R语言大作业

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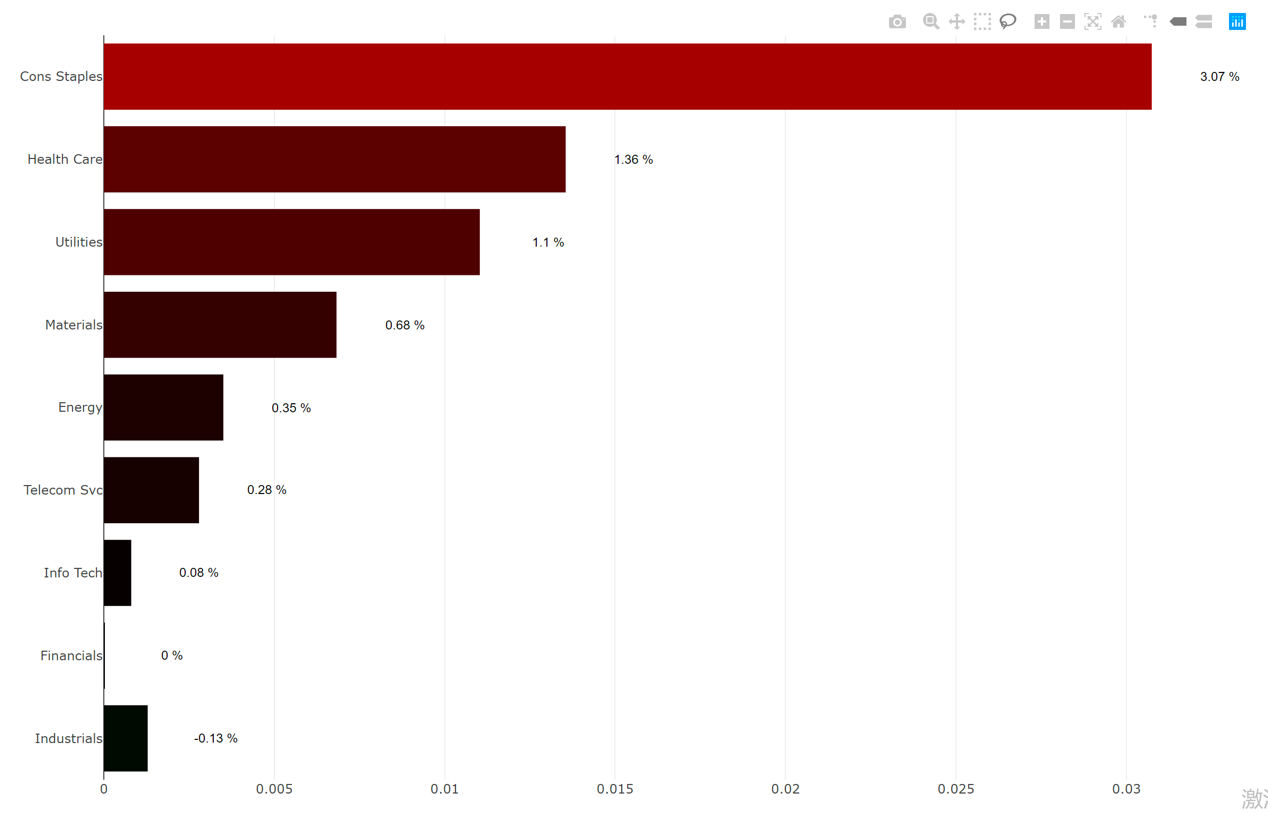
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## 实现功能

