Structures in C

- If all data items are of different data types we use structure

    - A struct is a data structure that consists of multiple elements with different datatype, and each element is known as
        - each member has its own unique name and a defined type

    - Syntax

        Struct tag

        {

        Member 1;

        Member 2;........

        };

The struct Definition

- struct is a keyword for defining a structured declaration

- Format:

```
struct structName {
    type1 name1;
    type2 name2;
    ...
};
```

name1 and name2
are *members* of name

- structName represents this structure's tag and is optional
  - we can either provide name
  - or after the } we can list variables that will be defined to be this structure

Examples

```
struct point {
    int x;
    int y;
};

struct point p1, p2;
```

p1 and p2 are both
points, containing an
x and a y value

```
struct  point {
    int x;
    int y;
}  p1, p2;
```

same as the other,but
united into one set
of code, p1 and p2
have the tag point

Write a simple structure to store student data for 5 students like rollno,name,UT1 marks,UT2 and calculate average of it.

Write a program for accepting the information of employee working in a company and calculate its gross salary usig formula gross=basic salary+DA+HRA

Difference between Structure and Union

typedef

- It allows you to define datatype equivalent to exisiting data type

- Syntax

    typedef exsiting_datatype new_datatype

- Example,

    typedef int age;

    age male,female;

- So we are simply giving a new name to exsisitng data type

Recursion

- Recursion is the process of repeating items in a self-similar way.

- In programming languages, if a program allows you to call a function inside the same function, then it is called a recursive call of the function.

Recursion

```
int main()
{
.....
rec();
......
}//end of main
void rec()
{
.......
rec(); /* recursive call*/
.......
}
```

Write a program to find factorial of a number by recursive method

Write a program to generate fibonacci series