

# Creating Time Series with Line Charts

---



**YK Sugishita**

SOFTWARE DEVELOPER / DATA SCIENTIST

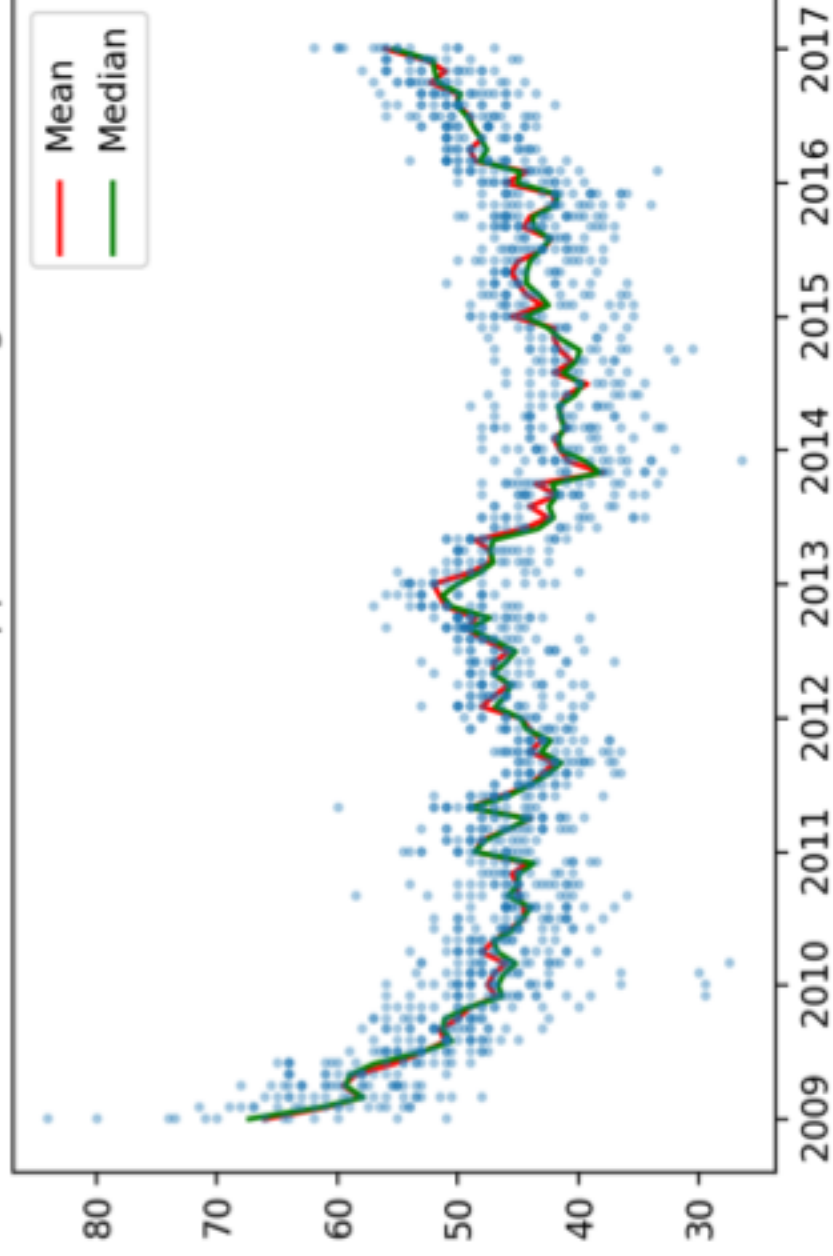
[www.csdojo.io](http://www.csdojo.io)



