

Data Import – JSON Files

```
[{"title": "The Avengers", "id": 299534, "revenue": 2797800564, "genres": [{"id": 12, "name": "Adventure"}, {"id": 878, "name": "Science Fiction"}, {"id": 28, "name": "Action"}], "belongs_to_collection": {"id": 86311, "name": "The Avengers Collection", "poster_path": "/yFSIUUTCvgYrpalUktulvk3Gi5Y.jpg", "backdrop_path": "/zuW6f0iusv4X9nnW3paHGfXcS1l.jpg"}, "runtime": 181}, {"title": "Avatar", "id": 19995, "revenue": 2787965087, "genres": [{"id": 28, "name": "Action"}, {"id": 12, "name": "Adventure"}, {"id": 14, "name": "Fantasy"}, {"id": 878, "name": "Science Fiction"}], "belongs_to_collection": {"id": 87096, "name": "Avatar Collection", "poster_path": null, "backdrop_path": null}, "runtime": 162}]
```

JSON

How to load Data from JSON Files into Pandas?

What is JSON?

- **Java Script Object Notation** (JSON) is a language-independent data format to **store**, **transform** and **interchange** data.
- Standard Format to **transfer Data** (through **Web APIs**).
- Human **readable**
- **Not** necessarily **tabular**
- Often **complex/nested** data structures
- Different Data **Layouts** (orientations)

What are JSON files?

```
[{'title': 'Avengers: Endgame',  
  'id': 299534,  
  'revenue': 2797800564,  
  'genres': [{'id': 12, 'name': 'Adventure'},  
             {'id': 878, 'name': 'Science Fiction'},  
             {'id': 28, 'name': 'Action'}],  
  'belongs_to_collection': {'id': 86311,  
                             'name': 'The Avengers Collection',  
                             'poster_path': '/yFSIUUTCvgYrpalUktulvk3Gi5Y.jpg',  
                             'backdrop_path': '/zuW6f0iusv4X9nnW3paHGfXcS1l.jpg'},  
  'runtime': 181},  
{ 'title': 'Avatar',  
  'id': 19995,  
  'revenue': 2787965087,  
  'genres': [{'id': 28, 'name': 'Action'},  
             {'id': 12, 'name': 'Adventure'},  
             {'id': 14, 'name': 'Fantasy'},  
             {'id': 878, 'name': 'Science Fiction'}],  
  'belongs_to_collection': {'id': 87096,  
                             'name': 'Avatar Collection',  
                             'poster_path': '/nslJVsO58Etqkk17oXMuVK4gNOF.jpg',  
                             'backdrop_path': '/8nCr9W7sKus2q9PLbYsnT7iCkuT.jpg'},  
  'runtime': 162},
```

Data Import from the Web – APIs

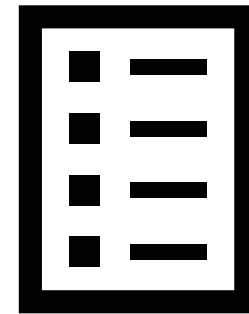
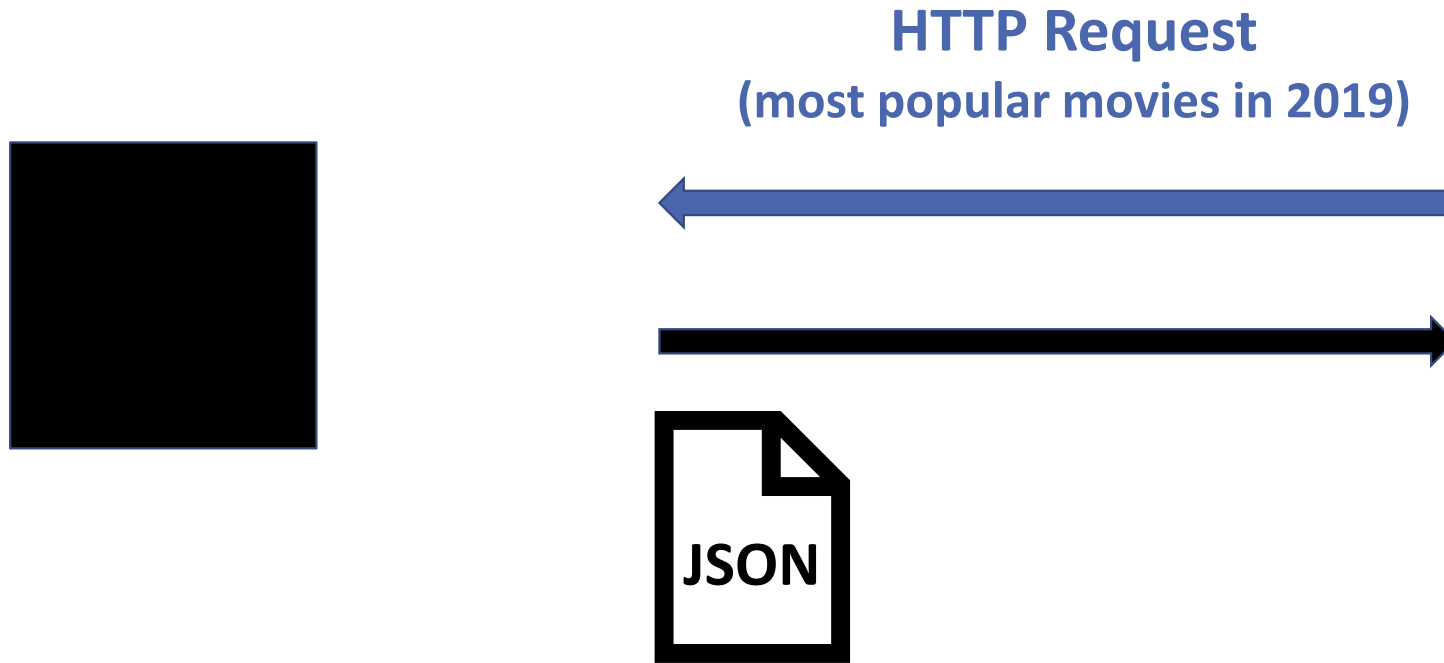


How to pull Data from Web APIs?

What is a (Web) API?

- **Application Programming Interfaces** (API) define how an application communicates with other programs.
- **Web APIs** are the most common way to **get data from a web application** without knowing database details.
- Users can typically pull Data from Web APIs with **HTTP requests**...
- ...and get Data in **JSON**, CSV or other file formats
- How does it work exactly?
→ Defined in the **API Documentation** (if provided)

TMDB API – HTTP Request



TMDB API – HTTP Request

URL:

Query String

`https://api.themoviedb.org/3/discover/movie?api_key=123abc&language=en-US&sort_by=popularity.desc&primary_release_year=2019`