Class16

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> Q. What does the star character accomplish here? Ask Barry, or your class neighbor, if you are not sure!

a powerful tool in shell commands to match multiple files or directories based on a pattern, in this case the .faa.gz

> Q. How many sequences are in this mouse.1.protein.faa file? Hint: Try using grep to figure this out...

> Q. What happens if you run the above command without the > mm-first.fa part?

If you run the command without the > mm-first.fa part, the first 11 lines of the mouse.1.protein.faa file will be printed directly to your terminal.

> Q. What happens if you were to use two '>' symbols (i.e. » mm-first.fa)?

Adds the new output to the end of the existing file.

Reading Table

```
b <- read.table("myresults.tsv", sep="\t", header=TRUE)
head(data)
```

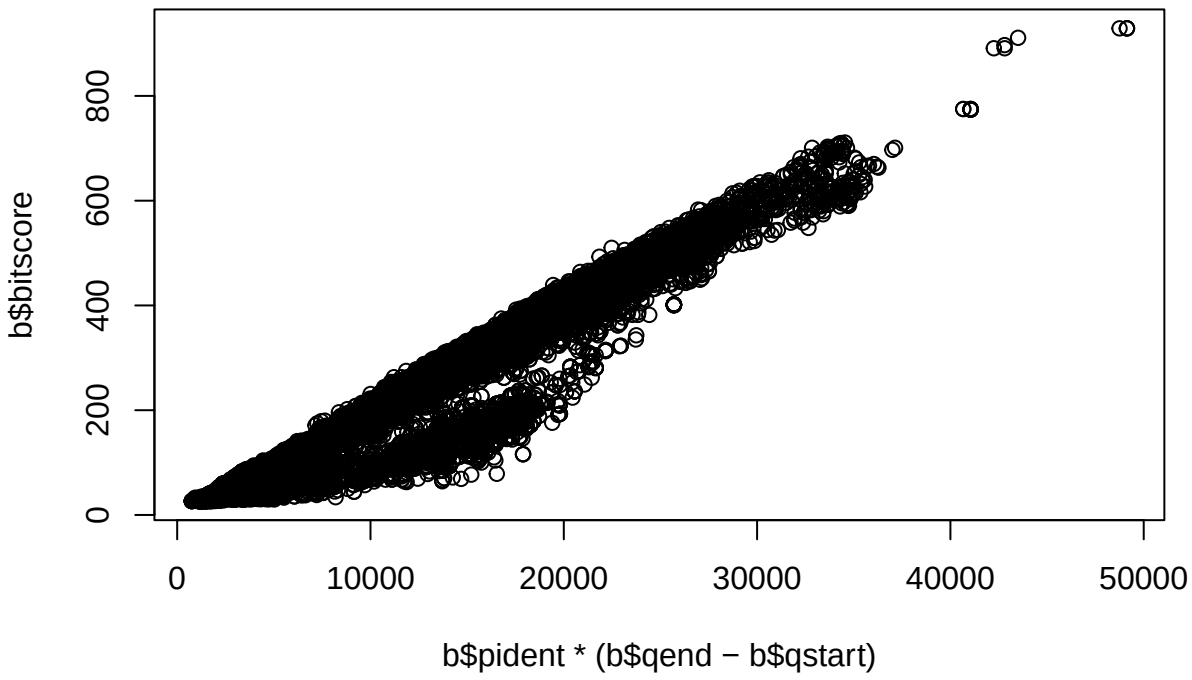
```
##
## 1 function (..., list = character(), package = NULL, lib.loc = NULL,
## 2     verbose = getOption("verbose"), envir = .GlobalEnv, overwrite = TRUE)
## 3 {
## 4     fileExt <- function(x) {
## 5         db <- grepl("\\\\.[^.]+\\\\.(gz|bz2|xz)$", x)
## 6         ans <- sub(".*\\\\.", "", x)
```

Setting Colnames

```
colnames(b) <- c("qseqid", "sseqid", "pident", "length", "mismatch", "gapopen", "qstart", "qend", "ssta
```

