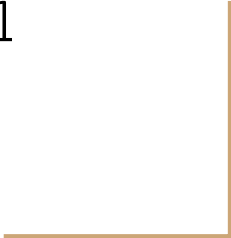


# Programming, Problem Solving, and Algorithms

CPSC203, 2019 W1



# Announcements

Lab this week: Project 1 part 1.

“Problem of the Day” continues!

## Today:

Pandas, Plotting

Something completely new!

# Some challenges...

Given last week's chart,

How many new songs were there?



# Some challenges...

Given last week's chart,

What's the average peak?



# Some challenges...

Given last week's chart,

Among those who were on the list for more than 10wk, what's the average peak? (is it very different than the previous answer?)



# Some challenges...

Given last week's chart,

Which song moved the most? Did it rise or fall?



# Some challenges...

Given last week's chart,

Write and answer your own question:

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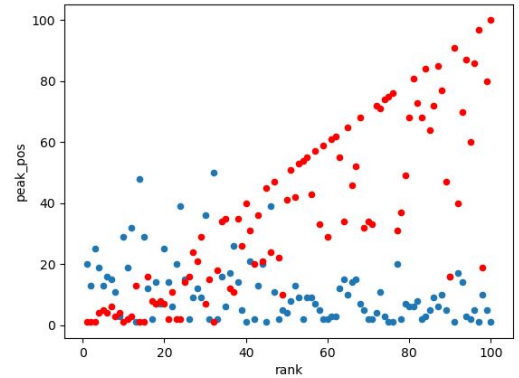
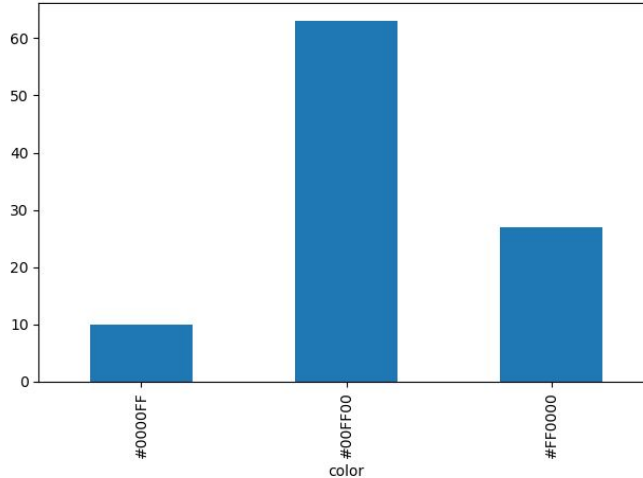
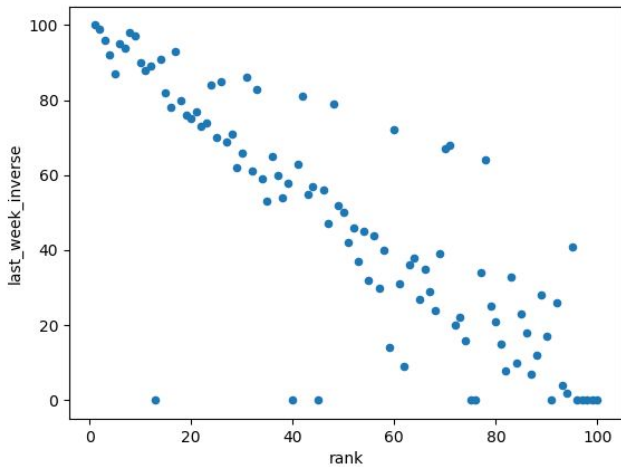


