

What is a factor?

INTRODUCTION TO R FOR FINANCE



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Stocks or bonds?

Investment
stock
bond
bond
stock

Stocks or bonds?

Investment	
stock	= 2
bond	= 1
bond	= 1
stock	= 2

Stocks or bonds?

Investment
stock
bond
bond
stock

Factor creator

```
answers <- c("stock", "bond", "bond", "stock")  
investment <- factor(answers)  
investment
```

```
stock bond  bond  stock  
Levels: bond stock
```

```
class(investment)
```

```
"factor"
```

Factor creator

```
as.integer(investment)
```

```
2 1 1 2
```

```
levels(investment)
```

```
"bond" "stock"
```

cut() it up

- Ranking: 1-50
- 1 is worst, 50 is best

```
head(ranking)
```

```
36 45 32 10 42 8
```

```
buckets <- c(0, 10, 20, 30, 40, 50)  
ranking_grouped <- cut(ranking, breaks = buckets)  
head(ranking_grouped)
```

```
(30,40] (40,50] (30,40] (0,10] (40,50] (0,10]  
Levels: (0,10] (10,20] (20,30] (30,40] (40,50]
```

Let's practice!

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Ordering and subsetting factors

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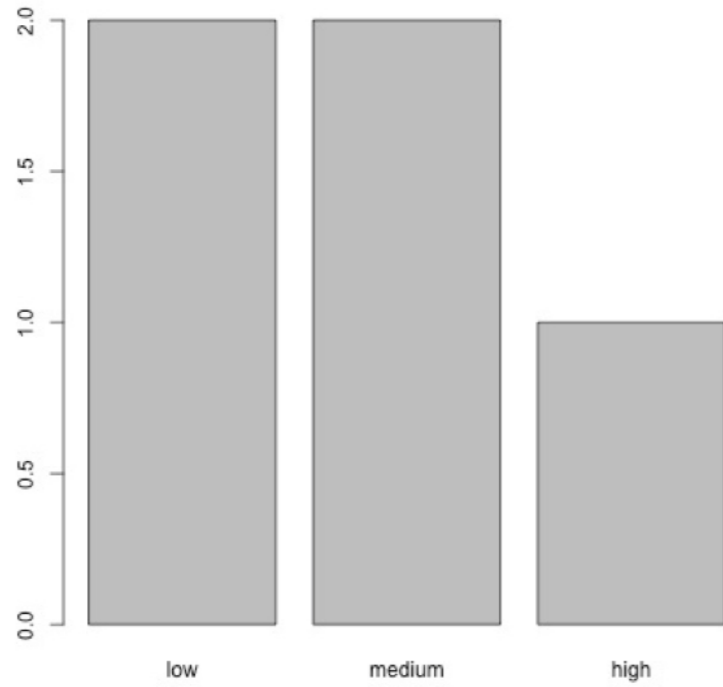


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Order it

- Low < Medium < High



How to order?

```
rank <- c("low", "medium", "low", "medium", "high")  
  
rank_wrong_order <- ordered(rank)  
  
rank_wrong_order
```

```
low      medium low      medium high  
Levels: high < low < medium
```

How to order?

```
rank_order <- factor(rank, ordered = TRUE,  
                     levels = c("low", "medium", "high"))  
rank_order
```

```
low    medium low    medium high  
Levels: low < medium < high
```

```
summary(rank_order)
```

```
low medium    high  
  2     2       1
```

Factor subsets

```
# Only low  
rank_order[c(1,3)]
```

```
low low  
Levels: low < medium < high
```

```
summary(rank_order[c(1,3)])
```

```
low medium high  
  2      0     0
```

Factor subsets

```
# Only low, drop medium and high levels  
rank_order[c(1,3), drop = TRUE]
```

```
low low  
Levels: low
```

```
summary(rank_order[c(1,3), drop = TRUE])
```

```
low  
  2
```

Let's practice!

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