Labs for prototyping future mobility data sharing solutions in the cloud

ABCs Navitia Playground

Prepare you datathon in the best way

mobidatalab.eu

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What the Navitia playground is for?

Navitia Playground is a sandbox for testing data and queries. It allows to interpret the raw information generated by Navitia through a graphical interface very easy to use.

The tool is designed for all types of profiles. Anyone can use it: from technical to non-technical backgrounds.The tool is free and accessible to everyone.

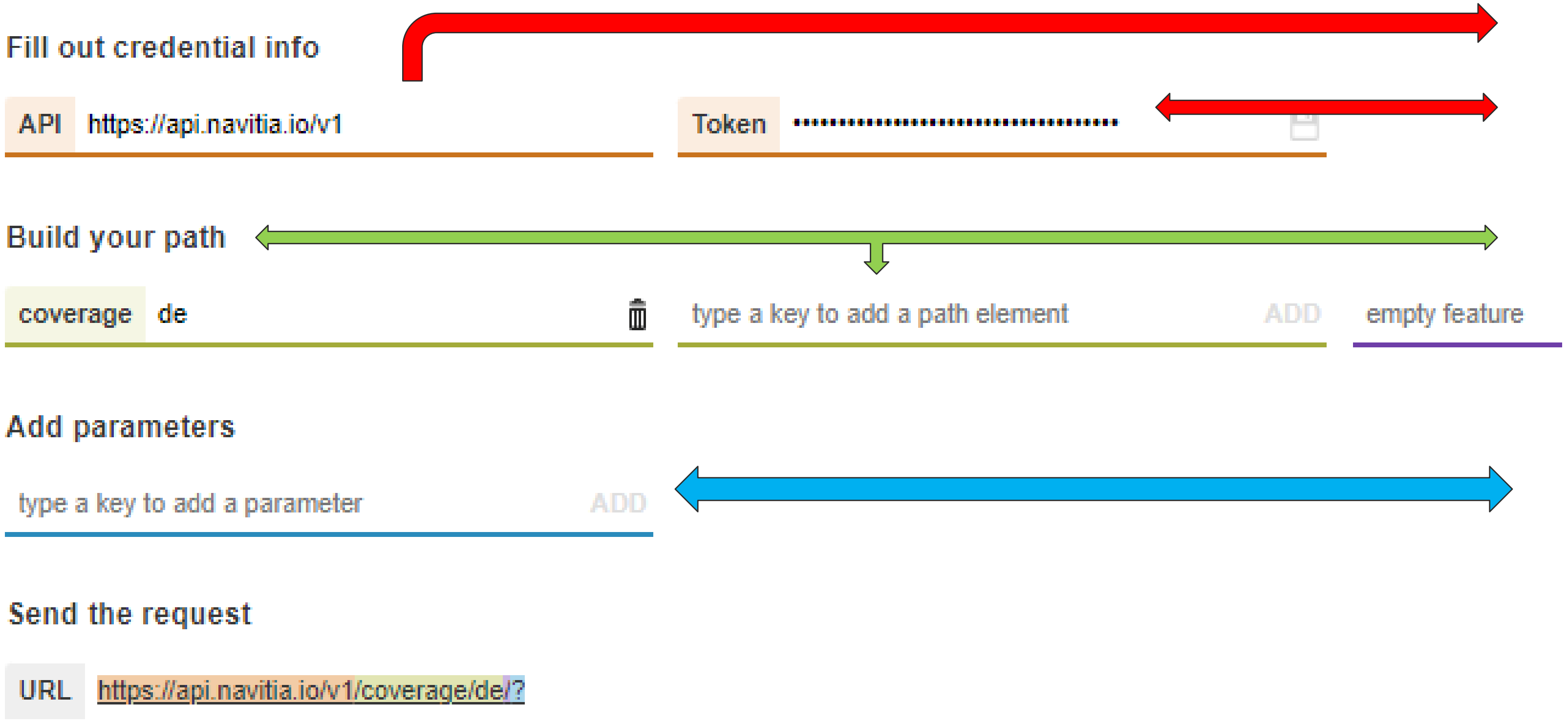
How to get your token?

1) *Create your account – You will receive your token. It will be required in the next slides.*

2) *You're beginner? Use templated examples*

3) *Navitia documentation*

Query fields



Fill out credential info

API https://api.navitia.io/v1

Token ••

Build your path

coverage de

type a key to add a path element ADD

empty feature

Add parameters

type a key to add a parameter ADD

Send the request

URL https://api.navitia.io/v1/coverage/de/?

