#### What is a structure?

A structure is a collection of variables. For instance, if you have a student structure then you will group the student number, student name, and sex together.

### Creating and using a structure

To create a structure, you must use typedef struct keyword. Variables of the structure must be put in curly brackets. In the example below, we create a structure named student containing stnumber,stname, and stsex variables.

Example  
  
#include<stdio.h>  
  
#include<stdlib.h>  
  
struct student  
{  
  
 int stnumber;  
  
 char \*stname;  
  
 char \*stsex;  
};  
  
To use student structure, you must declare it.  
  
Example:  
  
int main()  
{  
 student stu;  
 return 0;  
}  
  
To set values to the items of the structure, you must use the name of structure that has been declared followed by the names of those items.  
  
Example:  
  
#include<stdio.h>  
#include<stdlib.h>  
  
  
typedef struct  
{  
 int stnumber;  
 char \*stname;  
 char \*stsex;  
}student;  
  
int main(){  
 student stu;  
 stu.stnumber=123;  
 stu.stname="Channa";  
 stu.stsex="Male";  
 printf("%d %s %s",stu.stnumber,stu.stname,stu.stsex);  
 getch();  
 return 0;  
}

### Pointers to structures

When you are using a pointer to a structure then you can use a -> instead of a dot to access its items.  
  
Example:  
  
student stu;  
student \*sp = &stu;  
sp->stnumber = 123;  
  
sp->stname=”Channa”;  
  
st->stsex=”male”;  
  
Array of Structures  
  
You also can create an array to store structures in similar way as you do with storing integral values, float values, string values, etc.  
  
Example:  
  
#include <stdio.h>  
#include <stdlib.h>  
  
typedef struct{  
 char em\_number[10];  
 char em\_name[20];  
 float em\_salary;  
  
}employee;  
  
  
int main(int argc, char \*argv[])  
{  
  
  
employee emp[2];  
  
 int i;  
 //assign values to each element of the array  
 strcpy(emp[0].em\_number,"em0001");  
 strcpy(emp[0].em\_name,"Sok Chan");  
 emp[0].em\_salary=820;  
 strcpy(emp[1].em\_number,"em0002");  
 strcpy(emp[1].em\_name,"Villa Morn");  
 emp[1].em\_salary=920;  
  
 //show contents of each element of the array  
 printf("ID\tName\t\tSalary\n");  
 for(i=0;i<2;i++){  
 printf("%s\t",emp[i].em\_number);  
 printf("%s\t",emp[i].em\_name);  
 printf("%.2f\n",emp[i].em\_salary);  
  
}  
  
  
 system("PAUSE");  
 return 0;  
}