Practical Exam

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1A. Find out, in a single command, which columns of warpbreaks are either numeric or integer. What are the data types of each column?

```
data("warpbreaks")
#column "breaks" integer data types and both column "wool" and " tension" have character data types
```

2A.How many observations does it have?

```
str(warpbreaks)
```

```
## 'data.frame':    54 obs. of  3 variables:
##  $ breaks : num  26 30 54 25 70 52 51 26 67 18 ...
##  $ wool   : Factor w/ 2 levels "A","B": 1 1 1 1 1 1 1 1 1 1 ...
##  $ tension: Factor w/ 3 levels "L","M","H": 1 1 1 1 1 1 1 1 1 2 ...
```

```
#54 observations
```

3A.s numeric a natural data type for the columns which are stored as such? Convert to integer when necessary.

```
integerwarpbreaks <- warpbreaks

integerwarpbreaks <- as.integer(warpbreaks)
```

```
## Error in eval(expr, envir, enclos): 'list' object cannot be coerced to type 'integer'
```

```
integerwarpbreaks <- as.integer(warpbreaks$wool)

integerwarpbreaks <- as.integer(warpbreaks$tension)
```

4A. Error messages in R sometimes report the underlying type of an object rather than the user-level class. Derive from the following code and error message what the underlying type. Explain what is the error all about. Do not just copy the error message that was displayed.

```
#there is an error that cannot b forced to become an integer because it is already an integer
```

1B. Read the complete file using readLines.

```
exampleFile <- readLines("/cloud/project/PractExam/exampleFile.txt")
```

```
## Warning in readLines("/cloud/project/PractExam/exampleFile.txt"): incomplete
## final line found on '/cloud/project/PractExam/exampleFile.txt'
```

```
exampleFile
```

```
## [1] "// Survey data. Created : 21 May 2013"
## [2] "// Field 1: Gender"
## [3] "// Field 2: Age (in years)"
## [4] "// Field 3: Weight (in kg)"
## [5] "M;28;81.3"
```

```
## [6] "male;45;"
## [7] "Female;17;57,2"
## [8] "fem.;64;62.8"
```

2B. Separate the vector of lines into a vector containing comments and a vector containing the data. Hint: use grepl.

```
vectorcomment <- exampleFile[grepl("//",exampleFile)]
vectorcomment
```

```
## [1] "// Survey data. Created : 21 May 2013"
## [2] "// Field 1: Gender"
## [3] "// Field 2: Age (in years)"
## [4] "// Field 3: Weight (in kg)"
```

```
vectordata <-  exampleFile[grepl(";",exampleFile)]
vectordata
```

```
## [1] "M;28;81.3"      "male;45;"       "Female;17;57,2" "fem.;64;62.8"
```