library(quantmod)

citation("quantmod")

bitcoin <- getFX('BTC/USD', auto.assign = F, src='google')

tt <- 150 # we use the most recent 150 days

# Let's divide the data for readability

x <- as.numeric(bitcoin[,1]) %>% tail(tt)/1000

degreee <- 5

# The next line creates x^2 and x^3

ply\_expansion <- polym(seq(x), degree = degreee, raw = TRUE)

# ======================================

btc <- fortify.zoo(bitcoin, names = c("Date", "btc\_price"))

btc %>%

tail(150) %>%

ggplot(aes(x = Date, BTC.USD)) +

geom\_point() +

stat\_smooth(method = "lm", aes(color = "linear"), se = FALSE) +

stat\_smooth(method = "lm", formula = y~ poly(x, 2) ,

aes(color = "Poly2"),

se = FALSE) +

stat\_smooth(method = "lm", formula = y ~ poly(x, 5) ,

aes(color = "Poly5"), se = FALSE)

linear\_fit <- lm(BTC.USD ~ Date, data = btc) # Linear mod

#poly\_fit <- poly(btc$BTC.USD, degree = 5)

par(mfrow = c(2,2))

plot(linear\_fit)





