

# Pointers

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## 1 Defintion

**Pointer:** a variable that stores the memory of another variable

```
int x = 10;  
int* p = &x;
```

the above allows for us to store the memory location of x on p

## 2 Properties

### Declaration

- **int\* \_\_** // Is used to emphasize that the variable being declared is a pointer of some type (i.e. int, double, short)
- **= &\_\_** // Returns/pulls the memory address of a specific variable

In combination **int\*p = &x;** returns the address of x and stores it within p

### The Dereference Operator (\*)

```
#include <iostream>  
using namespace std;  
  
int x = 10;  
int* p = &x; /*p = x = 10  
cout << *p; //outputs 10
```

The “dereferenced” **p** can now reassign **x** in the opposite way as well; as they share the same address.

```
int x = 10;  
int* p = &x; // *p = x = 10  
*p = 15;     // *p = 15 = x
```