IBM APPLIED DATA SCIENCE

CAPSTONE PROJECT 2020: LUXURY FASHIONSTORE IN MANHATTAN

LOCATION SEARCH FOR A NEW LUXURY CONCEPT STORE

- THE FASHION INDUSTRY IS FACING GREAT CHALLENGES. THE ESTABLISHED BRANDS HAVE TO REVISE CONCEPTS AND REALIGN THEMSELVES.

- IN ADDITION, ERRORS OR UNSTRUCTURED BEHAVIOUR ARE PARTICULARLY EXPENSIVE BECAUSE THE COMPETITION IS VERY STRONG.

- THIS CASE / PROJECT IS AN EXAMPLE OF A STRUCTURED LOCATION SEARCH BASED ON THE PREFERENCES OF THE TARGET GROUP.
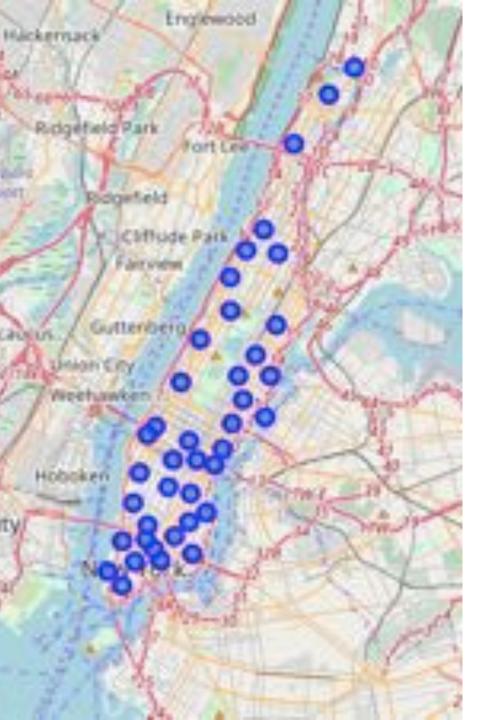
SPECIFIC CRITERIA & DATA FLOW I

- WE ARE LOOKING FOR THE NEIGHBORHOODS THAT HAVE A HIGH FREQUENCY FOR THE FOLLOWING VENUES:

  - JAPANESE RESTARUANT

  - CAFÉ

  - WINE BAR

  - CLOTHING STORES

- THESE VENUES ARE PREFERRED BY THE TARGET GROUP.

SPECIFIC CRITERIA & DATA FLOW I

- THE DATA USED IN THIS PROJECT ARE AN EXTERNAL DATA SET OF THE GEODATA OF NEW YORK AND QUERIES THROUGH THE FOURSQUARE API.

- THE ANALYSIS IS LIMITED TO MANHATTAN.

- PROCESS FLOW: LOADING DATA, PREPARE DATA, VISUALIZATION AND ANALYSIS, SUMMARY AND FINAL VISUALIZATION.

