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Unions and Structures

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What is a Union?

If we are having the less memory to use in our program, for example 64K, we can use a single memory location for more than one variable this is called union. You can use the unions in the following locations.

You can share a single memory location for a variable myVar1 and use the same location for myVar2 of different data type when myVar1 is not required any more.

You can use it if you want to use, for example, a long variable as two short type variables.

When you don't know what type of data is to be passed

to a function, and you pass union which contains all the possible data types.

Defining a Union

Union can be defined by the keyword union.

```
union myUnion{
    int var1;
    long var2;
};
```

Here we have defined a union with the name myUnion and it has two members i.e. var1 of type int and var2 of type long

Declaring the Union

We can declare the union in various ways. By taking the above example we can declare the above defined union as.

```
union myUnion{
    int var1;
    long var2;
}newUnion;
```

So newUnion will be the variable of type myUnion. We can also declare the union as

```
myUnion newUnion;
```

Initializing the Union

We can initialize the union in various ways. For example

```
union myUnion{
    int var1;
    long var2;
}newUnion={10.5};
```

or we can initialize it as

```
newUnion.var1= 10;
```

In later stages we can also initialize the var2 as well but this will overwrite the var1 value. Normally when we declare the union it is allocated the memory that its biggest member can occupy. So here in our example newUnion will occupy the memory which a long type variable can occupy.

What is a Structure

A structure is a convenient tool for handling a group of logically related data items. Structure helps to organize complex data in a more meaningful way. It is a powerful concept that we may need to use in our program design.

A structure is a combination of different data types. Let's take the example of a book, if we can't to

declare a book we will be thinking about the name, title, authors and publisher of the book and publishing year. So to declare a book we need to have some complex data type which can deal with more than one data types. Lets declare a Book.

Defining a Structure

We can declare a structure to accommodate the book.

```
struct Book
{
    char Name[100];
    char Author[100];
    char Publisher[80];
    int Year;
};
```

The keyword struct defines a book, and each line with in the braces defines the elements of the Book. Now when ever we create an instance of Book it will have all the elements of the structure i.e. Name, Author, Publisher and Year.

Declaring a Structure

We can declare the structure just like union.

```
Book CProgrammingBook;
```

Initializing a Structure

Lets initialize the structure variable CProgrammingBook.

```
Book CProgrammingBook =
{
    "Beginning VC++ 6",
    "Ivor Horton",
    "Wrox",
    2001
};
```

Accessing the members of a Structure

We can access all the members of a structure by adding a period after the name of the structure variable name and then the name of the field we want to access. For example we want to change the Publish year from 2001 to 2002, we will do it as

```
CProgrammingBook.Year = 2002;
```

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azil

Please send me a code about "passing structure to a function".

December 8, 2006 at 8:18
am

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jagdeep

Draw a daigram internal storage of structure in c language
my id :- ranjeet_singh_20012001 at yahoo dot com
plz ... send reply

February 15, 2007 at 11:41
pm

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shaky

Please send more information about structures and unions

March 1, 2007 at 7:24

am

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preeti

Can somebody help me by telling the difference between structures and unions with complete programming examples for this u can mail me at http://www.aman_arora89@rediffmail.com

March 5, 2007 at 10:47

am

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sachin,id:goforsachin@gmail.com

Will some one plz tell me how to handle the multiple stuctures in c

April 7, 2007 at 12:35

am

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Raj

Is there any way to compare 2 structure, i used memcmp but it doesn't compare the structure.
following is the code

```
struct temp
{
    int x;
    int y;
    int z;
};
temp x1,x2;
x1.x = 465, x1.y = 0, x1.z = 0;
x2.x = 222, x2.y = 0, x2.z = 0;

int Ret = memcmp(&x1,&x2,sizeof(temp));

value of Ret is -1 i.e x1 is less than x2.
```

June 27, 2007 at 2:17

am

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indinfer

Looks to me like memcmp() worked just fine. It returned a non-zero value because x1 and x2 are not equal. If x1 and x2 would be equal, then memcmp() should return 0.

November 29, 2012 at 11:43

pm

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Ashwati

Hi, can anyone help me to develop, in c language for Hotel Management system. Plz reply as soon as possible. Thank You.

October 18, 2007 at 7:39

am

[Log in to Reply](#)



Speedy

Tell me, what has to be done. let me try.

December 17, 2007 at 1:41

am

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JaDe FeLiCe NaHiD

Can i ask how to insert in front and rear
Can u give me some code??

December 20, 2007 at 4:52

am

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RaghavaReddy

Hello can any explain structure and union, I dont know any thing

December 20, 2007 at 4:52

am

[Log in to Reply](#)



anuradha

kindly explain array of structures and structures and functions

December 28, 2007 at 2:03

am

[Log in to Reply](#)



shaky

Its excellent, but i want some more information on it. please give me

December 20, 2007 at 4:52

am

 sir.

