Class06

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My first function

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

```
add(1,1)
```

```
[1] 2
```

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

```
[1] 101
```

```
add(c(100, 1, 100),1)
```

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

```
add(10)
```

```
[1] 11
```

```
add(10,10)
```

```
[1] 20
```

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

generate_DNA(10)
```

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

```
unique(bio3d::aa.table$aa1)[1:20]
```

```
 [1] "A" "R" "N" "D" "C" "Q" "E" "G" "H" "I" "L" "K" "M" "F" "P" "S" "T" "W" "Y"
[20] "V"
```

```
generate_protein<-function(length){
bases<-c(unique(bio3d::aa.table$aa1)[1:20])
sequence<-sample(bases, size=length,
                 replace=TRUE)
 sequence<-paste(sequence, collapse="")
 return(sequence)
}

generate_protein(10)
```

```
[1] "FYDKPSMDVW"
```

```
#sequence was override by paste, collapse="" eliminated quotations between AAs
```

Generate sequences of length 6 to 12

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

```
[1] "CQYVWE"       "DNFCREM"      "LDEGLCKI"     "RCEKSVEWT"    "RQVCITRQLF"
[6] "IQWWQARPHNG"  "GSVLMDTDSSLV"
```

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

```
>id.6
CQYVWE
>id.7
DNFCREM
>id.8
LDEGLCKI
>id.9
RCEKSVEWT
>id.10
RQVCITRQLF
>id.11
IQWWQARPHNG
>id.12
GSVLMDTDSSLV
```