STEP 1: MANHATTAN DATA

- FIRST THE DATA WAS LOADED FOR PROCESSING AND A SPECIFIC QUERY WAS MADE ABOUT THE MANHATTAN DATA

- THEN INFORMATION ON THE VENUES OF THE NEIGHBORHOODS OF MANHATTAN WAS COLLECTED AND GROUPED

- IN ADDITION, THE TOP VENUES PER NEIGHBOURHOOD WERE SOUGHT

DATA EXTRACT: VENUES BY CATEGORY GROUPED BY NEIGHBORHOOD

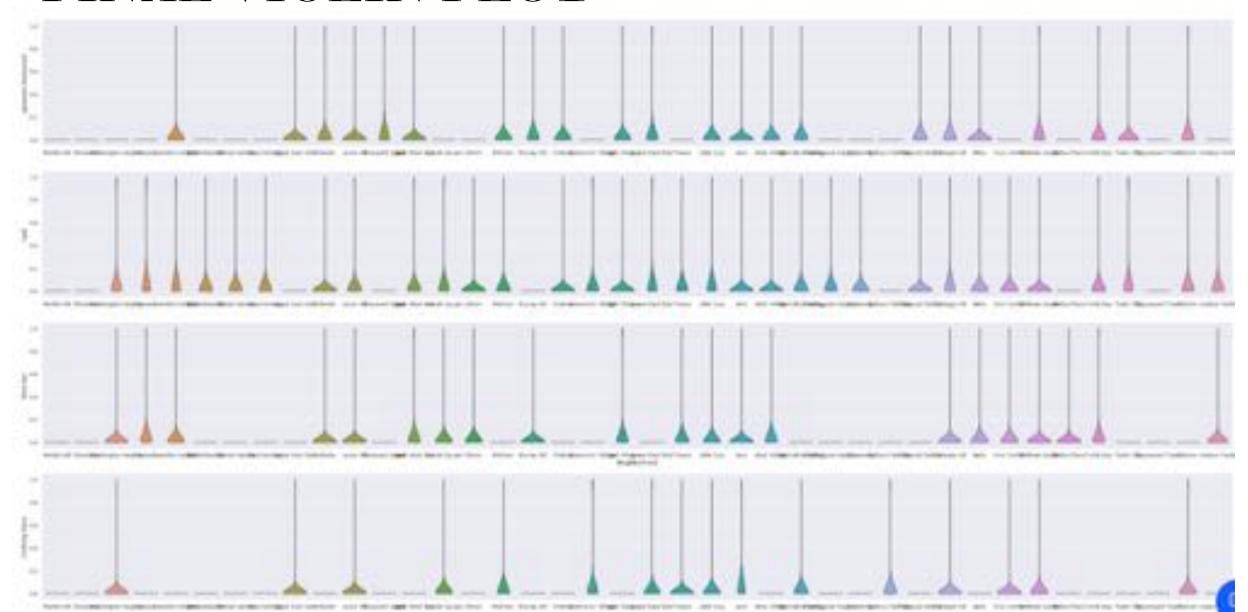|	Neighborhood	Accessories Store	Acupuncturist	Adult Boutique	Afghan Restaurant	African Restaurant	American Restaurant	Antique Shop	Arcade	Arepa Restaurant	Argentinian Restaurant	Art Gallery	Art Museum	Arts & Crafts Store	Asian Restaurant	Athletics & Sports	Auditorium
0	Battery Park City	0.000000	0.00	0.00	0.00	0.000000	0.011494	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000	0.011494	0.011494
1	Carnegie Hill	0.000000	0.00	0.00	0.00	0.000000	0.010753	0.00	0.000000	0.00	0.000000	0.000000	0.010753	0.000000	0.000000	0.000000	0.000000
2	Central Harlem	0.000000	0.00	0.00	0.00	0.071429	0.047619	0.00	0.000000	0.00	0.000000	0.023810	0.000000	0.000000	0.000000	0.000000	0.000000
3	Chelsea	0.000000	0.00	0.00	0.00	0.000000	0.030000	0.00	0.000000	0.00	0.000000	0.020000	0.000000	0.000000	0.010000	0.000000	0.000000
4	Chinatown	0.000000	0.00	0.00	0.00	0.000000	0.040000	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.020000	0.000000	0.000000
5	Civic Center	0.000000	0.00	0.00	0.00	0.000000	0.030000	0.01	0.000000	0.00	0.000000	0.010000	0.000000	0.010000	0.000000	0.000000	0.000000
6	Clinton	0.000000	0.00	0.00	0.00	0.000000	0.040000	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	East Harlem	0.000000	0.00	0.00	0.00	0.000000	0.200000	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	East Village	0.000000	0.00	0.00	0.00	0.000000	0.020000	0.00	0.000000	0.01	0.010000	0.010000	0.000000	0.010000	0.000000	0.000000	0.000000
9	Financial District	0.010000	0.00	0.00	0.00	0.000000	0.050000	0.00	0.000000	0.00	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	Flatiron	0.000000	0.01	0.00	0.00	0.000000	0.040000	0.00	0.000000	0.00	0.000000	0.010000	0.000000	0.000000	0.000000	0.000000	0.000000
11	Gramercy	0.000000	0.00	0.00	0.00	0.000000	0.041667	0.00	0.010417	0.00	0.000000	0.010417	0.000000	0.000000	0.000000	0.000000	0.000000
12	Greenwich Village	0.000000	0.00	0.00	0.00	0.000000	0.030000	0.00	0.000000	0.00	0.000000	0.010000	0.000000	0.000000	0.000000	0.000000	0.000000

ANALYZING BY VISUALIZATION I

- DATA THAT HAVE BEEN GRAPHICALLY PROCESSED ARE OFTEN EASIER TO UNDERSTAND AND CONVEY THEIR MESSAGE BETTER.

