#### Pointer in C

### What is a pointer?

A pointer is a variable that holds a memory address and points to the value at the address.

### Declaring and using pointers

declare a pointer, you must write down the data type of the pointer and \* in front of the name of the pointer.

Example:

float \*i;

To hold a memory address of another variable, you will use & operator.

Example:

float \*i;  
i = &x;

You will use the \* operator to dereference a pointer.

Example:

float x;  
float \*i;  
i = &x;

\*i=10;

printf("%f",x);

### Operations on a pointer

You can also perform operations on a pointer by using the arithmetic operators such as +, -, \*, and /.

Example:

int \*p;

int x=20;

p=&x;

printf("%d",(\*p)+10); //output the value of x variable added by 10

printf("%x",p+1);//output the address of x variable added by 1

### A Pointer to an array

A pointer can be used to point an array. The pointer will point to the address of the first element of the array. If you don't know the array, please read this page: [C Array.](http://www.worldbestlearningcenter.com/index_files/c_arrays.htm)

Example:

float \*p;

float data[]={12,34,45,56,34};

p=data;

printf("%d",\*p);

To point to the subsequent elements of the array you need to increase the address that the pointer points to by one.

Example:

int i;

for(i=0;i<5;i++)

printf("%d",\*(p+i));

### An array of pointers

You can create an array to store a collection of pointers. This is called the array of pointers.

Example:

int \*values[5];

int x=100;

values[0]=&x;

printf("%d",\*values[0]);