

# Transport for London

The Amazing Race: Planning Committee



Analysis by Aris Grout

# High-level Objectives: the London Race

Assess:

1. Safety for our participants
2. Modes of transport available
3. Stop point options for each mode of transport
4. Transport for London (TfL) API ease of use

# Air Quality

Safety first! Can we start our race tomorrow?



Yes:

'Low air pollution forecast valid from Friday 5 March to end of Saturday 6 March GMT'

✓ Air Quality meets our standards

# Modes of Transport

'There are 18 different modes of transport'

Our options:

Yes



```
['bus', 'cable-car', 'coach', 'cycle', 'cycle-hire', 'dlr', 'interchange-keep-sitting',  
'interchange-secure', 'national-rail', 'overground', 'replacement-bus', 'river-bus', 'river-tour',  
'taxi', 'tflrail', 'tram', 'tube', 'walking']
```

For Coders



Absolutely



✓ Lots of options available.

# Bike race?

'There are 792 bike stops in London, with 21,051 bike docks in total'

However!

While pulling the number of docks available per bike stop ID, we run into an error:

```
for ID in bikePointIDs:
    totalDocks.append(response(f"https://api.tfl.gov.uk/BikePoint/{ID}")[ 'additionalProperties' ][8][ 'value' ])
    KeyError: 'additionalProperties'
```

 Not a viable option

# Tube or Bus race?

'There are 11 tube lines and 679 bus lines in London.'

Our options for the “tube” are:

Bakerloo  
Central  
Circle  
District  
Hammersmith & City  
Jubilee  
Metropolitan  
Northern  
Piccadilly  
**Victoria**  
Waterloo & City

Perfect!

- ✓ Hilarious names, perfect for TV
- ✓ The “Victoria” tube line fits our Queen Victoria theme!

# How many Stations on the Victoria Line?

'There are 16 stations on the Victoria Line.'

✓ We will use all of them.



# Test Race: Heathrow Airport to Tower Bridge

Surprise 1st race, straight from touchdown... At midnight obviously.

Racers will choose an exclusive mode of transport: tube or bus.

Using the TfL API we predict the victorious racers' will choose the tube!

'The shortest journey from Heathrow Airport to Tower Bridge takes 104 minutes by bus, or 81 minutes by tube.'

⚠ Works with caveats...

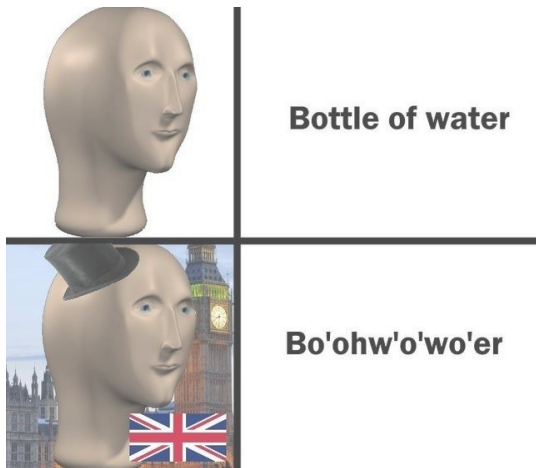
\*Note, any team taking a 'cab' will be disqualified.



# Challenges: Transport for London API

## 1. Bridging the language barrier

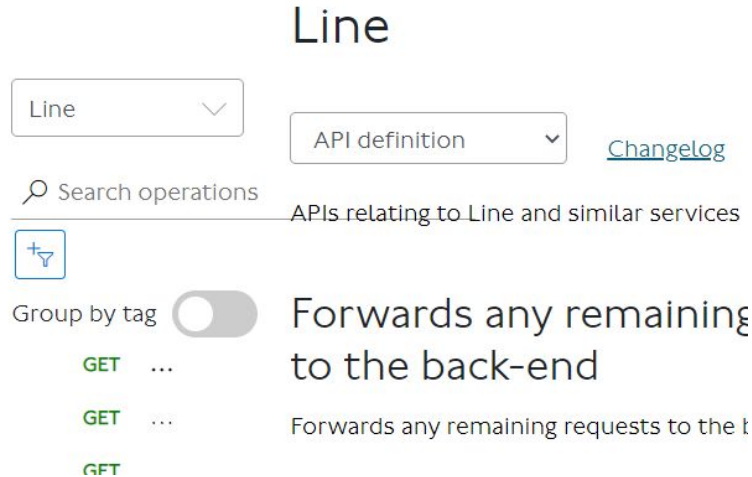
[ 'dlr', 'interchange-keep-sitting', 'interchange-secure', 'overground', 'tflrail', 'tube' ]



Interpreter needed.

# Challenges: Transport for London API

## 2. Navigating awful API documentation



# Challenges: Transport for London API

## 3. Key errors

```
for ID in bikePointIDs:
```

```
    totalDocks.append(response(f"https://api.tfl.gov.uk/BikePoint/{ID}")['additionalProperties'][8]['value'])
```

```
KeyError: 'additionalProperties'
```



Assess alternatives to the TfL API

# Challenges: Transport for London API

## 4. Disambiguation clarity

```
▼ fromLocationDisambiguation:  
  $type: "Tfl.Api.Presentation.Entities.JourneyPlanner.Disambiguation, Tfl.Api.Presentation.  
    Entities"  
  ▼ disambiguationOptions: [] 8 items  
    ▼ 0:  
      $type: "Tfl.Api.Presentation.Entities.JourneyPlanner.DisambiguationOption, Tfl.Api.Pres  
        entation.Entities"  
      matchQuality: 950  
      parameterValue: "51.46962511264,-0.44968473098"
```

'51.46962511264,-0.44968473098'

'51.46962511264%2C%20-0.44968473098'



Use ASCII Character Encoding

# Conclusion

Amazing Race: London is possible with the help of British Intelligence to assist TfL API interpretation, and so long as bike races are excluded. More research to follow...

- ✓ 1. Air Quality
- ✓ 2. Modes of Transport
  - ✗ Bike Race (can't assess empty dock counts)
  - ✓ Tube or Bus Race
- ✓ 3. Stop points
- ⚠ 4. Usable TfL API, but seek alternatives