The root URL of the API ,which is the address of the server.

This is the authentification token (or security token). You will need to edit it when copy/pasting the following URLs with your team URL during the datathon

The path which allows you to specify the search perimeter of the query. Ex : Coverage, stop_point, stop_area **; de (Germany)**

The API access point (/endpoint) to specify what type of information is requested.
Ex : /journeys /stop_schedule /stop_area

Parameters (parameters) to specify what informatin is desired in the API response.
Ex: data_freshness /count /depth

URL Navitia: LINK

Creating a route

We will see how to create a Navitia query to perform a route search.

In this example: **Add parameters**

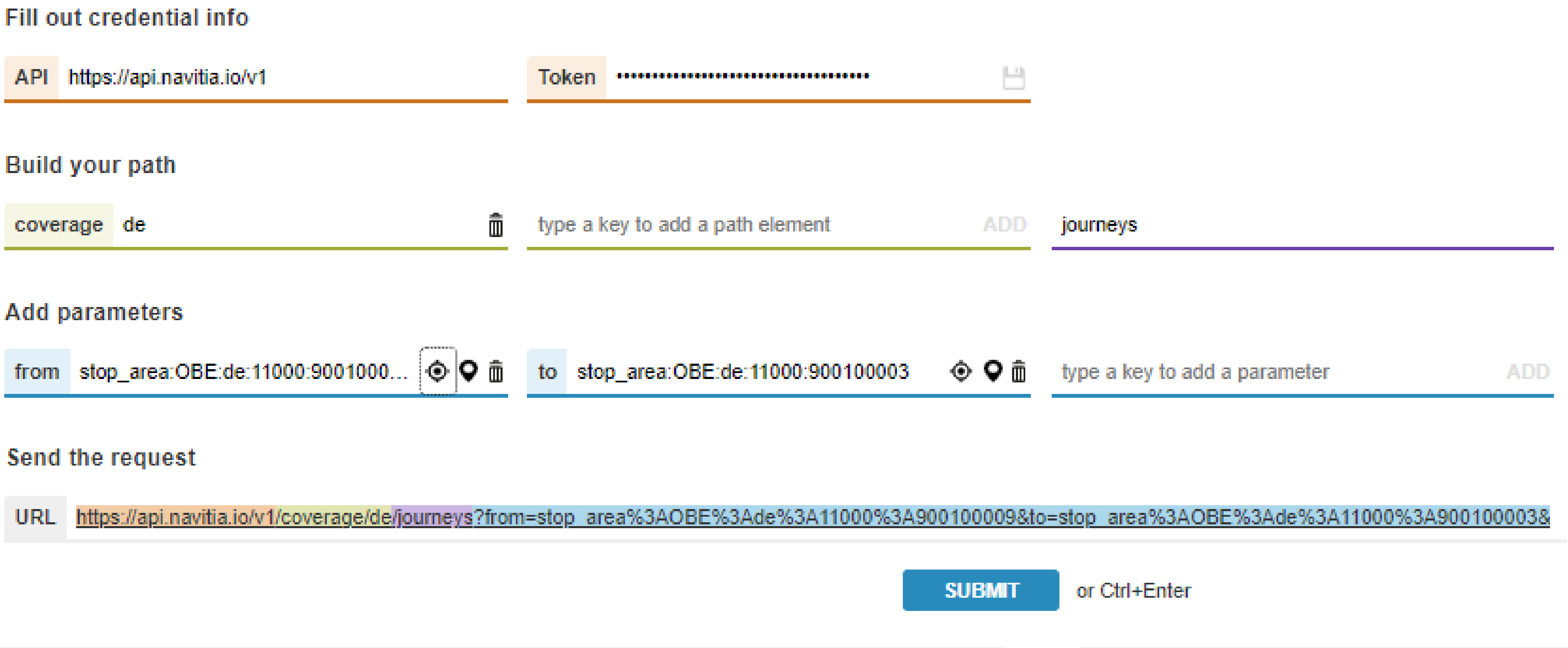
- *From: Stop area = Naturkundenmuseum*
- *To: Stop area = S+U Alexanderplatz (Bhf)*