# Time Series

Any chart that shows a trend over time

Obama's Approval Ratings



## When to Use Line Charts / Time Series

---

# BUY ONLINE

SIGN UP FOR 15% DISCOUNT

SUMMER ITEM

THE LATEST ADDITION  
FROM THE BEST DESIGNER

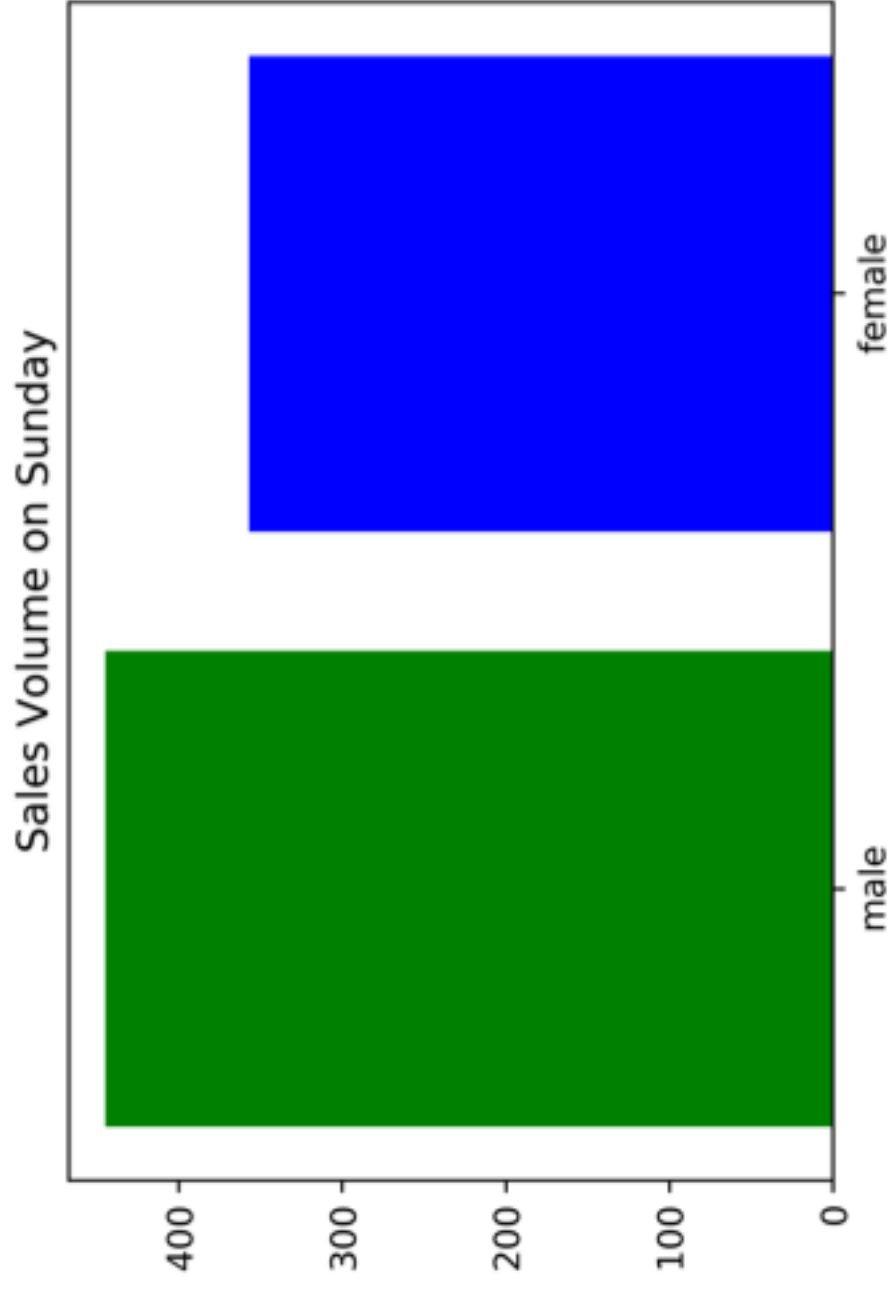
YOU WILL LOVE IT!