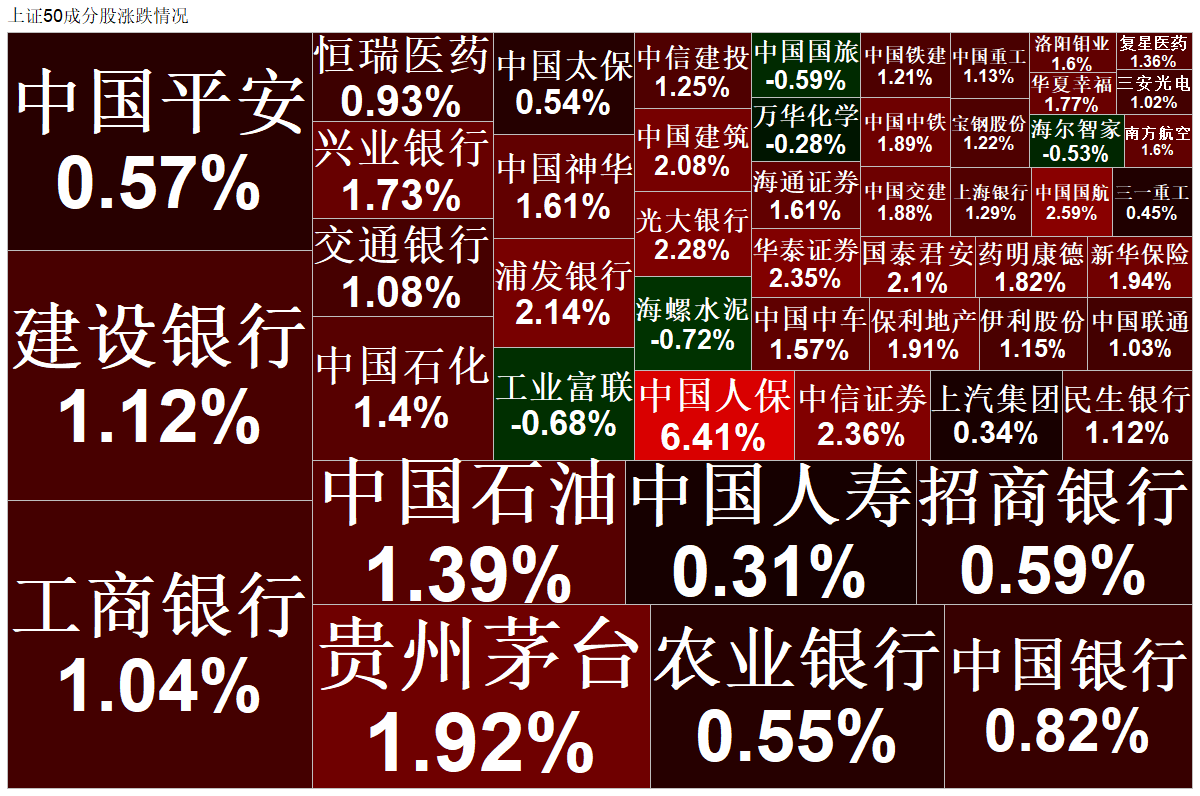
#### 1、蜡烛图



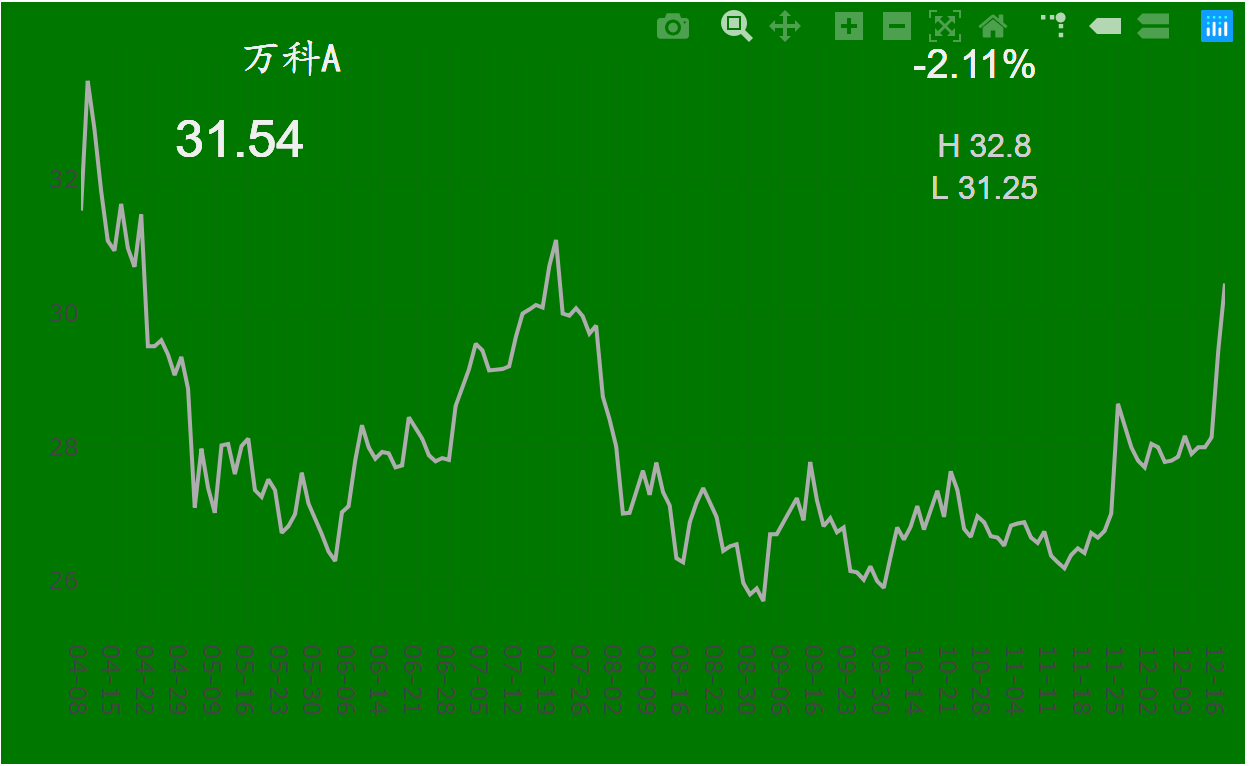
#### 2、柱形图



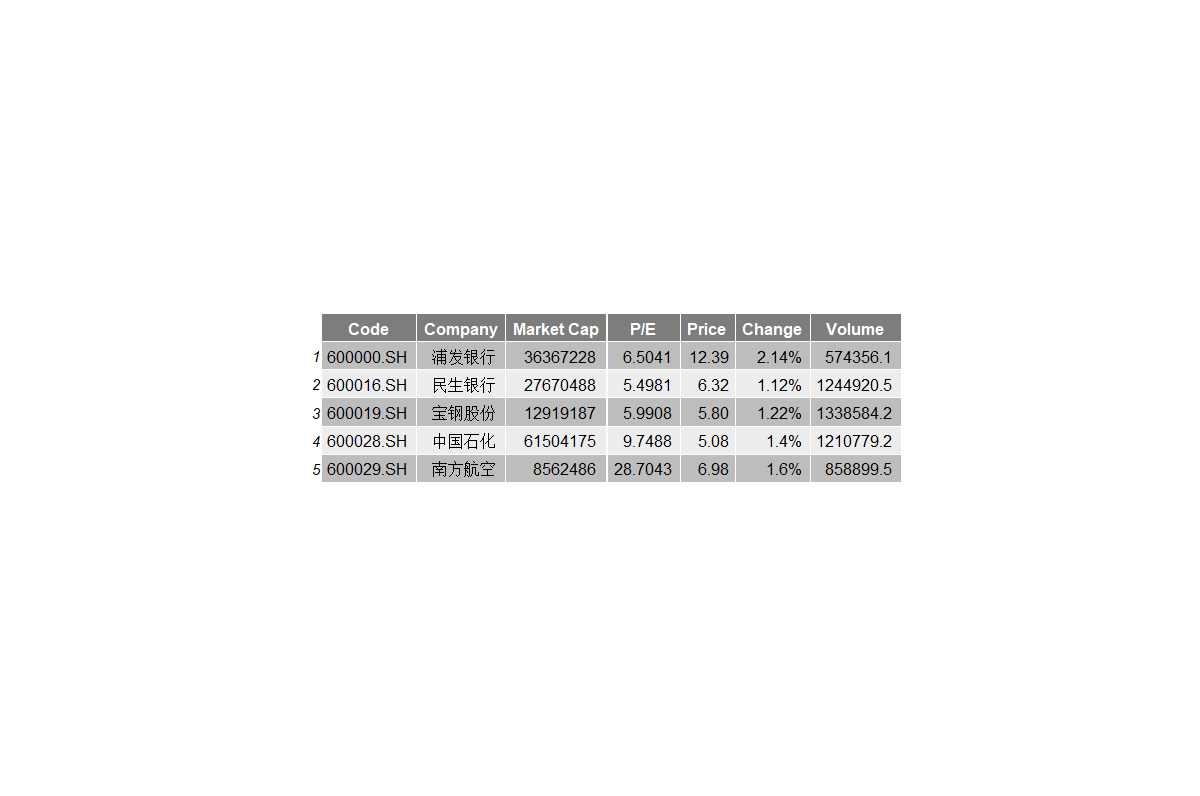
#### 3、树图



#### 4、折线图



#### 5、表格



## 代码实现

#### 1.蜡烛图代码

candlestick <- function(stock\_code="000001.SH",start\_date = '20190101', end\_date = today) {

Index <- tushare(api\_name = "index\_daily", ts\_code = stock\_code , start\_date = start\_date, end\_date = today,

fields='trade\_date,open,high,low,close')

Index$trade\_date<-as.Date(Index$trade\_date,"%Y%m%d")

#设置涨跌颜色

i <- list(line = list(color = '#f6416c'))

d <- list(line = list(color = '#7bc0a3'))

SSE\_candlestick <- Index %>%

plot\_ly(x = ~trade\_date, type="candlestick",

open = ~open, close = ~close,

high = ~high, low = ~low,

increasing=i,

decreasing=d) %>%

layout(title = "SSE Composite Index")

SSE\_candlestick

}

#### 2.柱形图代码

barchart <-function(start\_date = as.character(as.integer(today)-5),

end\_date = as.character(as.integer(today)-4),

industy\_index\_code=c('000908.SH','000909.SH','000910.SH',

'000912.SH','000913.SH','000914.SH',

'000915.SH','000916.SH','000917.SH'),

row\_names = c("Energy","Materials","Industrials",

"Cons Staples","Health Care","Financials",

"Info Tech","Telecom Svc","Utilities")