Route construction

Call settings*:*

- **Endpoint /journeys = (itinary)**
- **Coverage production: sandbox**
- **Coverage validation: sandbox**
- **From (starting point)**
- **To (ending point)**
- **Datetime (predefined date if needed)**

URL Navitia : LINK



Fill out credential info

API https://api.navitia.io/v1

Token ••

Build your path

coverage de

type a key to add a path element ADD

journeys

Add parameters

from stop_area:OBE:de:11000:9001000...

to stop_area:OBE:de:11000:900100003

type a key to add a parameter ADD

Send the request

URL https://api.navitia.io/v1/coverage/de/journeys?from=stop_area%3AOBE%3Ade%3A11000%3A900100009&to=stop_area%3AOBE%3Ade%3A11000%3A900100003&

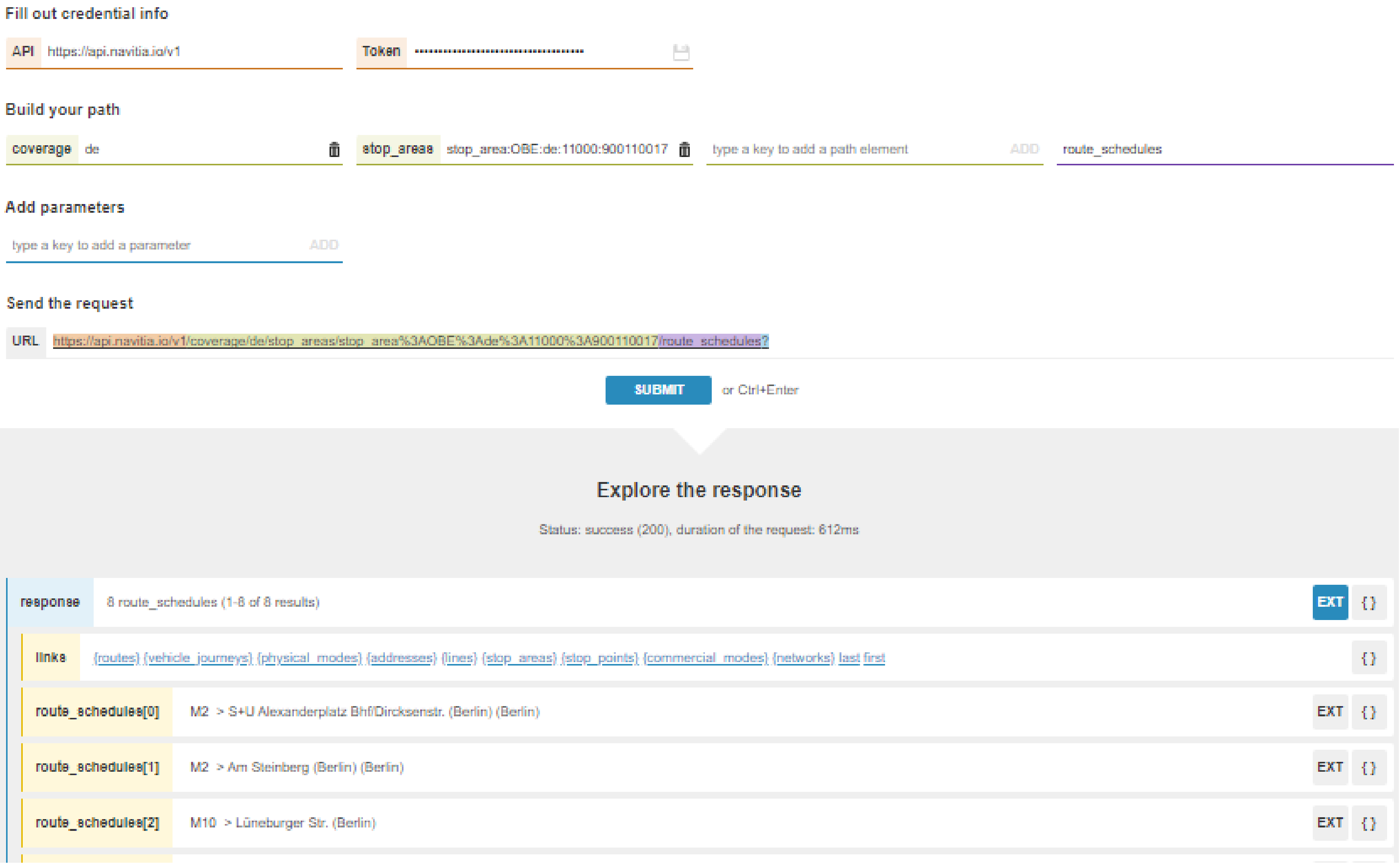
Schedule sheet

API route_schedules:

This API corresponds to the timetable. The purpose of this API is to give the departure times of all the stops of a predefined line.

