THE NEW YORK CITY MARATHON ANALYSIS

NSS DATA ANALYTICS - CAPSTONE PROJECT
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BACKGROUND

- RUNNING HAS BEEN A PART OF MY LIFE FOR 18 YEARS
- NYC MARATHON WAS MY FIRST MARATHON IN 2016
- THIS YEAR WILL BE THE 50TH ANNIVERSARY OF THE RACE
- LARGEST MARATHON IN THE WORLD
  - > 50K RUNNERS

AGENDA

DATA QUESTIONS

APPROACH

DATA CHALLENGES

INSIGHTS

CONCLUSION

DATA QUESTIONS

- HOW DO THE NYC MARATHON RESULTS VARY OVER THE LAST 5 YEARS?
- ARE THERE TRENDS IN AGE GROUP OR SEX WITH PERFORMANCE?
- IS THERE A CORRELATION BETWEEN WEATHER ON RACE DAY AND PERFORMANCE?
- IS THERE A RELATIONSHIP BETWEEN RUNNERS' FINISH TIMES AND GDP PER CAPITA OF THEIR HOME COUNTRY?
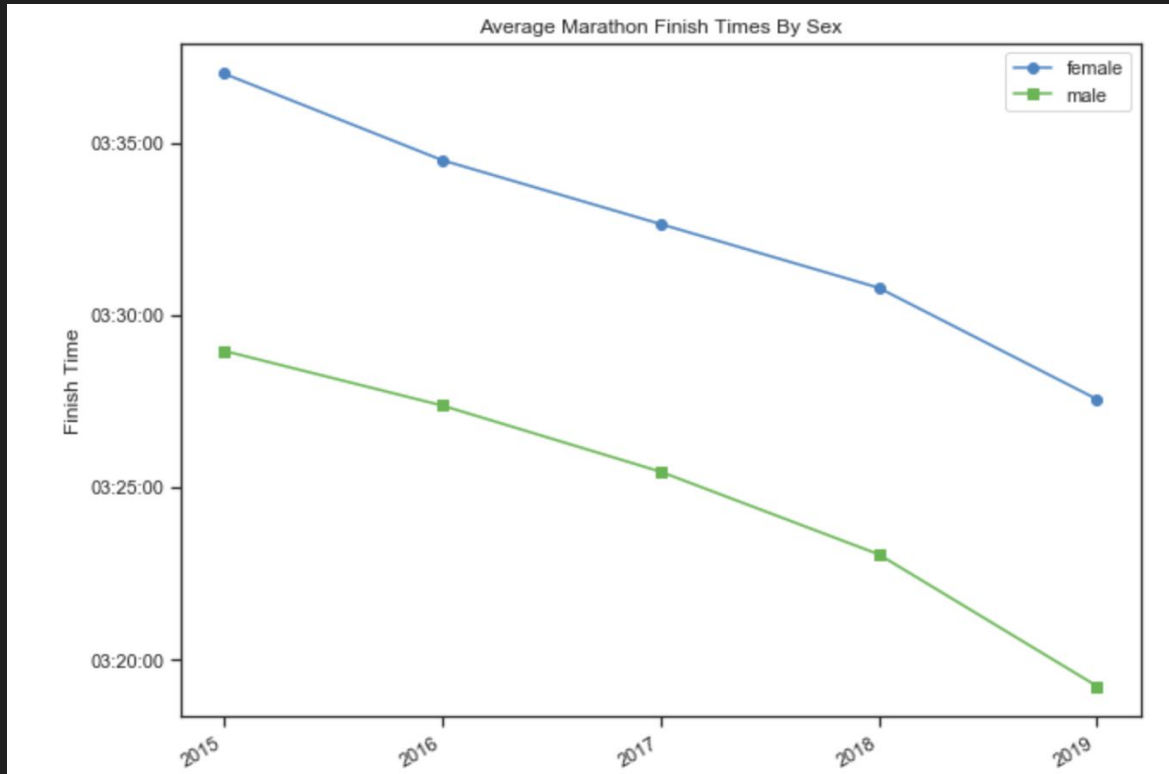
APPROACH

- WEB SCRAPED 2015 - 2019 NYC MARATHON RESULTS
- USED GDP PER CAPITA DATA FROM THE WORLD BANK
- USED WEATHER DATA FROM NATIONAL WEATHER SERVICE ON RACE DAYS
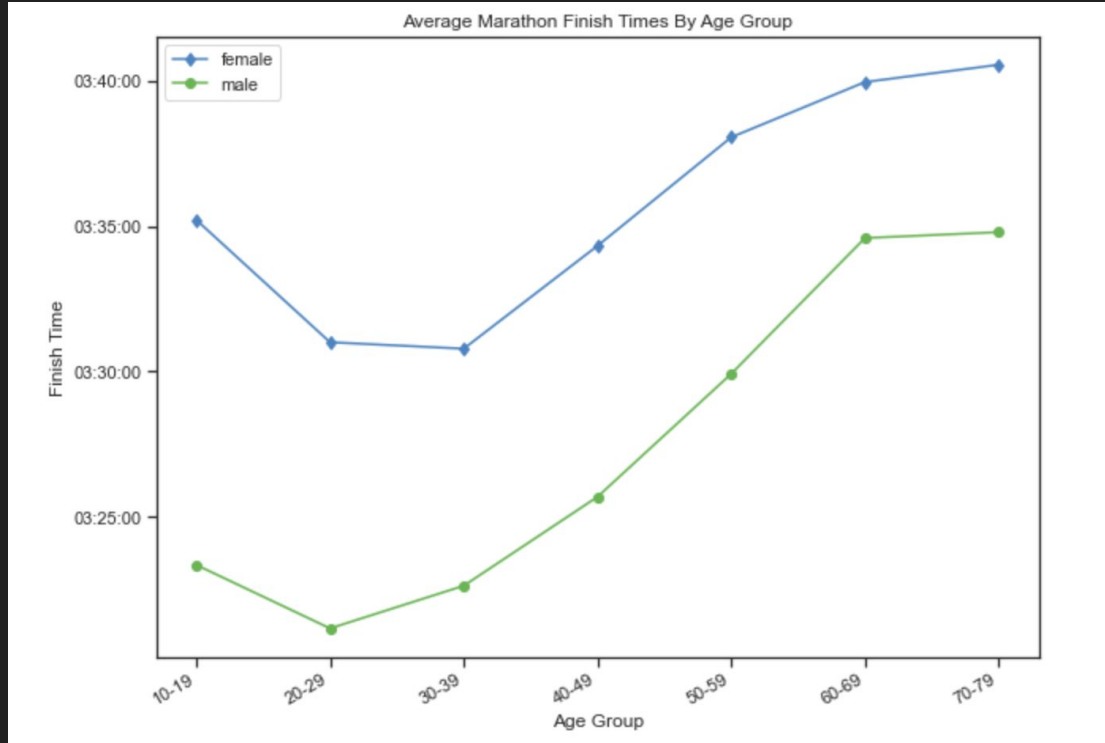
DATA CHALLENGES

