Hack postgres Source Code: Vol I

Chapter 1 : C & Rust

1.38 NULL Pointer - C

If we just leave pointer with only declaration (without assigning any value), it points to some garbage/random memory location in RAM. And, there is possibility that one can playaround (I don't know how ;-)) with those garbage/random memory address.

```
#include <stdio.h>

int main() {

    int *p;

    printf("%d at %p", *p, p);
    return 0;

}
```

So, to make everyting under our control regarding pointers in some aspects, we can initialize pointer with `NULL` to represent that the pointer is pointing to no memory address. When we do this, C prohibits dereferencing of `NULL` pointer, if you do so, you will get an error. Its like.. we are creating a pointer pointing to no memory address(I believe) and whenever we want to use it.. we just do NULL check using conditionals such as `if` and assign memory address.

```
#include <stdio.h>

int main() {

    int *p = NULL;

    printf("%d at %p", *p, p);
    return 0;

}
```

```
#include <stdio.h>

int main() {

    int *p = NULL;
```

```
    int a = 10;

    if (p == NULL) {
        p = &a;
    }

    printf("%d at %p", *p, p);
    return 0;

}
```