Pointers

ECGR2104

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Notes: Theory

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 namspace 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
```