- *Coverage = de (Germany)*
- *Stop area = Prenzlauer Allee/Danziger StraBe*

URL Navitia : LINK



Fill out credential info

API https://api.navitia.io/v1 | Token ••

Build your path

coverage de | stop_areas stop_area:OBE:de:11000:900110017 | type a key to add a path element ADD | route_schedules

Add parameters

type a key to add a parameter ADD

Send the request

URL https://api.navitia.io/v1/coverage/de/stop_areas/stop_area%3AOBE%3Ade%3A11000%3A900110017/route_schedules?

Explore the response

Status: success (200), duration of the request: 612ms

response 8 route_schedules (1-8 of 8 results)

links {routes} {vehicle_journeys} {physical_modes} {addresses} {lines} {stop_areas} {stop_points} {commercial_modes} {networks} last first

route_schedules[0] M2 > S+U Alexanderplatz Bhf/Dircksenstr. (Berlin) (Berlin)

route_schedules[1] M2 > Am Steinberg (Berlin) (Berlin)

route_schedules[2] M10 > Lüneburger Str. (Berlin)

Stop schedules

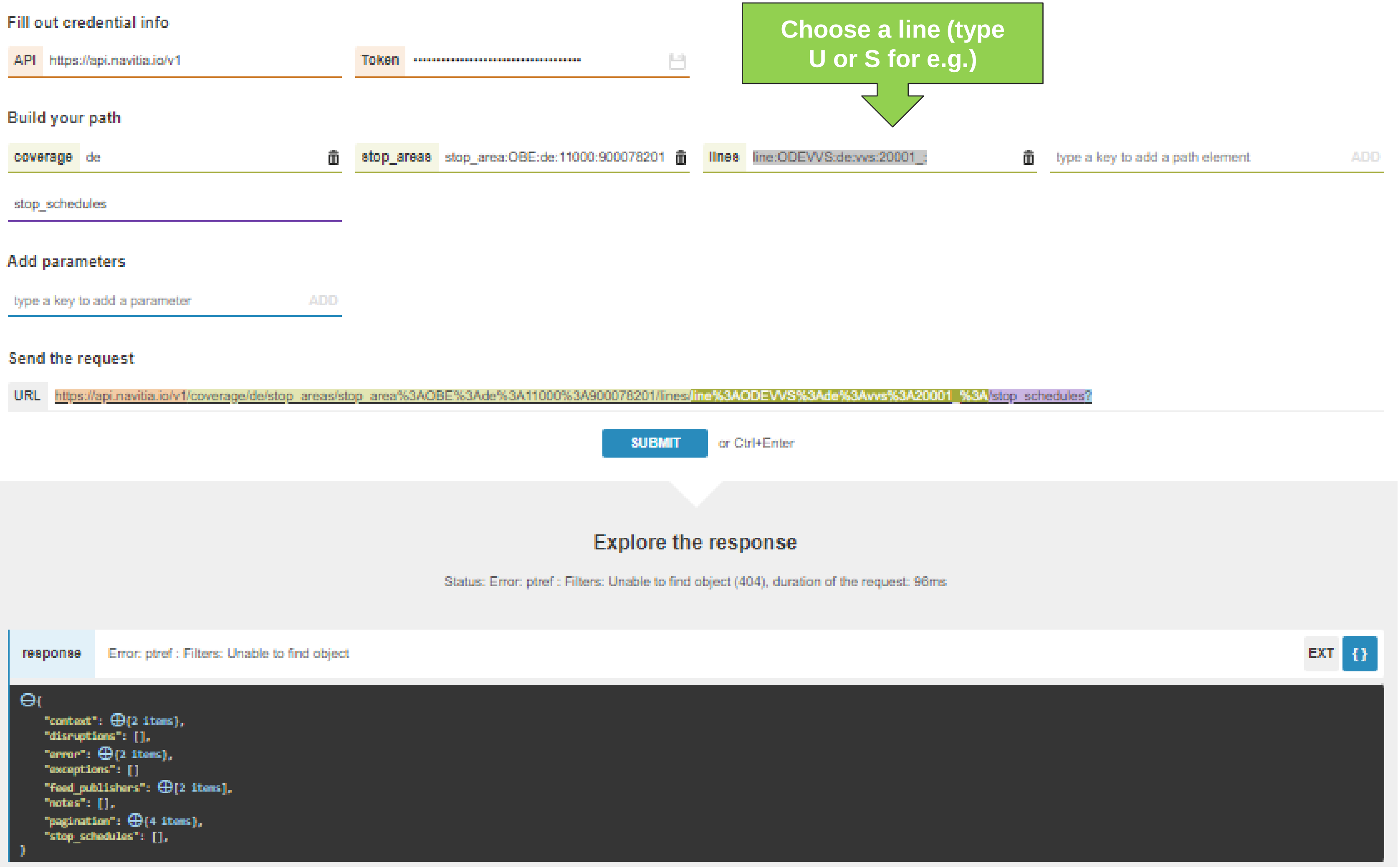
API « stop_schedules » :