- THE FOLLOWING GRAPHIC WAS SELECTED FOR THE EVALUATION: A VIOLIN PLOT

- THIS PLOT HAS ALREADY BEEN USED FOR SIMILAR QUESTIONS AND GENERATES GOOD INSIGHTS.

ANALYZING BY VISUALIZATION II

- ON THE X-AXIS ARE THE NAMES OF THE NEIGHBORHOODS OF MANHATTAN. ON THE Y-AXIS THE FREQUENCY IS PLOTTED. THE HEIGHT AND WIDTH OF THE GRAPHICS PER NEIGHBORHOOD REPRESENT THE FREQUENCY.

- THE GRAPHICS ARE DISPLAYED ONE BELOW THE OTHER. ONE LINE REPRESENTS ONE OF THE SELECTION CRITERIA.

- ONLY POTENTIAL LOCATIONS THAT HAVE A FREQUENCY IN ALL CRITERIA ARE CONSIDERED.
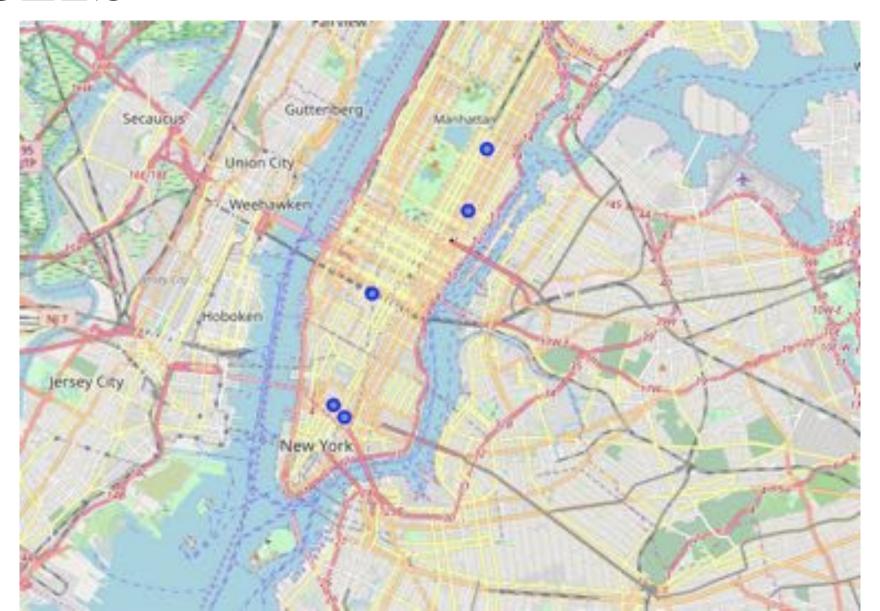
FINAL VIOLIN PLOT

RESULTS

- THERE ARE SOME OVERLAPS AND THEREFORE SOME OPTIONS FOR THE NEW STORE IN MANHATTAN:

  - LENOX HILL

  - LITTLE ITALY

  - SOHO

  - CARNEGIE HILL

  - MIDTOWN SOUTH

RESULTS

CONCLUSION

- ANYONE WHO KNOWS MANHATTAN WILL NOT BE SURPRISED BY THE FINDINGS OF THIS ANALYSIS. THE NEIGHBORHOODS ARE VERY WELL KNOWN AND BELONG TO THE TREND HOT SPOTS.

- BUT IN THE END, WE HAVE ACHIEVED A LOT THROUGH THIS INVESTIGATION:

  REDUCTION OF SEARCH COSTS, IDENTIFICATION OF NEW STARTING POINTS FOR FURTHER ANALYSIS AND RISK MINIMIZATION THROUGH DATA-BASED RESULTS

POSSIBLE NEXT STEPS

- THIS ANALYSIS ALONE MAY NOT BE SUFFICIENT FOR THE LOCATION DECISION, BUT IT IS THE FOUNDATION OF FURTHER ANALYSIS AND DEFINES THE NEXT STEPS: WE CAN EXAMINE WHICH STORES ARE ALREADY IN THE NEIGHBORHOODS OR WHICH RESTAURANTS AND CAFÉS MIGHT BE POSSIBLE COOPERATION PARTNERS.

- THE RESULTS COULD NOW BE FED BACK TO THE MARKET RESEARCH DEPARTMENT, WHICH COULD THEN CONDUCT MORE SMALL-SCALE SURVEYS IN THE 5 NEIGHBORHOODS.

THANK YOU VERY MUCH!