Midterm Review
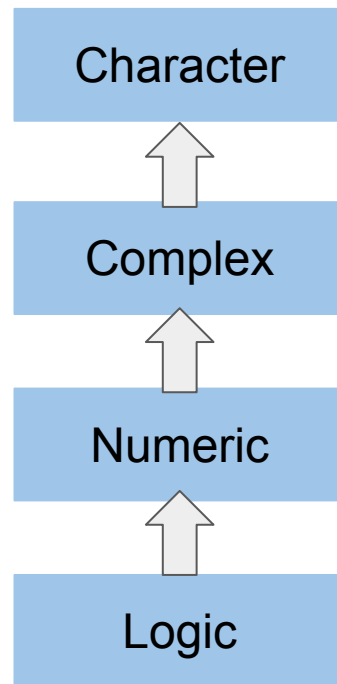
zhihan.fang@cs.rutgers.edu

Data type and Object Type

What would R say, if c("a",1,T) is entered to the console?

(a) [1] "a" "1" "TRUE"
(b) [1] "b" 1 T
(c) [1] "a" "1" "T"
(d) [1] "a" 1 T
(e) Something else

Character

↑

Complex

↑

Numeric

↑

Logic

Data type and Object Type

object	modes	several modes possible in the same object?
vector	numeric, character, complex *or* logical	No
factor	numeric *or* character	No
array	numeric, character, complex *or* logical	No
matrix	numeric, character, complex *or* logical	No
data frame	numeric, character, complex *or* logical	Yes
ts	numeric, character, complex *or* logical	No
list	numeric, character, complex, logical, function, expression, . . .	Yes

Par function

Par function is used to define
parameters of plot(graphics).

```
> x = c(1,2,3,4)
> par(fg="red",col.lab = 'green')
> barplot(x,col = c(1:4),xlab = "X Label")
```
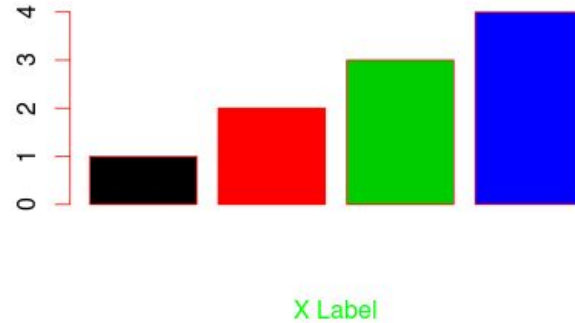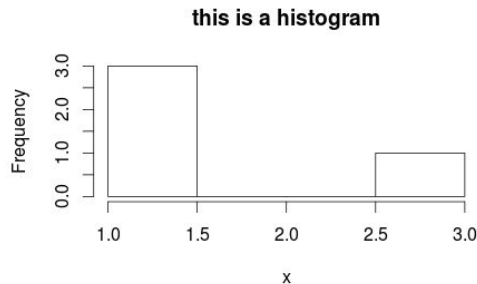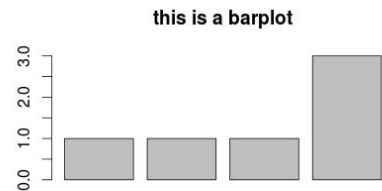
Histogram vs Barplot

Histogram plots based on frequency

Barplot plots based on value

numeric values are needed for both

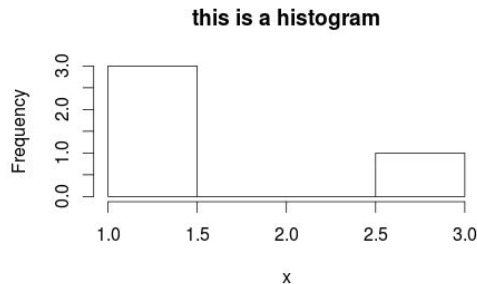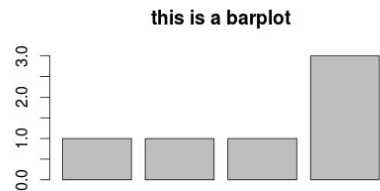this is a barplot

this is a histogram

Histogram vs Barplot

Histogram plots based on frequency

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```
> hist(x,main = "this is a histogram")
> barplot(x,main = "this is a barplot")
```


this is a barplot

this is a histogram

Subset by logical value

R support vector operation.

```
x <- c(18,28,38,48)
> x>18
[1] FALSE  TRUE  TRUE  TRUE
> x-1
[1] 17 27 37 47
```

We can use logical vector (TRUE,FALSE,TRUE, ...) to define the index we want to keep.

```
x <- c(18,28,38,48)
> x[c(TRUE,FALSE,TRUE,FALSE)]
[1] 18 38
```

Suppose v <- c(-1,0,3,2,-10) is entered into the R console. What would R say if you enter v[v>0]?

(a) [1] FALSE FALSE TRUE TRUE FALSE
(b) [1] -1 0 3 2 -10
(c) [1] 3 4
(d) [1] 3 2
(e) Something else.