){

industy\_r <- data.frame()

#9个股票的收益率

for (code in industy\_index\_code){

ind\_index <- tushare(api\_name = "index\_daily", ts\_code = code, start\_date='20180830',end\_date =today)

industy\_r[code,"returns"] <- ind\_index$close[2]/ind\_index$close[1] - 1

}

row.names(industy\_r)<- row\_names

color <- function (x){

if (x > 0){

return(sprintf("rgb(%d,0,0)",floor(255\*(1-exp(-x\*30)))));

}

else if (x<=0){

return(sprintf("rgb(0,%d,0)",ceiling(255\*(1-exp(x\*30)))));

}

}

industy\_r["color"] = map\_chr(industy\_r$returns, color)

industy\_barchart <- plot\_ly(y = reorder(row.names(industy\_r), industy\_r$returns),

x = abs(industy\_r$returns),

marker =list(color = industy\_r$color),

type = 'bar',orientation = 'h') %>%

add\_annotations(xref = 'x1', yref = 'y',

x = abs(industy\_r$returns)+0.002 , y = row.names(industy\_r),

text = paste(round(industy\_r$returns\*100, 2), '%'),

font = list(family = 'Arial', size = 12, color = 'rgb(0, 0, 0)'),

showarrow = FALSE)

return(industy\_barchart)

}

#### 3.树图代码

treemap <- function(data=SSE50){

color <- function (x){

if (x > 0){

return(sprintf("rgb(%d,0,0)",floor(255\*(1-exp(-x\*30)))));

}

else if (x<=0){

return(sprintf("rgb(0,%d,0)",ceiling(255\*(1-exp(x\*30)))));

}

}

rgb2hex <- function(rgb){

rgb <- strsplit(substr(rgb,5,nchar(rgb)-1),',')[[1]]

rgb <- as.integer(rgb)

rgb <- as.character(as.hexmode(rgb))

hex <- "#"

for (i in rgb){

if (nchar(i) == 1){i <- paste0('0',i)}

hex <- paste0(hex, i)

}

return(hex)

}

data["color"] = map\_chr(data$returns, color) %>% map\_chr(rgb2hex)

ggplot(data, aes(area = mv, label = names)) +

geom\_treemap(fill = data$color) +

geom\_treemap\_text(fontface = "bold", colour = "white", place = "centre",

grow = TRUE) +

ggtitle("上证50成分股涨跌情况")

}

#### 4.折线图代码

line\_chart <- function(code='000002.SZ'){

Wanke <- tushare(api\_name = "daily", ts\_code = '000002.SZ', start\_date = '20190405', end\_date = return\_cal\_dates[1])

Wanke\_return = Wanke$close[nrow(Wanke)]/Wanke$pre\_close[nrow(Wanke)] - 1

Wanke\_name <- list(…………

Wanke\_change <- list(…………

Wanke\_HL <- list(…………

xref = 'paper',

yref = 'paper',

x = 0.84,

y = 0.80,

xanchor = 'right',

yanchor = 'middle',

text = ~paste0("H ",Wanke$high[nrow(Wanke)],"\nL ",Wanke$low[nrow(Wanke)]),

font = list(family = 'Arial',

size = 16,

color = '#cfcfcf'),

showarrow = FALSE)

Wanke\_plot <- plot\_ly(Wanke, y=~close,x=~paste0(substr(trade\_date,5,6),'-',substr(trade\_date,7,8)),

type = 'scatter', mode = 'lines',

line = list(color = '#adadad')) %>%

layout(paper\_bgcolor=to\_color(Wanke\_return), plot\_bgcolor=to\_color(Wanke\_return),

xaxis = list(title = ""),

yaxis = list(title = "", range=c(min(Wanke$close),max(Wanke$close)\*1.5 - 0.5\*min(Wanke$close))),

margin =list(autoexpand = TRUE, r=10,l=10))%>%

layout(annotations = Wanke\_name)%>%

layout(annotations = Wanke\_price)%>%

layout(annotations = Wanke\_change)%>%

layout(annotations = Wanke\_HL)

return(Wanke\_plot)

}

line\_chart()

#### 5.表格代码

chart<-function(data=SSE50\_basics\_new){

data <- head(data,5)

tbody.style = tbody\_style(color = "black",

fill = c("#bdbdbd","#ededed"), hjust=1, x=0.9)

ggtexttable(data,

theme = ttheme(

colnames.style = colnames\_style(color = "white", fill = "#7d7d7d"),

tbody.style = tbody.style

))

}

chart()