SHOP NOW



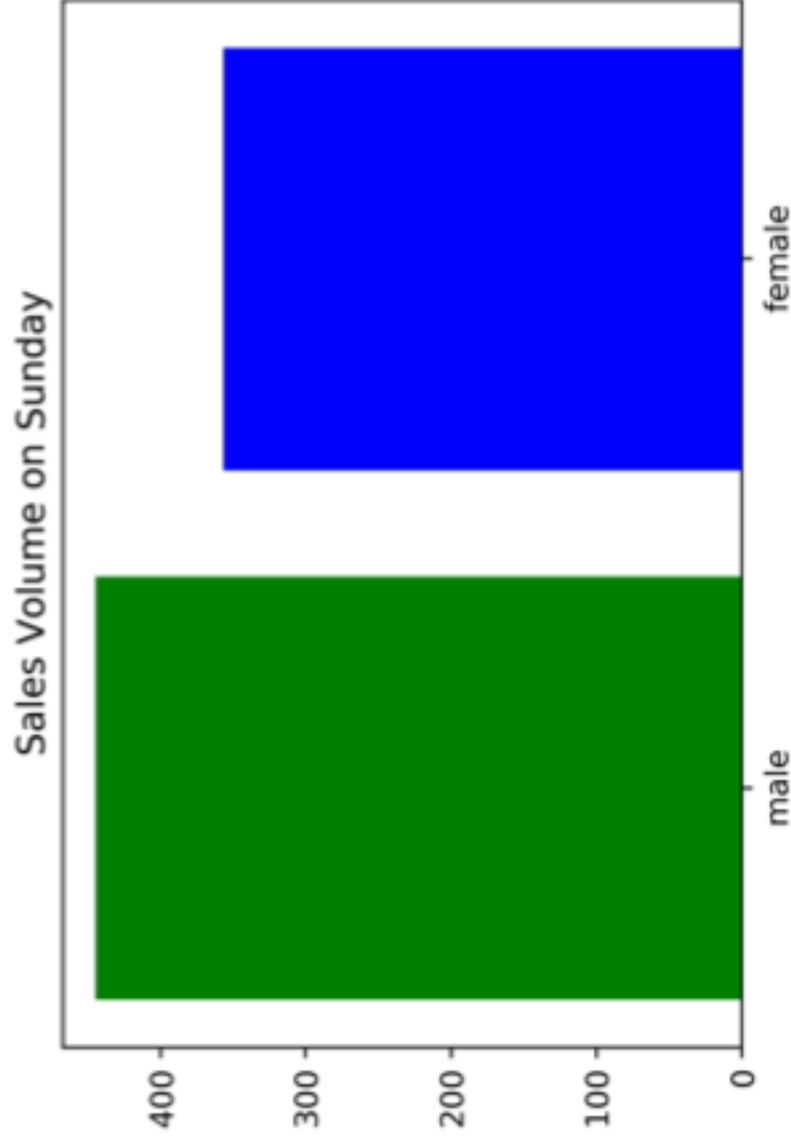
Sales Volume on Sunday

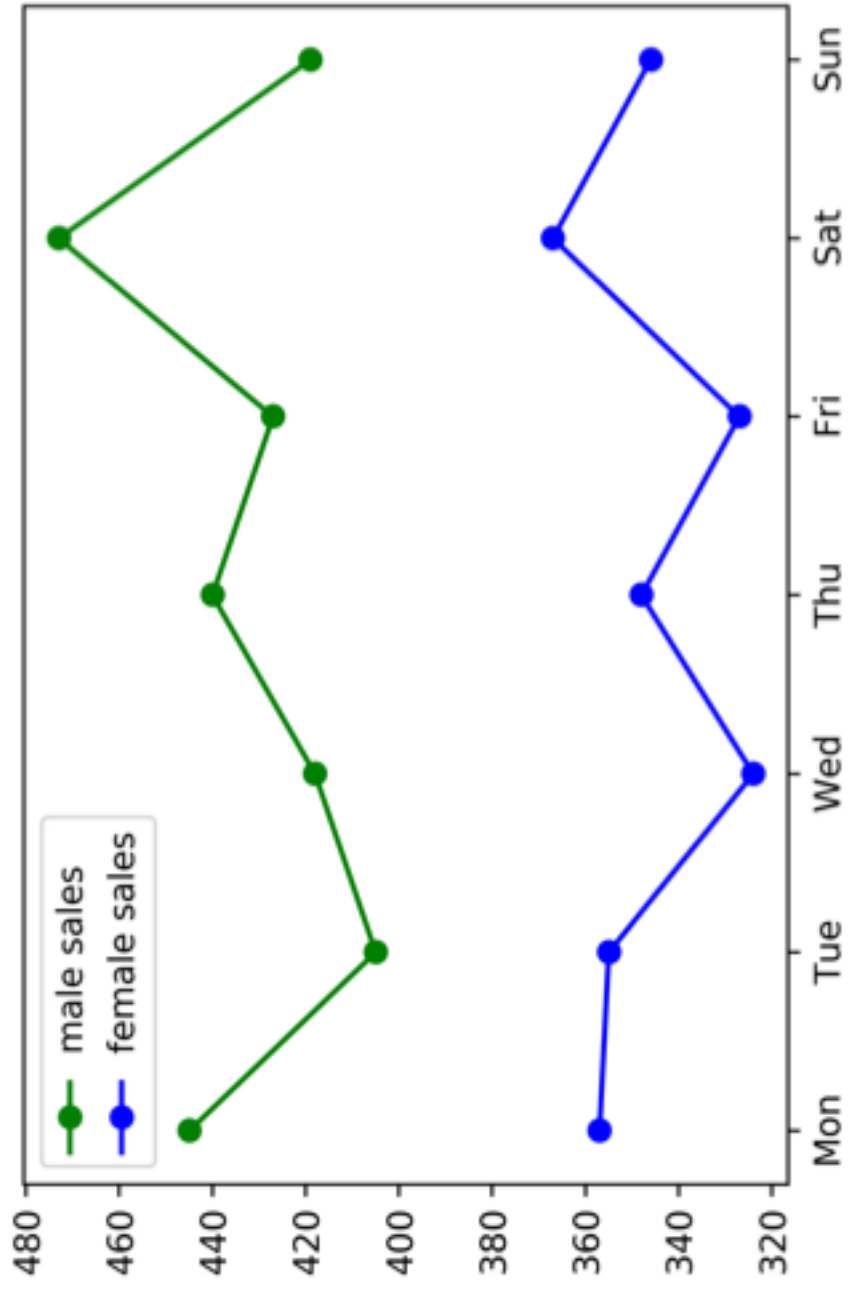




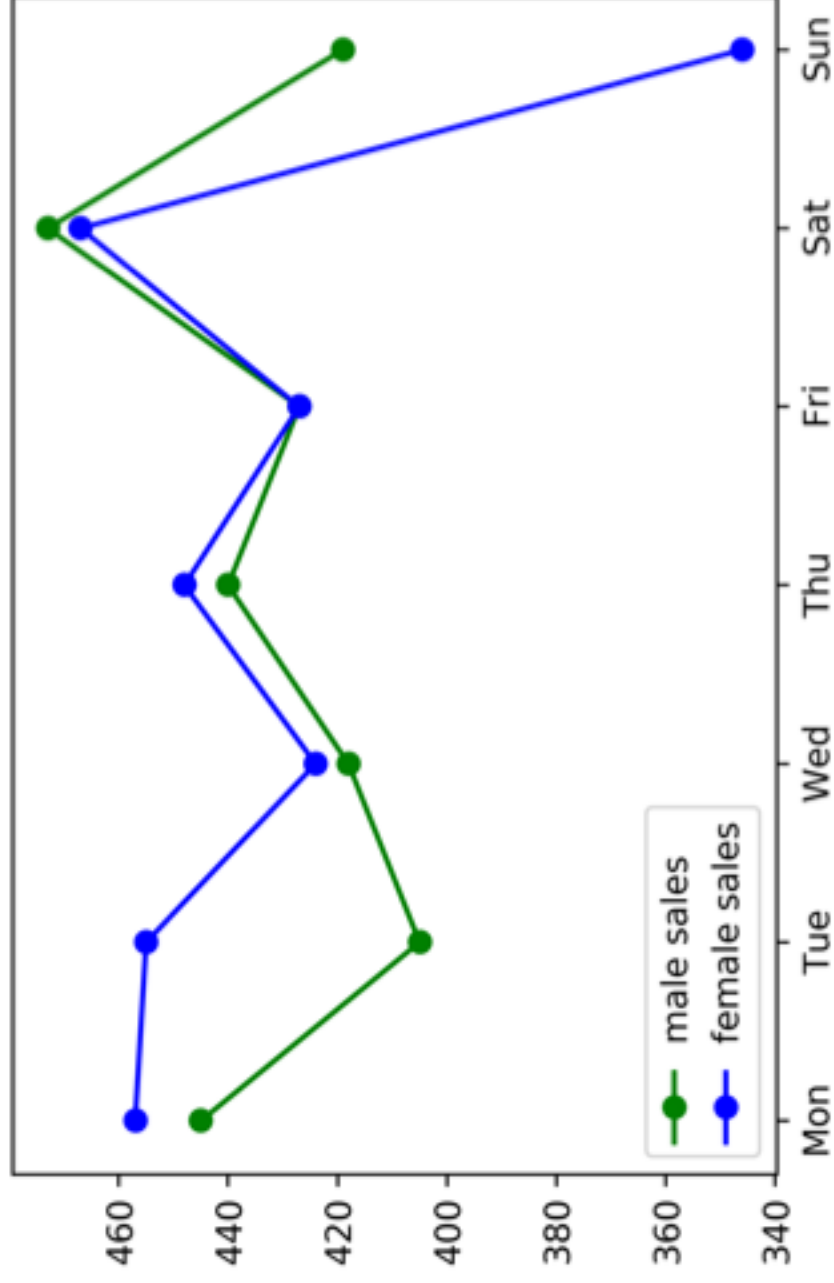
Sales Volume on Sunday

- More popular with males?
- Sample size is small
  - Perhaps only on Sunday









## Why Time Series / Line Charts

# Why Time Series / Line Charts



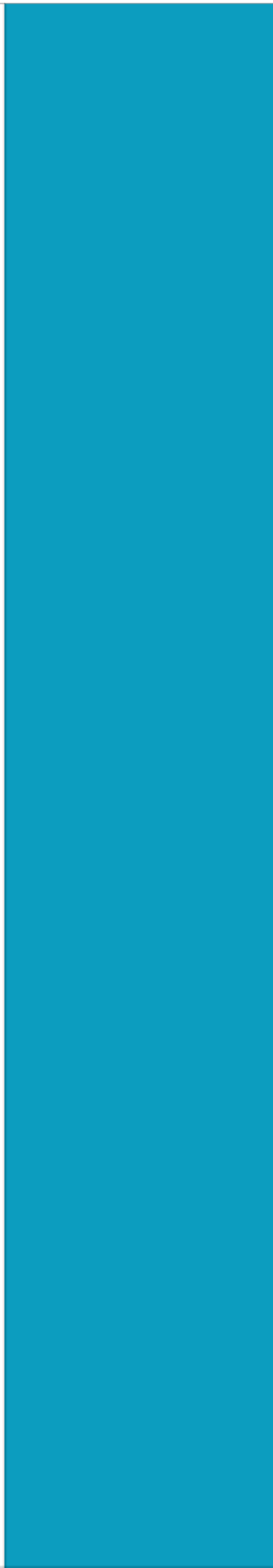
Shows a trend over time

Tests a hypothesis on a variety of conditions

Reduces misinterpretation of data

# Creating Line Charts with Matplotlib

---



# Problem: Compare GDP Per Capita Growth in the U.S. and China

countries.csv

country	continent	year	lifeExpectancy	population	gdpPerCapita
Afghanistan	Asia	1952	28.801	8425333	770.1453145

countries.csv

country	continent	year	lifeExpectancy	population	gdpPerCapita
Afghanistan	Asia	1952	28.801	8425333	779.4453145
Afghanistan	Asia	1957	30.332	9240934	820.8530296
Afghanistan	Asia	1962	31.997	10267083	853.10071
			.		
			.		
			.		
Zimbabwe	Africa	1997	46.809	11404948	792.4499603
Zimbabwe	Africa	2002	39.989	11926563	672.0386227
Zimbabwe	Africa	2007	43.487	12311143	469.7092981

# Demo

## Creating Line Charts with Matplotlib

- Create line charts
- The iloc syntax
- Scalar multiplication / division

## Practice Problem 2 - Line Charts / Time Series

---

Problem: Compare Population Growth  
in the U.S. and China

Compare Population Growth



# Compare Population Growth in the US and China

- Use the **population** column in countries.csv
- Compare both absolute numbers and relative growth
- Pause video

Demo

Example solution