class16:graphing the tsv

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Reading in file from virtual computer

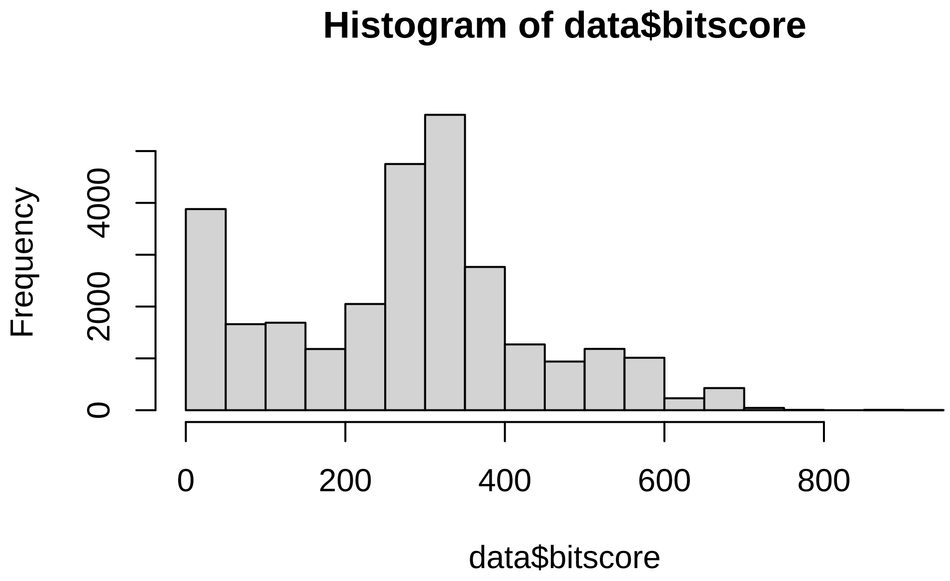
```
data <- read.delim("mm-second.x.zebrafish.tsv", sep = "\t")
```

Renaming columns

```
colnames(data) <- c("qseqid", "sseqid", "pident", "length", "mismatch", "gapopen", "qstart
head(data)
```

```
       qseqid         sseqid pident length mismatch gapopen qstart qend sstart
1 NP_598866.1 NP_001313634.1 46.154    273      130       6      4  267    476
2 NP_598866.1 XP_009294513.1 46.154    273      130       6      4  267    475
3 NP_598866.1 NP_001186666.1 33.071    127       76       5      4  126    338
4 NP_598866.1 NP_001003517.1 30.400    125       82       4      4  126    344
5 NP_598866.1 NP_001003517.1 30.645     62       41       2     53  113     43
6 NP_598866.1    NP_956073.2 34.444     90       56       3     40  126    527
  send   evalue bitscore
1  740 4.51e-63    214.0
2  739 4.69e-63    214.0
3  459 5.19e-12     67.8
4  465 2.67e-11     65.5
5  103 4.40e-01     33.9
6  616 1.70e-10     63.2
```

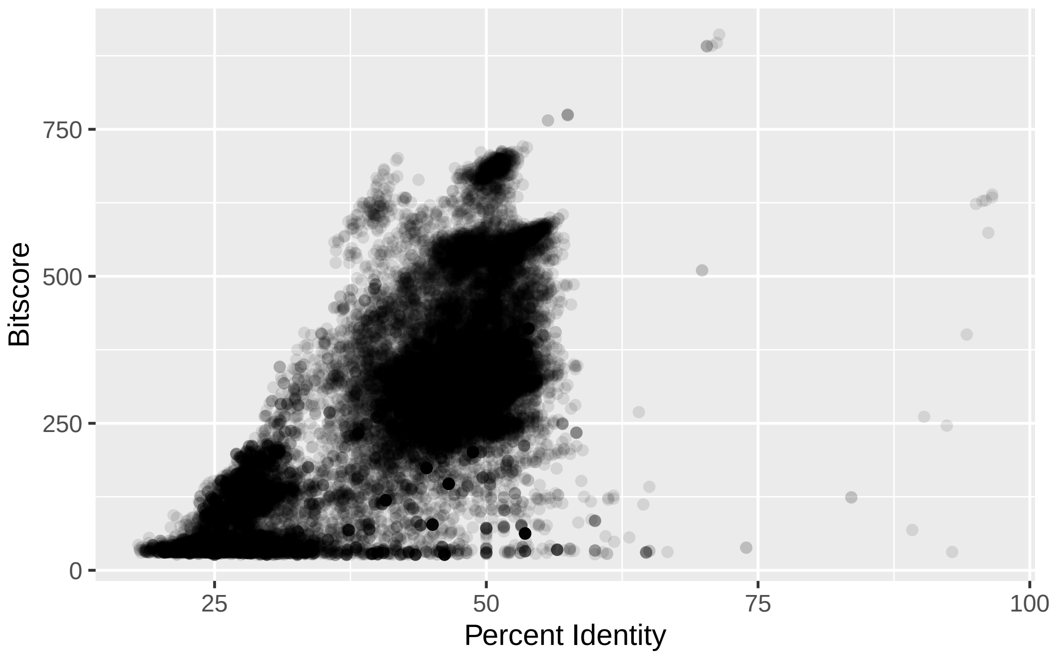
```
hist(data$bitscore, breaks = 30)
```



The data is not very normal, it is somewhat skewed towards lower bitscores. There are peaks around 250 and 50 making it somewhat binomial.

Making the tsv file plots

```r
library(ggplot2)
ggplot(data, aes(pident, bitscore)) + geom_point(alpha=0.1) +
  xlab("Percent Identity") +
  ylab("Bitscore")
```



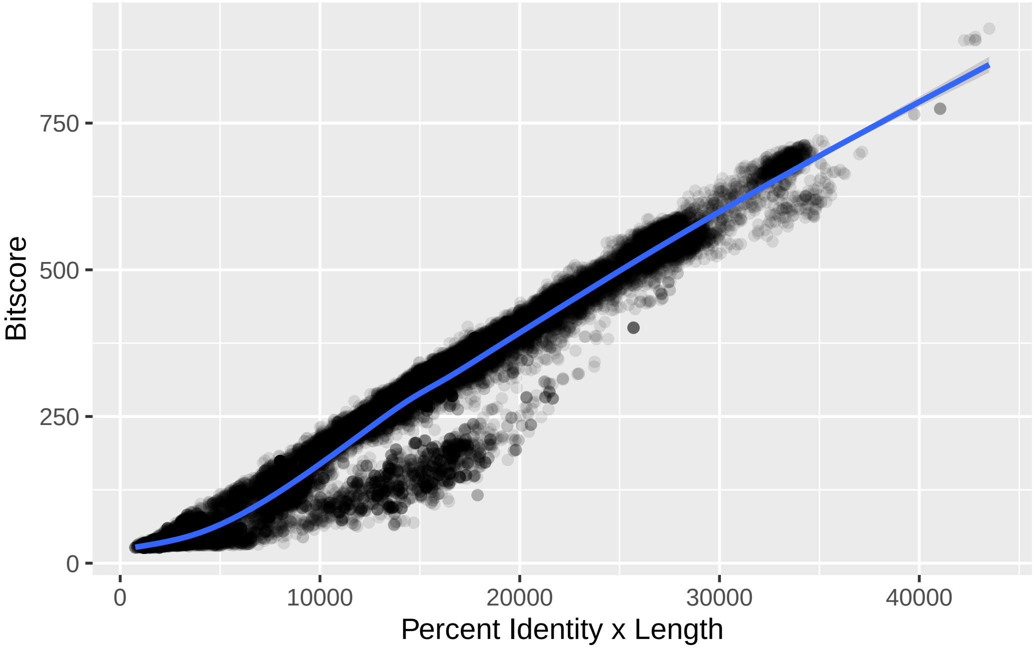
Looks like percent identiy and bitscore are not completely correlated with each other.

```r
ggplot(data, aes((data$pident * (data$qend - data$qstart)), bitscore)) + geom_point(alpha=
  xlab("Percent Identity x Length") +
  ylab("Bitscore")
```

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

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

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

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

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

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

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



This graph shows that the correlation between the percent identity and sequence length with the bitscores is very high and positive.