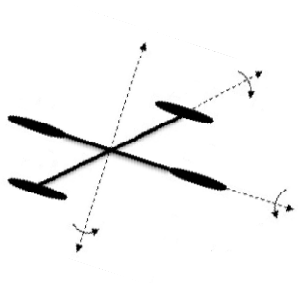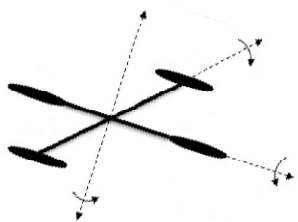# 포 인 터

- 포인터 변수 (pointer) : 메모리 번지를 값으로 가지는 변수

```
dataType *pVarName;
```

```
int *pCount;
```

```
int area = 1;
double *pArea = &area; // 잘못된 경우
```
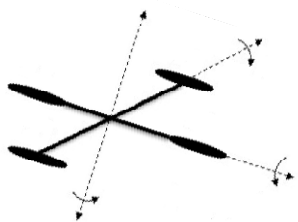
포이터는 초기화가 필수.

```cpp
#include <iostream>
using namespace std;

int main()
{
  int count = 5;
  int *pCount = &count;

  cout << "The address of count is " << &count << endl;
  cout << "The address of count is " << pCount << endl;
  cout << "The value of count is " << count << endl;
  cout << "The value of count is " << *pCount << endl;

  return 0;
}
```
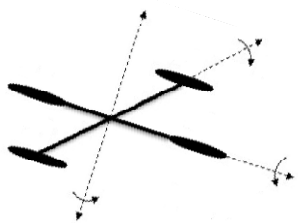
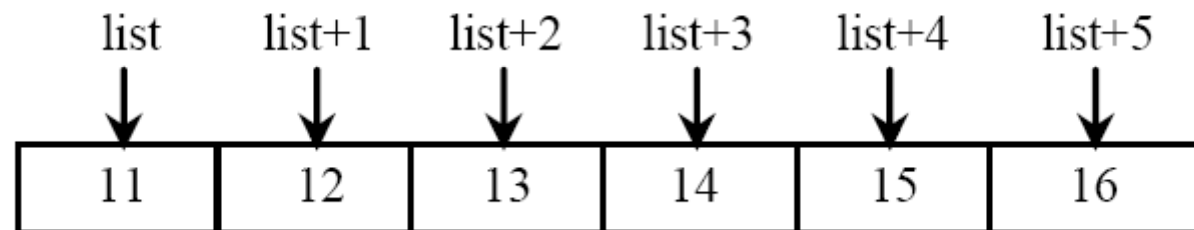```
C:\Dev-Cpp\Project1.exe

The address of count is 0x22ff74
The address of count is 0x22ff74
The value of count is 5
The value of count is 5
계속하려면 아무 키나 누르십시오 . . . .
```

- 배열과 포인터



int list[6] = {11, 12, 13, 14, 15, 16};

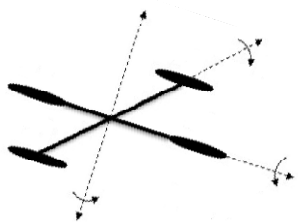| list | list+1 | list+2 | list+3 | list+4 | list+5 |
|------|--------|--------|--------|--------|--------|
| 11 | 12 | 13 | 14 | 15 | 16 |

```cpp
#include <iostream>
using namespace std;

int main()
{
  int list[6] = {11, 12, 13, 14, 15, 16};
  int *pList = &list[0];

  for (int i = 0; i < 6; i++)
    cout << "address: " << (list + i) <<
      " value: " << *(list + i) << " " <<
      " value: " << list[i] << " " <<
      " value: " << *(pList + i) << " " <<
      " value: " << pList[i] << endl;

  return 0;
}
```

```
C:\Dev-Cpp\Project1.exe

address: 0x22ff50 value: 11   value: 11   value: 11   value: 11
address: 0x22ff54 value: 12   value: 12   value: 12   value: 12
address: 0x22ff58 value: 13   value: 13   value: 13   value: 13
address: 0x22ff5c value: 14   value: 14   value: 14   value: 14
address: 0x22ff60 value: 15   value: 15   value: 15   value: 15
address: 0x22ff64 value: 16   value: 16   value: 16   value: 16
계속하려면 아무 키나 누르십시오 . . .
```

```cpp
#include <iostream>
using namespace std;

int * reverse(const int * list, int size)
{
  int *result = new int[size];

  for (int i = 0, j = size - 1; i < size; i++, j--)
  {
    result[j] = list[i];
  }

  return result;
}

void printArray(const int *list, int size)
{
  for (int i = 0; i < size; i++)
    cout << list[i] << " ";
}

int main()
{
  int list[] = {1, 2, 3, 4, 5, 6};
  int *pList = reverse(list, 6);
  printArray(pList, 6);

  return 0;
}
```
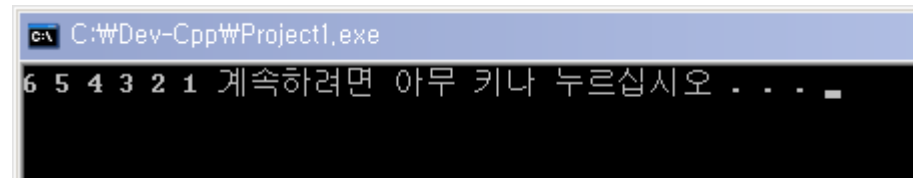
C:\Dev-Cpp\Project1.exe

6 5 4 3 2 1 계속하려면 아무 키나 누르십시오 . . .

```cpp
#include <iostream>
using namespace std;
int Max(int *num,int *counts );
int main()
{
    int num[]={8,54, 11,-45,43,26,66,12,33, 65};
    int n=sizeof(num)/sizeof(int);
    cout<<"*counts 값: "<<n<<"    주소: "<<&n<<endl;
    cout<<"최대값 :"<<Max(num, &n)<<endl;  //&n <-- 주소를 넘긴다.
    cout<<"\n--------------------------"<<endl;
    system("PAUSE");        //기다림
    return EXIT_SUCCESS;   //EXIT_SUCCESS    0
}
//&n을 counts로 받는다. counts 주소에 있는 값--> *counts
int Max(int *num,int *counts ){
    cout<<"*counts 값: "<<*counts<<"    주소: " <<&counts<<"  != 참조주소: "<<counts<<endl;
    int max=num[0];
    for(int i=1;i<*counts;i++){
            if(num[i]>max){
                max=num[i];
            }
    }
    return max;
}
```
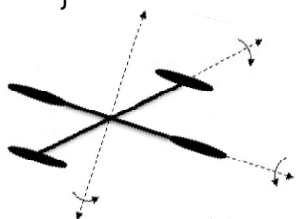
```
D:\MyDocu\MyJOB\컴퓨터언어응용\초보자를 위한 C++ 200제\046\main.

*counts 값: 10     주소: 0x22ff3c
*counts 값: 10     주소: 0x22ff04  != 참조주소: 0x22ff3c
최대값 :66

----------------------------------
계속하려면 아무 키나 누르십시오 . . .
```