- This API is intended to give the times of the next passages on the stops (Neuköln S+U) of a predefined line (U1)

Lines :

- By typping S or U, you find the whole list of S-Bahn and U-Bahn within the Neuköln S+U Bahnof

URL Navitia : LINK



Choose a line (type U or S for e.g.)

Fill out credential info

API https://api.navitia.io/v1

Token ··

Build your path

coverage de

stop_areas stop_area:OBE:de:11000:900078201

lines line:ODEVVS:de:vvs:20001_:

type a key to add a path element ADD

stop_schedules

Add parameters

type a key to add a parameter ADD

Send the request

URL https://api.navitia.io/v1/coverage/de/stop_areas/stop_area%3AOBE%3Ade%3A11000%3A900078201/lines/line%3AODEVVS%3Ade%3Avvs%3A20001_%3A/stop_schedules?

SUBMIT or Ctrl+Enter

Explore the response

Status: Error: ptref : Filters: Unable to find object (404), duration of the request: 96ms

response Error: ptref : Filters: Unable to find object

EXT {}

```
⊖{
    "context": ⊕{2 items},
    "disruptions": [],
    "error": ⊕{2 items},
    "exceptions": []
    "feed_publishers": ⊕[2 items],
    "notes": [],
    "pagination": ⊕{4 items},
    "stop_schedules": [],
}
```

Next Departures

Here we will see how to create a Navitia query in order to have the next departures from a defined stop zone:

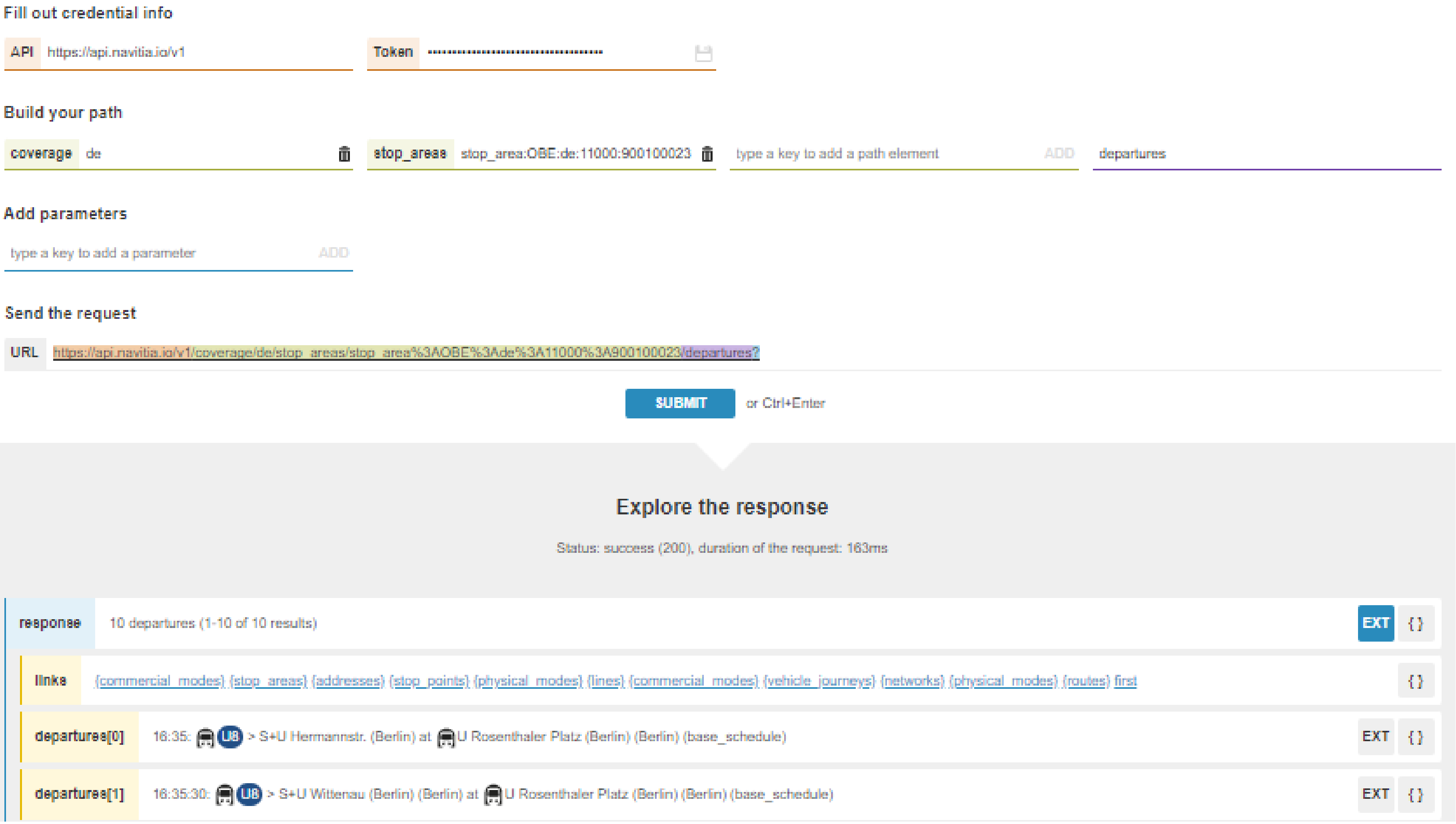
In the Endpoint **you have to add “departures”** (next departures).

Then in the « **path** » you have to add « **stop_area »** and fill in the desired place.

As a reminder, a « **stop_area »** is a group of physical stops closed by.

Screen example : stop_area:U Rosenthaler Platz (Berlin)

URL Navitia : LINK



Fill out credential info

API https://api.navitia.io/v1

Token ••

Build your path

coverage de

stop_areas stop_area:OBE:de:11000:900100023

type a key to add a path element

departures

Add parameters

type a key to add a parameter

Send the request

URL https://api.navitia.io/v1/coverage/de/stop_areas/stop_area%3AOBE%3Ade%3A11000%3A900100023/departures?

Explore the response

Status: success (200), duration of the request: 163ms

response 10 departures (1-10 of 10 results)

links {commercial_modes} {stop_areas} {addresses} {stop_points} {physical_modes} {lines} {commercial_modes} {vehicle_journeys} {networks} {physical_modes} {routes} first

departures[0] 16:35: U8 > S+U Hermannstr. (Berlin) at U Rosenthaler Platz (Berlin) (Berlin) (base_schedule)

