Introduction to R

Simple plots

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Outline

1 Plot types

Plot types

```
plot(x, y)
```
```
    plot(cars$speed, cars$dist)
```
```
barplot(x)
```
```
    barplot(cars$dist)
```
```
hist(x)
```
```
    hist(cars$dist)
```
```
boxplot(x)
```
```
    boxplot(cars$dist)
```

2 Interface

Plot interface

```
plot(x, y)
```
```
    plot(cars$speed, cars$dist)
```
```
plot(y~x, data=obj)
```
```
    plot(dist~speed, data=cars)
```
```
plot(obj)
```
```
    plot(cars) # data frame
    cars.lm <- lm(dist~speed, data=cars)
    par(mfrow=c(2,2))
    plot(cars.lm) # lm
```

3 Annotation

Plot annotation

```
points(x, y)
```

```
lines(x, y)
```

```
abline(a, b)
abline(obj)
abline(h)
abline(v)
```

```
text(x, y, label)
```

4 Details

Plot details

main	xlab	ylab	label
xlim	ylim		axis limits
lty	lwd		line
pch			symbol
col			color
cex			size
type			type

Colors

In S-Plus, the user specified a color using a number:

```
barplot(1, col=6)
```

In R, it's easiest to specify a color by its name:

```
barplot(1, col="darkgreen")
```

To show all recognized color names:

```
colors()
```

Multipanel

Rows and columns

```
par(mfrow=c(2, 3))

plot(0, main=1)
plot(0, main=2)
plot(0, main=3)
plot(0, main=4)
plot(0, main=5)
plot(0, main=6)
```

Help page

Complete list of all graphical parameters

```
?par
```

Example

```
plot(c(1,10), c(1,100),
    main="title", xlab="x", ylab="y",
    xlim=c(0,20), ylim=c(0,120),
    pch=3, lwd=5, col="orange", cex=2)


lines(c(5,15), c(50,60), lty=2, lwd=5, col="purple")
```

```
text(10, 20, "here", col="brown")
```

```
?par
```