>
int main(){
    float a, b;
    /* Here a and b are declared as float/real numbers */
    printf("Give any 2 real numbers: ");
    scanf("%f%f", &a, &b);
    printf("Given real numbers are: %f and %f\n", a, b);
    return 0; /* indicate that program ended successfully */
}
```

Here we are reading 2 real numbers declared as 'a' and 'b'.

In scanf and printf, %f's are coming in ordered way. First %f represents first integer.

If there are more than one %f's are written, means they are in a ordered way.

Before Arithmetics (read and write characters)

```c
/*
  Read/write character in c-program
*/
#include <stdio.h>
int main(){
    char a, b;
    /* Here a and b are declared as charaters numbers */
    printf("Give any 2 characters without space/enter/tab: ");
    scanf("%c%c", &a, &b);
    printf("Given characters are: %c and %c\n", a, b);
    return 0; /* indicate that program ended successfully */
}
```

All single digit numbers are known as characters.
Space, return and tab key's are known as non-visual characters. Which implies, if we press a single space, it will be known as a character as space ' '

Before Arithmetics (read and write)

```c
/*
  Read/write mixed data-types in c-program
*/
#include <stdio.h>
int main(){
    int i1, i2;
    float f1, f1;
    char c1, c2;
    printf("Give any 2 integers, 2 float and 2 characters: ");
    scanf("%d%d%f%f%c%c", &i1, &i2, &f1, &f2, &c1, &c2);
    printf("First integers, first float and first character:");
    printf("%d,     %f   and %c\n", i1, f1, c1);
    printf("Second integers, 2nd float and 2nd character:");
    printf("%d,     %f   and %c\n", i2, f2, c2);
    return 0;
}
```

Explanation of previous slide

- In scanf statement, we have given a order as `%d%d%f%f%c%c`. Which means it will first read 2 integers, after that it will read 2 real numbers and in the end it will read 2 characters.
- Here we should be careful about reading inputs. When it will read integers or real numbers, we have to put a space or enter (new line) to read next one. But in the end of 2nd real number, it will read characters continuously.
- In following statements, we are writing first integer, first float and first character only.
- In next statement, we are dealing with second variables of same type.