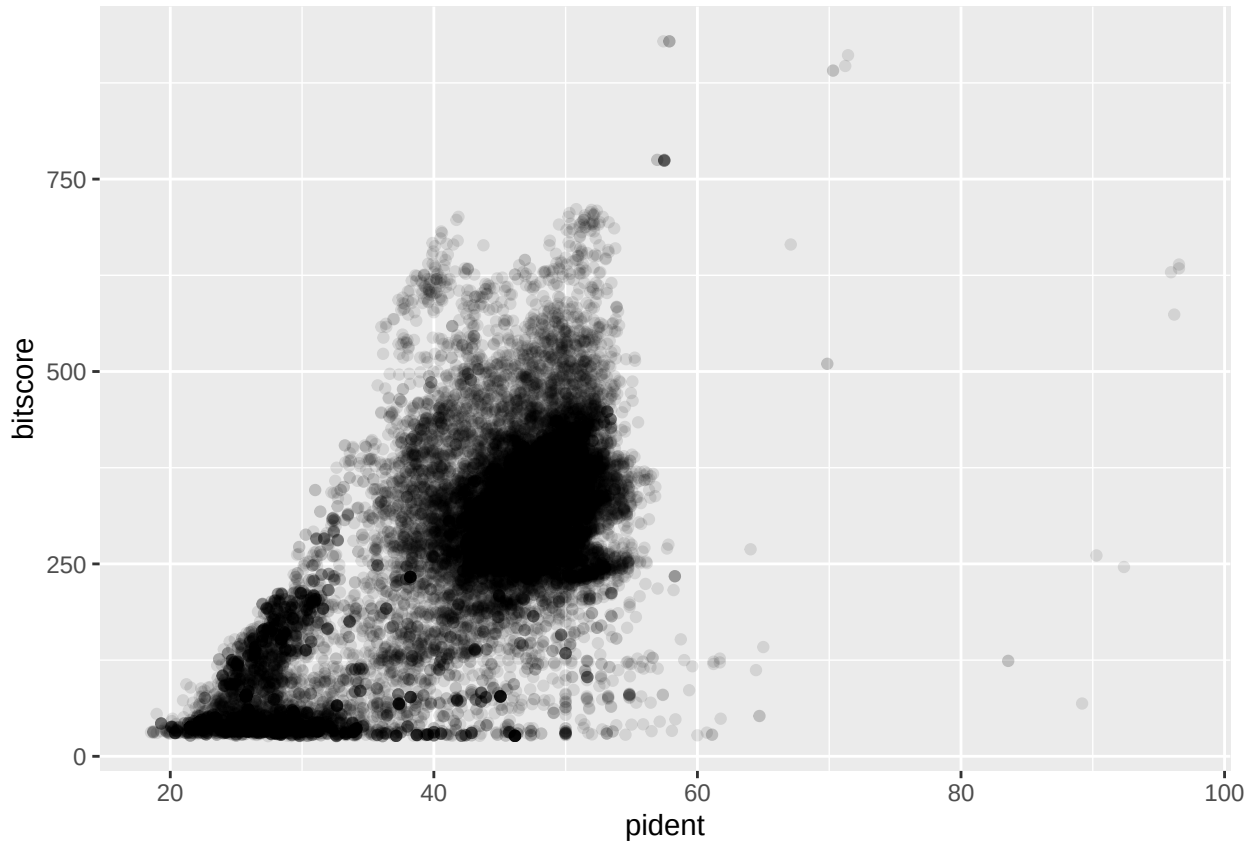
Plot() Function

```
plot(b$pident  * (b$qend - b$qstart), b$bitscore)
```



GGPlot

```
library(ggplot2)
ggplot(b, aes(pident, bitscore)) + geom_point(alpha=0.1)
```




```
ggplot(b, aes((b$pident * (b$qend - b$qstart)), bitscore)) + geom_point(alpha=0.1) + geom_smooth()
```

```
## Warning: Use of `b$pident` is discouraged.
## i Use `pident` instead.
```

```
## Warning: Use of `b$qend` is discouraged.
## i Use `qend` instead.
```

