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Week 14

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Week 14 Lecture Notes

## Recursion

Recursion is the act of a function calling itself. It is a form of code reuse, and works by reducing a problem to its smallest/simplest case. A recursive function must always have a default return value so it does not call itself infinitely.

Ex:

```
int recur(int x) {  
    return recur(x--);  
}
```

## One way and two way recursion

Essentially, one way recursion is a form of recursion where a function simply calls itself. In contrast, a two way recursive function returns a call to itself. The main reason to use one over the other depends on the use case and involvement of calling other functions.

Ex:

```
int recur(int x) {  
    recur(x--); //One way  
}
```

```
int recur(int x) {  
    return recur(x--); //Two way  
}
```