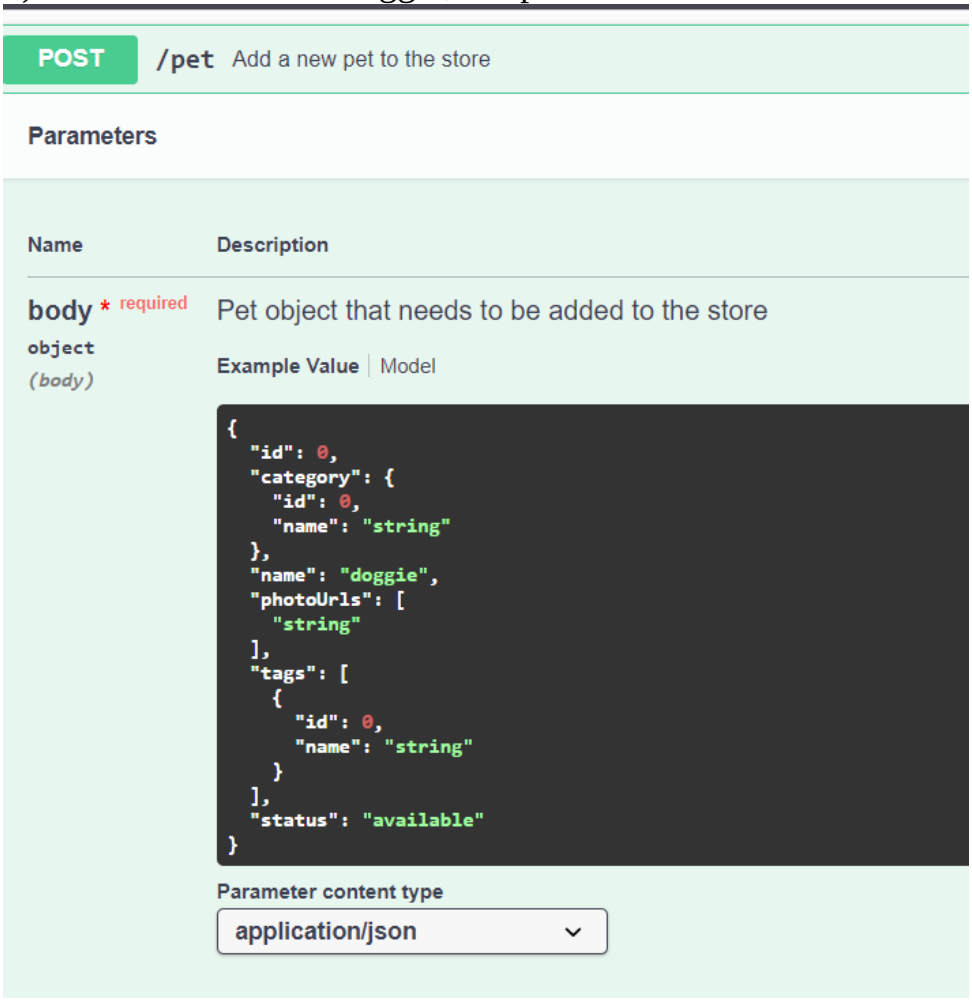
Тема лабораторной работы	lb_5.1
Выполняющий	Кирюшкин Артем
Помогающий	Солунин Евгений
Ход работы	1) