Input and output in R

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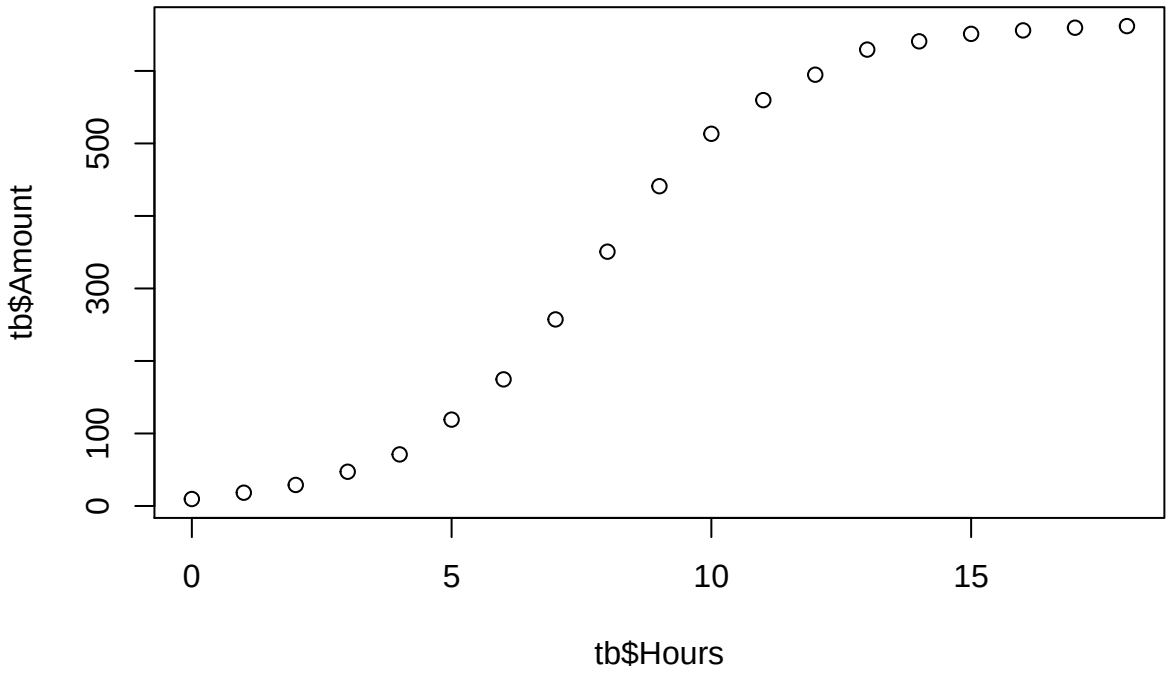
Read a data set of yeast growth curves

```
rm(list=ls()) #clearn my workspace
tb = read.csv("Carlson_Yeast.csv");
```

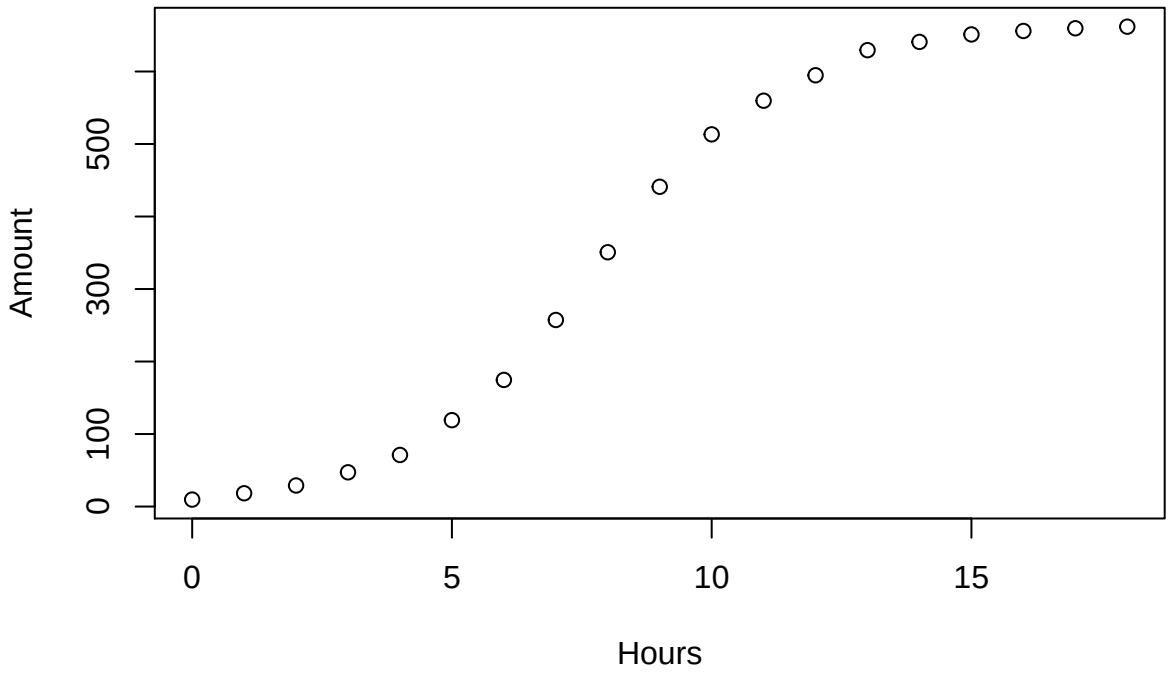
a simple plot

```
plot( tb$Amount ~ tb$Hours );
```

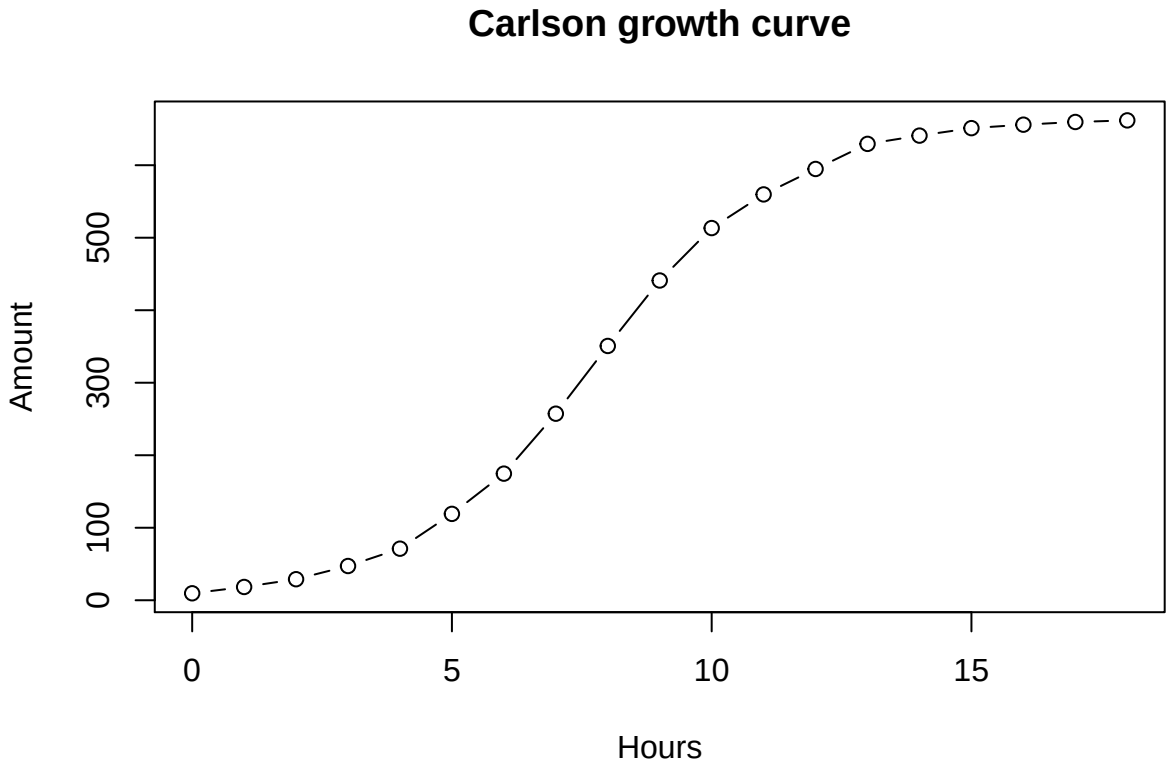


a better plot

```
plot( Amount ~ Hours, data=tb );
```



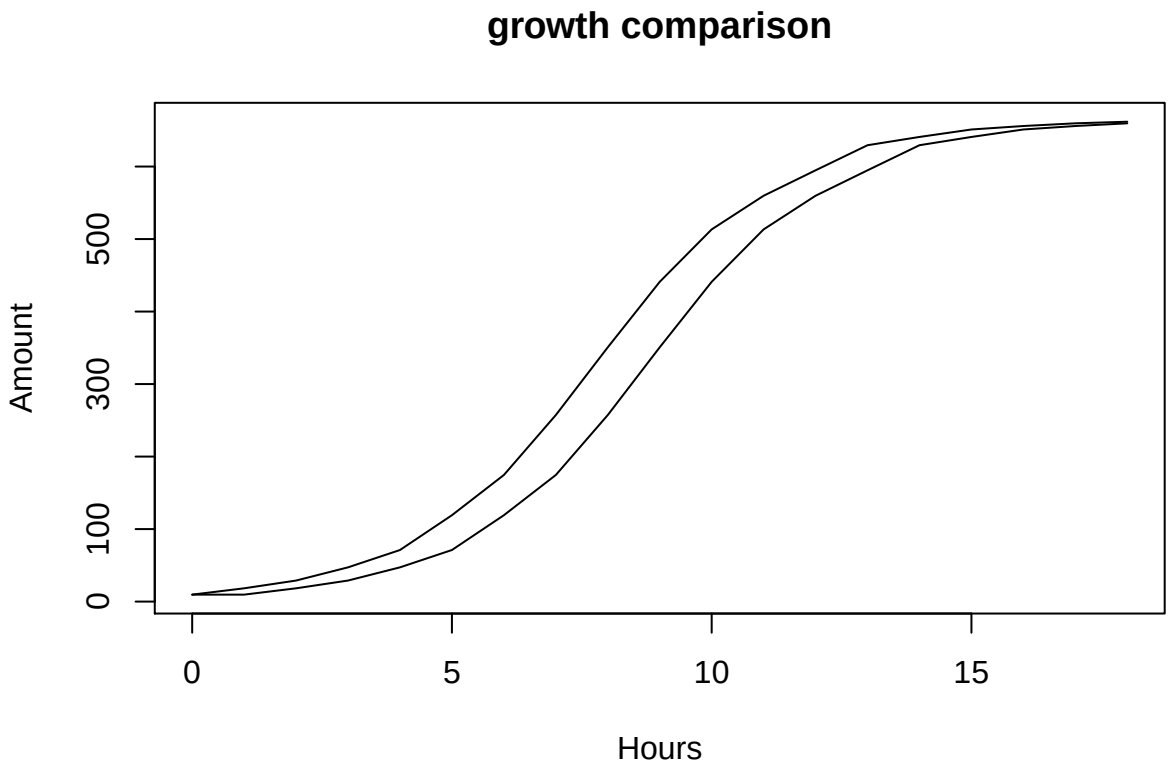

```
plot( Amount ~ Hours, data=tb, type="b",
   main="Carlson growth curve" );
```



Multiple data sets plotted in the same figure

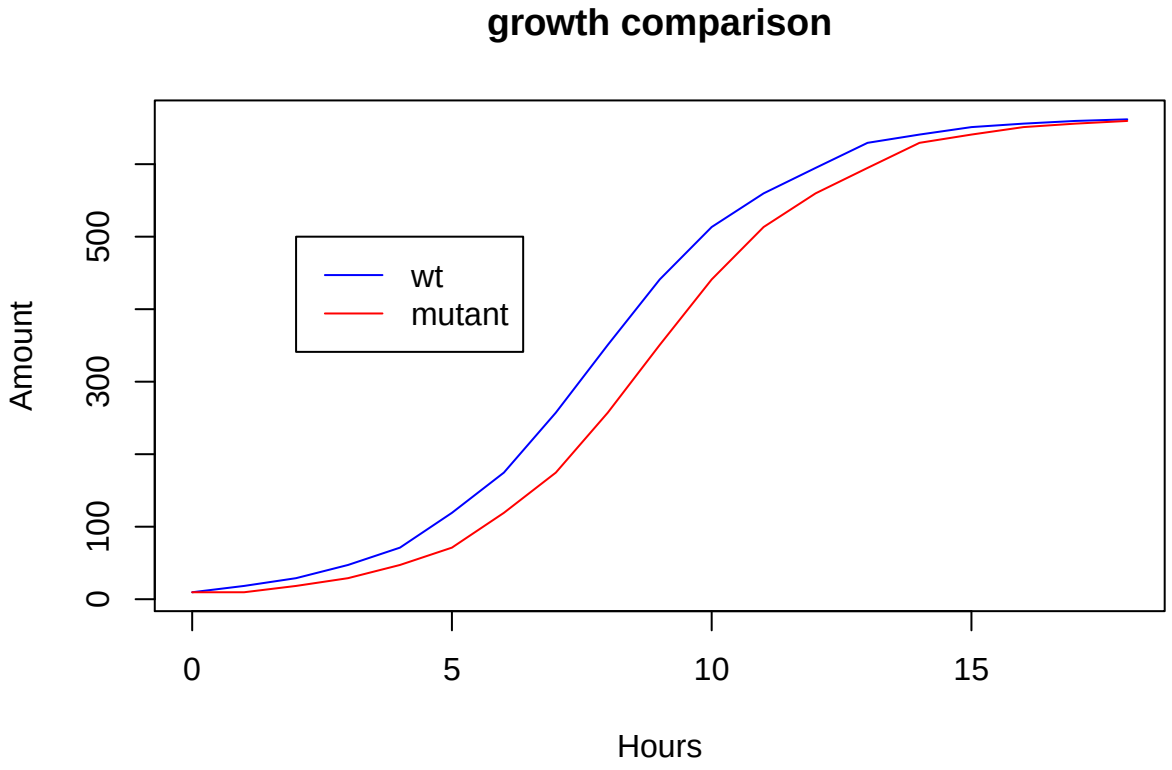
```
##### the second data set, multiple plots
 tb2 = read.csv( "Carlson2.csv" );
```

```r
##first try, not pretty
plot( tb2$Amount ~ tb2$Hours, ylab="Amount",xlab="Hours",type="l",
   main="growth comparison");
lines( tb2$Amount2 ~ tb2$Hours );
```



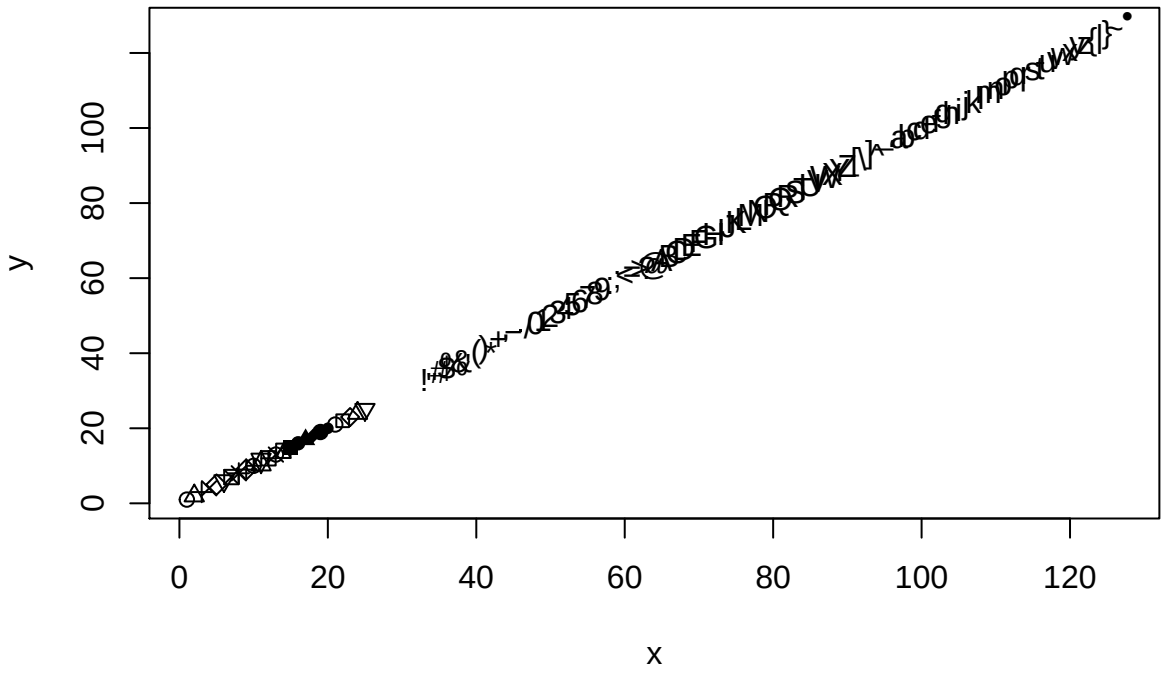

```r
##now, let's add colors
plot( tb2$Amount ~ tb2$Hours, ylab="Amount",xlab="Hours",type="l",
   main="growth comparison", col="blue");
lines( tb2$Amount2 ~ tb2$Hours, col="red" );

##add legends
legend(2,500,c("wt","mutant"), col=c("blue","red"), lwd=c(1,1) )
```