[Log in to Reply](#)



asli melt

Thanks that is excellent. it couldn't be more clear

December 20, 2007 at 4:52
am

[Log in to Reply](#)



praveen

sir I have a prob in UNION REGS func in LINUX
can you please give me sol

December 20, 2007 at 4:52
am

[Log in to Reply](#)



ahsun

What type of problem are you facing? Can you please tell us
briefly about your problem?

--- Original Message ---

sir I have a prob in UNION REGS func in LINUX
can you please give me sol

January 14, 2008 at 11:25
am

[Log in to Reply](#)



Samira

I m facing a problem in union swap.please can anyone help me.the
problem is to swap inside an union using bitwise operator!
please help me.It is very urgent.

December 26, 2007 at 10:40
am

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anant

I didn't get only wat it means...
Can u tel it in brief?

--- Original Message ---

I m facing a problem in union swap.please can anyone help me.the problem is to swap
inside an union using bitwise operator!
please help me.It is very urgent.

January 8, 2008 at 12:00
am

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meanne

how to make an inventory using structures and files?????if you know
answer kindly tell me,,thanx!

February 8, 2008 at 2:48
am

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akhtar khan

please help me to larning file handling to make a project in c using
filehandling
please tell me how i can learn less time

February 9, 2008 at 3:57
am

[Log in to Reply](#)



akhtar khan

i m studying in b.tech 2nd yr now i want to make perfect in c++ and
java pls help me to do this , pls tell me how i can do

February 9, 2008 at 4:06
am

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Speedy

Read the fundamentals of C from some xyz book. Visit these
types of Sites. Think about the problems of others in these sites. WORK IN YOUR SYSTEM
and come with a solution. It is the only effective way of learning as far as i am concerned.
All the best for your b.tech studies

--- Original Message ---

i m studying in b.tech 2nd yr now i want to make perfect in c++ and java pls help me to do
this , pls tell me how i can do

February 22, 2008 at 12:02
am

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nbb18

write a program using one dimensional array that searches a number if it

March 5, 2008 at 1:25
am

is found on the list of the given 5 input numbers and locate its exact location in the list....

SAMPLE INPUT/OUTPUT DIALOGUE:

enter a list of numbers:

5 4 8 2 6

enter a number to be searched: 2

2 is found in location 4

pls....help....

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Mr. Dirkdan CpE

August 12, 2008 at 3:12

am

Im a 3rd year BS Computer Engineering student of Holy Name

University here in Bohol, Philippines and I'm lucky that we have discussed that topic which is also a program that you are looking for.

We discussed a lot about searching. No need for dimensional arrays. There is an algorithm for that, In fact there are lots of searching method that would exactly fit with your purpose of the sai program.

If you want my friend. I can help you.. plz tell me if you want the codes... i can send you my code! Im also in dirkdan_08@yahoo.com

Tnx...

--- Original Message ---

write a program using one dimensional array that searches a number if it is found on the list of the given 5 input numbers and locate its exact location in the list....

SAMPLE INPUT/OUTPUT DIALOGUE:

enter a list of numbers:

5 4 8 2 6

enter a number to be searched: 2

2 is found in location 4

pls....help....

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ram manohar

March 24, 2008 at 11:43

pm

Write a program to add records (EMP Name and EMP Id) and display it, to delete a particular record. It should be in three functions one for adding, two for displaying, three for deleting.

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suma

May 12, 2008 at 2:37

am

I it possible to declare a union with in structure , if possible how

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prasu

August 11, 2008 at 6:42

am

whether unions are defined inside structures or not?

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Mr. Dirkdan CpE

August 12, 2008 at 3:29

am

Im just hoping that this room will actualy help me so much. Hm, Im

Roldan of Philippines still studying Computer Enginnering and we're given task to make a data structure program that has a menu an in menu.. we can have a choice to select options by which each option realy have huge size of programming codes.

Like Array of LInked List, how should i put that program in the whole fuse program in the menu.

Plz help me how to do this.

For more clarrification, here is an output illustration:

/ *****MENU*****

Press:

1 to insert node at the beginning.

2 to insert node at the middle.

3 to delete the node.

4 for array of linked list

5 for doubly link list

6. for circularly linked list

7 append linked list

8 to exit./

so plz me here. Send me best websites that will give best and fit answers for my problem. Hope you can help me here..

The core of my problem is the concept of fusing or inserting the huge programs like circularly in a one program...

Thank you and Godbless

Plz do replies coz i need it this week!

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parsant tanwar

September 22, 2008 at 5:13

hi roldan dear if u have got reply or answer of this question plz pm
provide me also those link or solution
i m parsant tanwar an engineering student from india.
i m not able to understand link list concept properly up to now
so please provide me appropriate solution
thank you
have a good day

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abhinav2491

February 6, 2013 at 7:38

Sir you are doing a fantastic job and the articles covers everything i
need to know about structure and union. I found an equally informative article in form of
questions and answers. May this also help the readers to in-depth their knowledge. Take a
look...

<http://blog.purededucation.in/difference-between-structure-and-union>

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