Mini Project I - Transport of London

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Motivation

Planning the Journey from Heathrow Airport to Tower Bridge (about 18.6 miles) using different modes of transport :

1. Public Bus
2. Tube

Tools

- Jupyter Lab
- Packages
  - os, requests, json
- Transport for London Unified API documentation
  - Air Quality
  - Accident Stats
  - Modes
  - Journey, etc.

Tasks

- Air Quality
    - Low air pollution forecast valid from Friday 26 November to end of Friday 26 November GMT
- Journey/Meta/Modes
    - **Number of different modes of transport = 30**
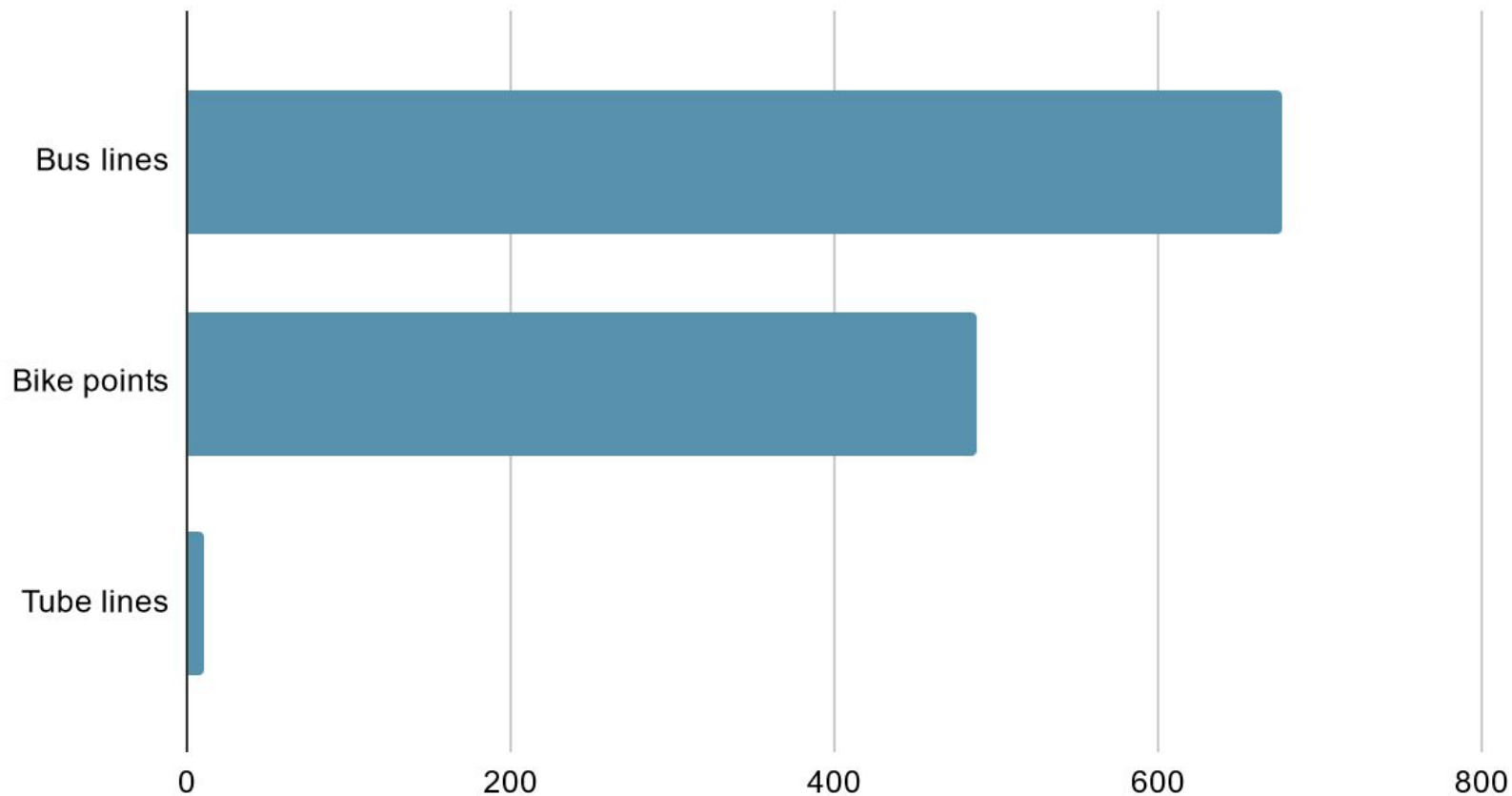- Number of stations having "Victoria" line = 16

