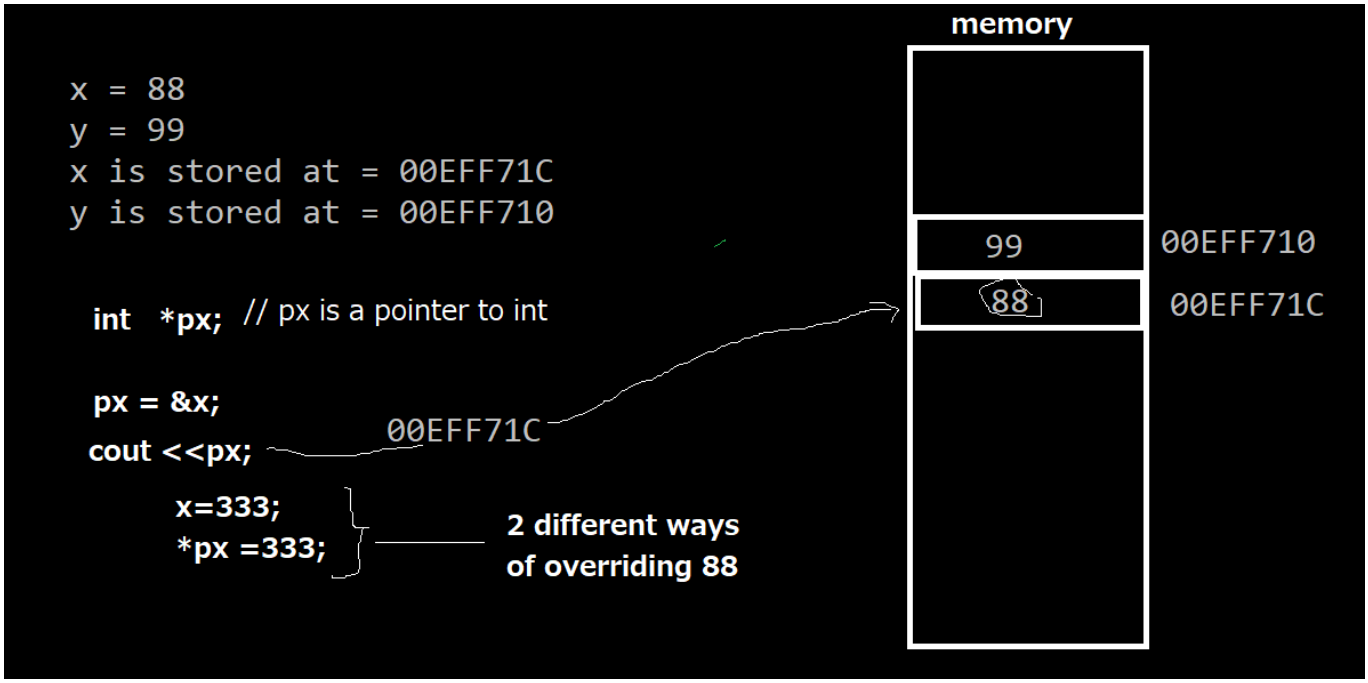
Pointer

Pointers are used **to store and manage the addresses of dynamically allocated blocks of memory**.

```
        int x = 88;
        int y = 99;

        cout << "x = " << x << endl;
        cout << "y = " << y << endl;

        cout << "x is stored at = " << &x << endl;
        cout << "y is stored at = " << &y << endl;

        //declare a pointer to int
        int* px;

        //assign pointer to point x
        px = &x;

        //change value of x by px
        *px = 33;

        cout << "x = " << x << endl;
        cout << "x is stored at = " << &x << endl;
```

Output:

```
x = 88
y = 99
x is stored at = 00000026F48FFAD4
y is stored at = 00000026F48FFAF4
x = 33
x is stored at = 00000026F48FFAD4
```



Arrays with pointer

```cpp
int  a[4] = {11,22,33,44};

cout << a[0] << " is stored at " << &a[0] << endl;
cout << a[1] << " is stored at " << &a[1] << endl;
cout << a[2] << " is stored at " << &a[2] << endl;
cout << a[3] << " is stored at " << &a[3] << endl;

cout << a << endl;

int* p;
p = a;

cout << *p << endl;  // 11
p += 2;
cout << *p << endl;  // ??
```

Output:

```
11 is stored at 00000099E6DFFC88
22 is stored at 00000099E6DFFC8C
33 is stored at 00000099E6DFFC90
44 is stored at 00000099E6DFFC94
00000099E6DFFC88
11
33
```