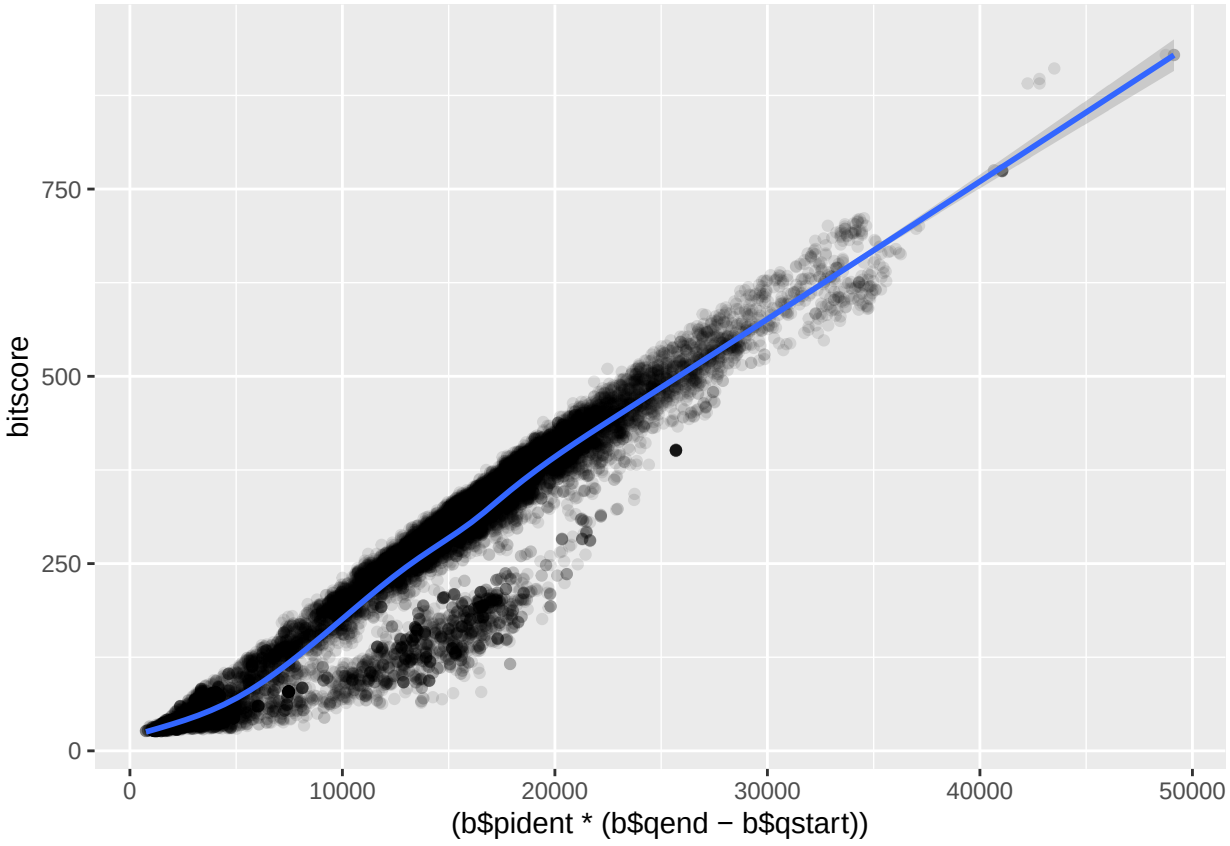
```
## Warning: Use of `b$qstart` is discouraged.
## i Use `qstart` instead.
```

```
## Warning: Use of `b$pident` is discouraged.
## i Use `pident` instead.
```

```
## Warning: Use of `b$qend` is discouraged.
## i Use `qend` instead.
```

```
## Warning: Use of `b$qstart` is discouraged.
## i Use `qstart` instead.
```

```
## `geom_smooth()` using method = 'gam' and formula = 'y ~ s(x, bs = "cs")'
```


bitscore
750
500
250
0
0
10000
20000
30000
40000
50000
(b$pident * (b$qend − b$qstart))