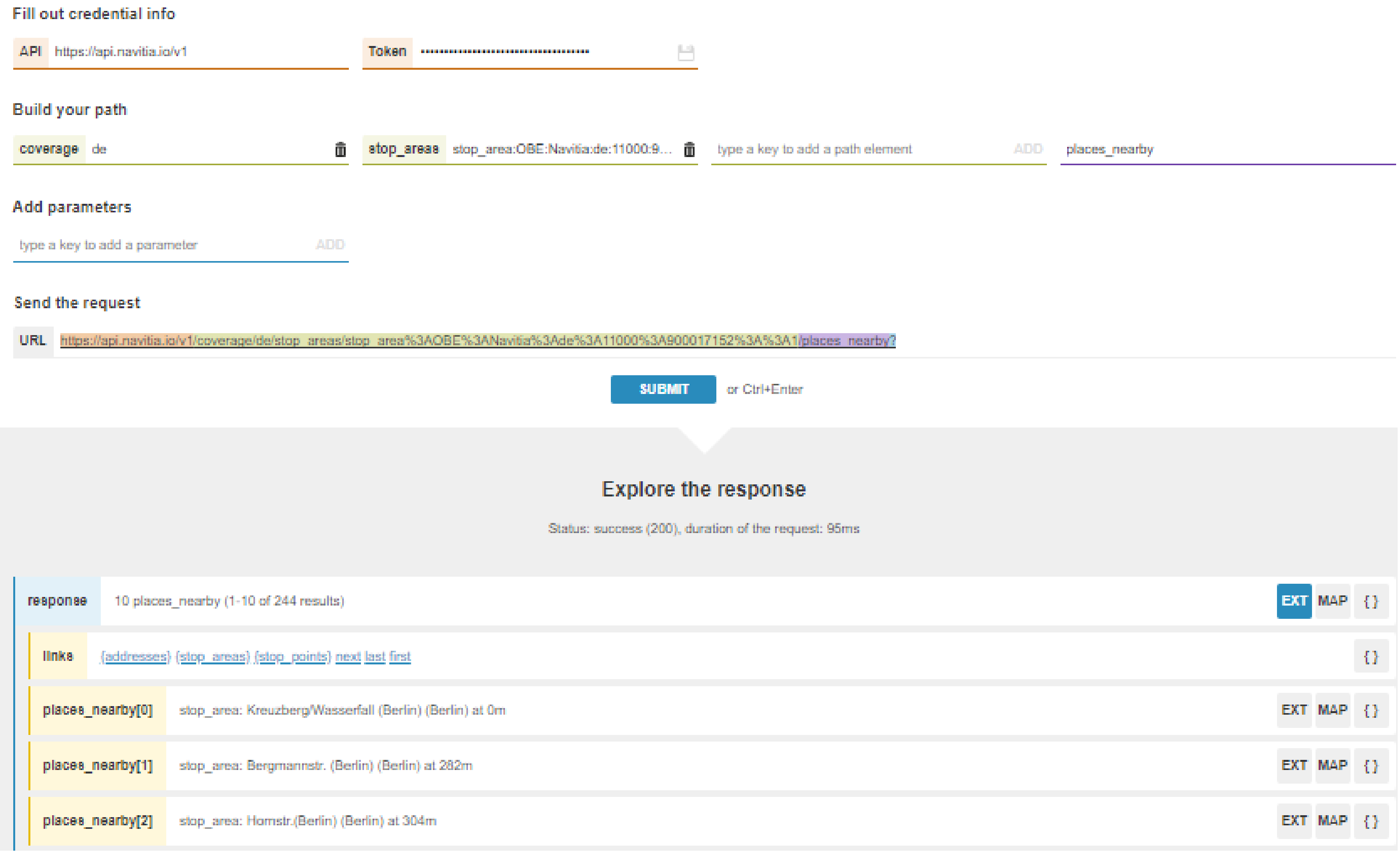
departures[1] 16:35:30: U8 > S+U Wittenau (Berlin) (Berlin) at U Rosenthaler Platz (Berlin) (Berlin) (base_schedule)

Places nearby

The **place_nerby** API displays different transportation options around a location - a GPS coordinate or an address, for example (nearby)

Here, stop area = Kreuzberg/Wasserfall (Berlin)

URL Navitia : LINK



Fill out credential info

API https://api.navitia.io/v1

Token ••••••••••••••••••••••••••••••••••••

Build your path

coverage de

stop_areas stop_area:OBE:Navitia:de:11000:9...

type a key to add a path element ADD

places_nearby

Add parameters

type a key to add a parameter ADD

Send the request

URL https://api.navitia.io/v1/coverage/de/stop_areas/stop_area%3AOBE%3ANavitia%3Ade%3A11000%3A900017152%3A%3A1/places_nearby?