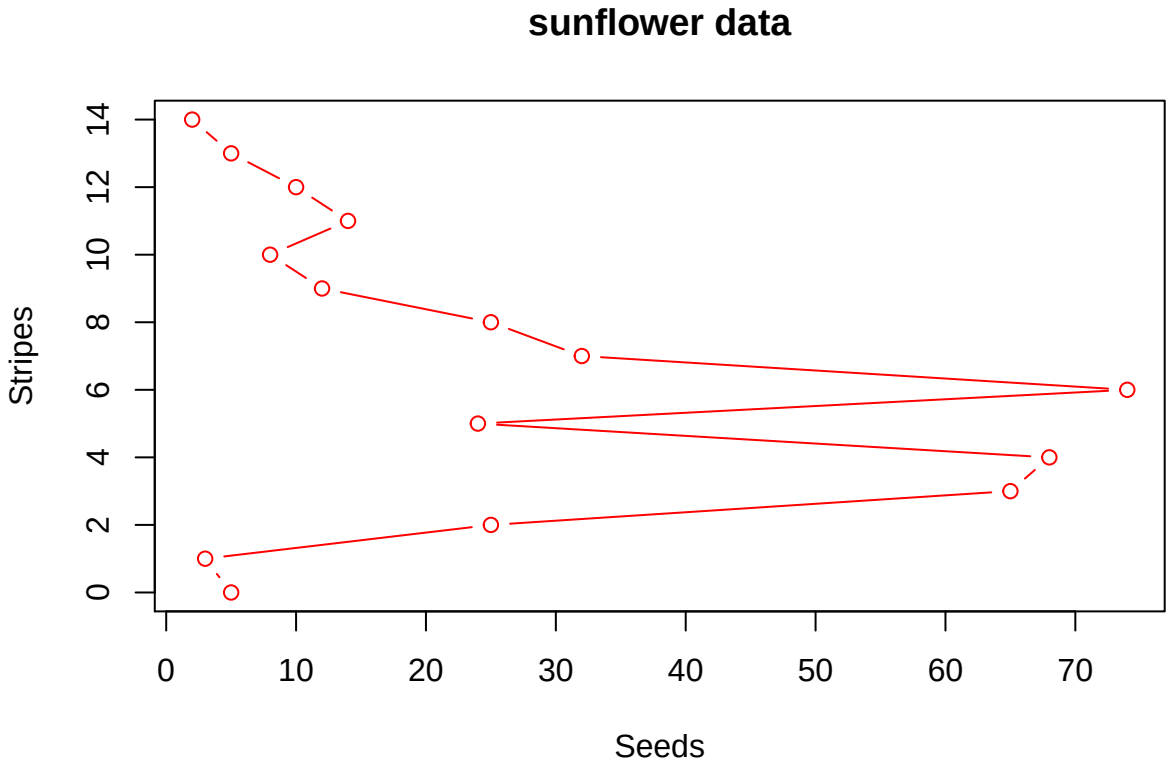

```
x = 1:127
y = 1:127
plot( y ~x, pch=x)
```

```
## Warning in plot.xy(xy, type, ...): unimplemented pch value '26'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '27'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '28'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '29'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '30'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '31'
## Warning in plot.xy(xy, type, ...): font width unknown for character 0x7f
## Warning in plot.xy(xy, type, ...): font metrics unknown for character 0x7f
```




```
##### plot sunflower seed data
 sunflower = read.csv("SunflowerSeedData.csv");

 plot( sunflower$Stripes ~ sunflower$Seeds, ylab="Stripes"
       , xlab="Seeds", main="sunflower data", type="b"
       , col="red"
       )
```



Output to csv file

```
x= seq(1:30)
y= x^2;
write.csv(x, "x.csv", row.names=F)
write.csv(y, "y.csv", row.names=F)
output = cbind(x, y)
write.csv(output, "xy-20190530.csv", row.names=F)
plot( y ~ x, pch=x )
```

```
## Warning in plot.xy(xy, type, ...): unimplemented pch value '26'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '27'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '28'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '29'
## Warning in plot.xy(xy, type, ...): unimplemented pch value '30'
```