Available modes of Transport

Black cab as customer	Electric car	Plane	River tour
Black cab as driver	Goods vehicle as driver	Private car	Taxi
Bus	Interchange keep sitting	Private coach as customer	Tfl rail
Cable-car	Interchange secure	Private coach as driver	Tram
Coach	International rail	Private hire as customer	Tube
Cycle	Motorbike scooter	Private hire as driver	Walking
Cycle Hire	National rail	Replacement bus	
Dlr	Overground	River bus	

Tasks

- Bike Point
  - Number of Bike Points = **787 bike points**
  - Functioning Bike Points = **488**
  - Number of docks in functioning Bike Points = **12,405** out of which <u>46% of the docks are occupied.</u>
- Tube
  - Number of tube lines = **11**
  - Bakerloo, Central, Circle, District, Hammersmith & City, Jubilee, Metropolitan, Northern, Piccadilly, Victoria, Waterloo & City
- Bus
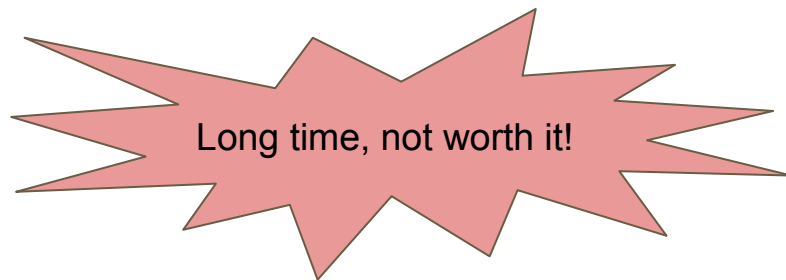 - Number of bus lines = **677**

Journey by Tube

- Planned duration
  - 85 minutes (1 hr 25 min) with 4 legs
  - Found a similar walking time and transfers using Line 'Victoria'

Least walking time, 22 mins

🚶	(**10 min**) Cosmopolitan Way, Heathrow Airport Terminals 1-3 → Heathrow Terminals 2 & 3 Underground Station
🚆	(**31 min**) Heathrow Terminals 2 & 3 Underground Station → Hammersmith (Dist&Picc Line) Underground Station
🚆	(**29 min**) Hammersmith (Dist&Picc Line) Underground Station → Tower Hill Underground Station
🚶	(**12 min**) Tower Hill Underground Station → 1 Tower Bridge, Tower Hamlets

Journey by Bus

Long time, not worth it!

- Planned duration
  - 162 minutes (2 hr 42 min) with 6 legs

🚶	(**5 min**) Cosmopolitan Way, Heathrow Airport → Heathrow Central Bus Stn (Rail-Air)
🚌	(**43 min**) Heathrow Central Bus Stn (Rail-Air) → Hounslow Bus Station
🚌	(**34 min**) Hounslow Bus Station → Shepherd's Bush Station
🚌	(**54 min**) Shepherd's Bush Station → Elephant & Castle Station
🏃	(**4 min**) Elephant & Castle Station → Elephant & Castle / Newington Causeway
🚌	(**20 min**) Elephant & Castle / Newington Causeway → Tower Bridge / City Hall

Journey using both Tube and Bus

- Planned duration
  - 114 minutes (1 hr 54 min) with 5 legs

🚶	(**5 min**) Cosmopolitan Way, Heathrow Airport Terminals 1-3 → Heathrow Central Bus Stn (Rail-Air)
🚌	(**41 min**) Heathrow Central Bus Stn (Rail-Air) → Hounslow East Station
🚆	(**22 min**) Hounslow East Station → Hammersmith (Dist&Picc Line) Underground Station
🚆	(**29 min**) Hammersmith (Dist&Picc Line) Underground Station → Tower Hill Underground Station
🚶	(**12 min**) Tower Hill Underground Station →1 Tower Bridge, Tower Hamlets

Conclusion

- Use the journey by tube.
  - Less transfers
  - Least time
  - Reasonable walking

Challenges

- Spent a lot of time not understanding the disambiguation result of API.

Given more time...

I would explore the Bike Points API and see if I can plan a journey using different bike points.