class06

MY first function :-)

```
ADD <- function(x, y=1) {
  x+y
}
```

Can I just use it?

```
ADD(13, 17)
```

```
[1] 30
```

```
ADD(x=1, y=100)
```

```
[1] 101
```

```
ADD(c(100, 1, 100), 1)
```

```
[1] 101   2 101
```

```
ADD(10)
```

```
[1] 11
```

A second function

Let's try something more interesting

```
#generate_DNA <- function() {
bases <- c("A", "T", "C", "G")
sequence <- sample(bases, size=10, replace=TRUE, prob=NULL)
```

That is my wee working snippet, now, I can make it into a function.

```
generate_DNA <- function(length){
  bases <- c("A", "T", "C", "G")
  sequence <- sample(bases, size=length,
                     replace=TRUE)
  return(sequence)
}
```

```
generate_DNA(length=10)
```

```
 [1] "A" "A" "A" "T" "T" "T" "A" "C" "C" "G"
```

```
aa <- unique(bio3d::aa.table$aa1)[1:20]
sequence <- sample(aa, size=10, replace=TRUE, prob=NULL)
```

Theres diff chemistry of repeat amino acids

Generate a protein sequence with 10 amino acids.

```
generate_prot <- function(length){
  aa <- unique(bio3d::aa.table$aa1)[1:20]
  sequence <-sample(aa, size=length, replace=TRUE, prob=NULL)
sequence <- paste(sequence, collapse = "") #make the string a phrase without any spaces, con
  return(sequence)

}
```

Generate random protein sequences of length 6 to 12

```
answer <- sapply(6:12, generate_prot)
answer
```

```
[1] "CDNPDW"       "YKKHVKT"      "QFSRWLGW"     "CLETQFERD"    "WNFWQPDPEG"
[6] "TNACNDGEAMV"  "ANSEAQVVGGLC"
```

```r
paste(c("barry", "alice", "amy", "chandra"), "loves R",sep="")
```

```
[1] "barryloves R"   "aliceloves R"   "amyloves R"     "chandraloves R"
```

```r
cat(paste(">id.", 6:12, "\n", answer, sep=""), sep="\n")
```

```
>id.6
CDNPDW
>id.7
YKKHVKT
>id.8
QFSRWLGW
>id.9
CLETQFERD
>id.10
WNFWQPDPEG
>id.11
TNACNDGEAMV
>id.12
ANSEAQVVGGLC
```