- NYC MARATHON RESULTS LIMITED TO TOP 10K RUNNERS EACH YEAR
  - **SMALLER SCOPE** LIMITED TO TOP ATHLETES
- GDP DATA NULLS
  - FILLED WITH LAST VALID OBSERVATION
  - USED 2018 VALUES

AVERAGE MARATHON RESULTS OVER TIME
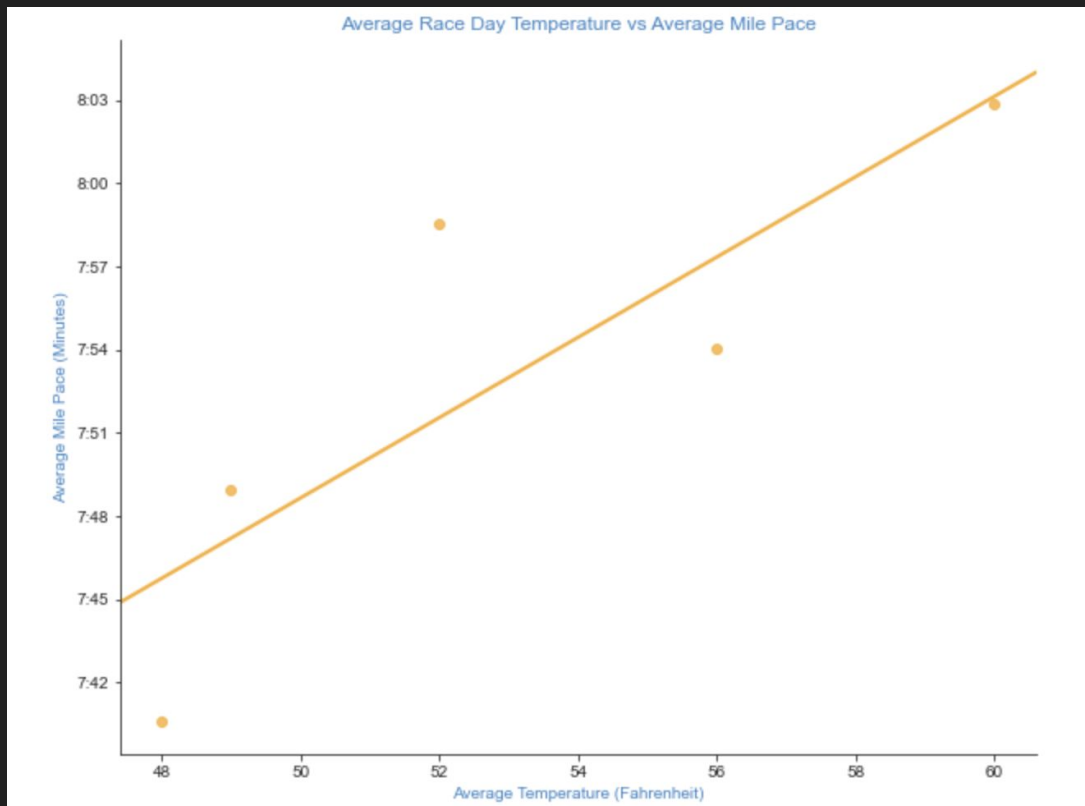
FINISH TIMES BY AGE GROUP AND SEX

Average Marathon Finish Times By Age Group

Female 30-39 Age Group has the fastest time (3:31)

Male 20-29 Age Group has the fastest time (3:21)

WEATHER VS PERFORMANCE

TABLEAU

[Tableau Dashboard Link](#)

CONCLUSION

- TRENDS AMONGST AGE GROUP AND SEX
- WEATHER: TEMPERATURE AFFECTS PERFORMANCE
- GDP PER CAPITA: NO TRUE CORRELATION WITH RACE TIME AND GDP
- AGE GRADE: TOP FINISHERS WITHIN 60-88%

DATA SOURCES

NYC MARATHON RESULTS DATA: https://www.nyrr.org

GDP PER CAPITA DATA: https://data.worldbank.org

WEATHER DATA: https://w2.weather.gov ; https://www.ncdc.noaa.gov

AGE GRADING: https://www.runnersworld.com/advanced/a20794116/a-guide-to-age-grading/