SUBMIT or Ctrl+Enter

Explore the response

Status: success (200), duration of the request: 95ms

response 10 places_nearby (1-10 of 244 results) EXT MAP { }

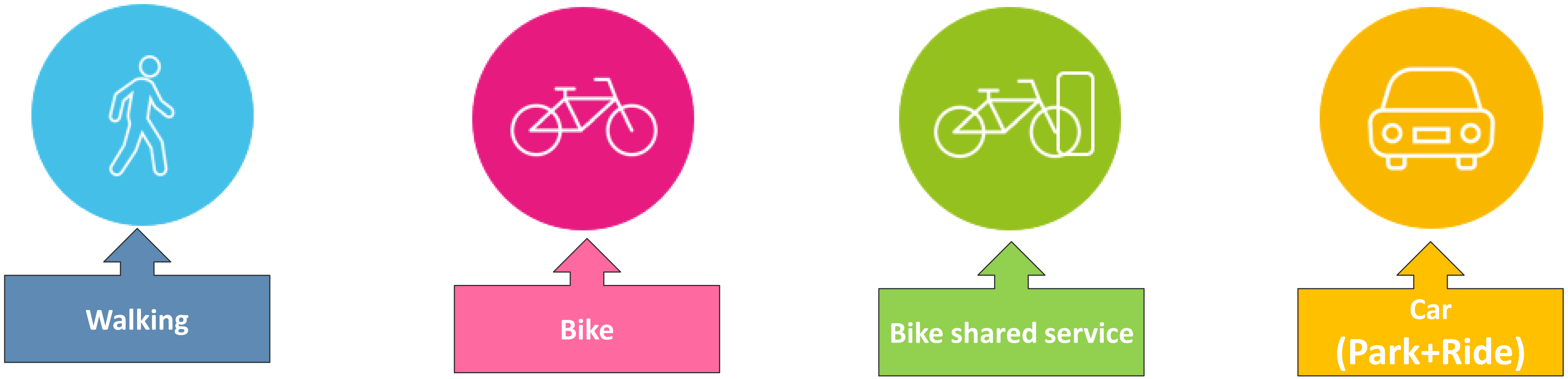
links {addresses} {stop_areas} {stop_points} next last first { }

places_nearby[0] stop_area: Kreuzberg/Wasserfall (Berlin) (Berlin) at 0m EXT MAP { }

places_nearby[1] stop_area: Bergmannstr. (Berlin) (Berlin) at 282m EXT MAP { }

places_nearby[2] stop_area: Hornstr.(Berlin) (Berlin) at 304m EXT MAP { }

Additional parameters



Walking

Bike

Bike shared service

Car
(Park+Ride)

first_section_mode : feeder mode at departure
last_section_mode : feeder mode at the end
direct_path : only end-to-end feeder modes

Additional parameters

Turnaround times

This is the maximum time allowed to reach public transport by feeder mode in seconds

- **max_walking_duration_to_pt**
- **max_bike_duration_to_pt**
- **max_bss_duration_to_pt**
- **max_car_duration_to_pt**

Speed

Speed per mode of reduction in m/s. To get this value in km/h, multiply this by 3.6

- **walking_speed**
- **bike_speed**
- **car_speed**
- **bss_speed**

Accesibility

Setting to use only accessible transit stops in the API calculation

- **wheelchair** = true

Itinerary – Key parameters

Allows you to make a multimodal route from point A to point B

Endpoint: /journeys (itinerary)

Path : coverage = De (Germany), Be (Belgium)…

Key parameter:

- **traveller_type** → traveler profile
- **direct_path** → Only end-to-end feeders modes
- **first_section_mode** → Feeder mode at the start
- **last_section_mode** → Inbound feeder mode
- **data_freshness** → adapted_schedule; base_schedule; real time
- **datetime** → time and date of the route search
- **date_time** → **:** arrival / departure
- **add_poi_infos[]** → Ask in the answer for available spaces bss/parking
- **Forbidden_uris** → prevents the algorithm from using a particular transport object (line/stop_area/network)
- **Allowed_id** → forces the algorithm to use a particular transport object

Description of standard parameters

Description standard	Parameter	PROD
Authorized modes of transport to reach the first section by public transport	**first_section_mode**	walking, bss, bike
Permitted modes of transport to finish the route after the last section by public transport	**last_section_mode**	walking, bss, bike
Speed for the calculation of the duration of the bicycle sections in m/s for the profile	**bike_speed**	4.1
Speed for the calculation of the duration of the bike share sections in m/s for the profile	**bss_speed**	4.1
Speed for the calculation of the duration of the car sections in m/s for the given profile	**car_speed**	11.11
Maximum allowed time to reach public transport by bike in seconds	**max_bike_duration_to_pt**	1800
Maximum time allowed to reach public transport by bike share in seconds	**max_bss_duration_to_pt**	1800
Maximum time allowed to reach public transport by car in seconds	**max_car_duration_to_pt**	1800
Maximum time allowed to reach public transport by foot in seconds	**max_walking_duration_to_pt**	1800
Walking speed in m/s	**walking_speed**	1.1
Wheelchair passenger, true or false.	**wheelchair**	false