# Plotting with Pandas

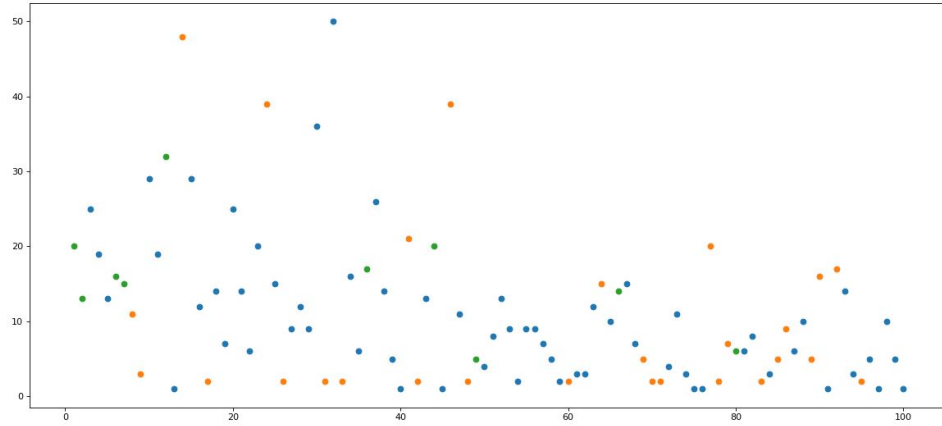
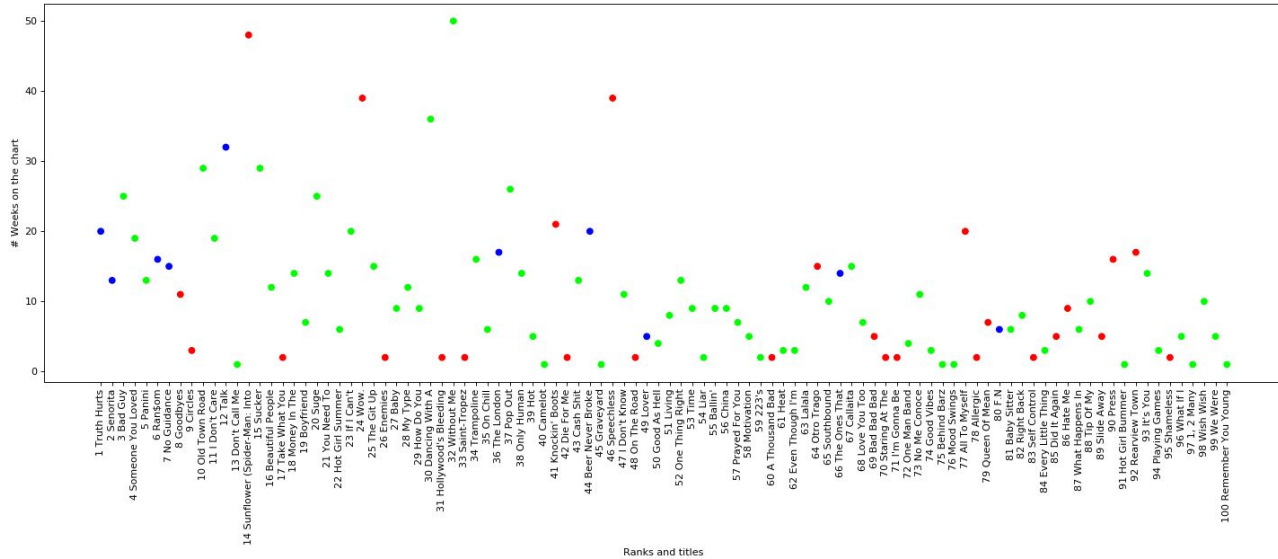
Several approaches, all fine. Best strategy is to sketch and find examples!

Nice reference:

<http://queirozf.com/entries/pandas-dataframe-plot-examples-with-matplotlib-pyplot>







# Everyone needs a Tim Horton

Every address in Vancouver has a nearest TH.

Partition Vancouver into regions so that points are in the same region if they have the same nearest TH.



# Voronoi Diagrams

Given a (finite) set of “centers”  $c_1, c_2, \dots, c_k$ , a Voronoi region,  $R_j$  consists of the set of points nearer to center  $c_j$  than to any other center.

Together, the  $R_j$  regions compose the Voronoi Diagram of a plane.

The applications of this structure go far beyond our coffee fix!!



# POTD #9 Tue

<https://github.students.cs.ubc.ca/cpsc203-2019w-t1/potd0>

Describe any snags you run into:

1. Line \_\_\_: \_\_\_\_\_
2. Line \_\_\_: \_\_\_\_\_
3. Line \_\_\_: \_\_\_\_\_
4. Line \_\_\_: \_\_\_\_\_
5. Line \_\_\_: \_\_\_\_\_

# ToDo for next class...

POTD: Continue every weekday! Submit to repo.

Reading: TLACS Ch 10 & 12 (lists and dictionaries)

References:

<https://www.dataschool.io/best-python-pandas-resources/>

[https://pandas.pydata.org/Pandas\\_Cheat\\_Sheet.pdf](https://pandas.pydata.org/Pandas_Cheat_Sheet.pdf)