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title: "R programming refresher"
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date: "7/11/2017"
output: ioslides_presentation
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```

LICENSE

```
```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = FALSE)
```
```

# First, a short refresher to R

## Variable Assignment

```
```{r}
x <- 5
y <- 10
x + y
```
```

## Vectors (one dimensional) and Matrices (two dimensional)

```
```{r}
x <- c(1, 4, 5)
x
y <- seq(from = 1, to = 3, by = 1)
y
x + y
```
```

## Get help on how to construct a matrix

```
```{r}
?matrix
A <- matrix(c(1, 2, 3, 11, 12, 13), nrow = 2, ncol = 3, byrow
= TRUE)
A
rbind(x, y)
A + rbind(x, y)
A[1, 3]
```

```
A[2, ]
A[, 1]
```
```

```
## Lists and names
```

```
```{r}
mylist <- list(`first` = x, `second` = y)
mylist
mylist[[1]]
mylist[["first"]]
# mylist[[3]]
length(mylist)
length(x)
dim(A)
```
```

```
# More advanced functionality: which, intersect, union
```

```
```{r}
?rnorm
```
```

```
## More advanced functionality: which, intersect, union
```

```
```{r}
a <- rnorm(20)
a
which(a > 0)
a[1]
a[which(a > 0)]
which(a < -1)
intersect(which(a > 0), which(a < -1))
combined <- union(which(a > 0), which(a < -1))
combined
length(combined)
```
```

```
## Simple plotting
```

```
```{r}
plot(a, col = "red")
plot(density(a))
hist(a)
plot(density(rnorm(1000)))
```
```

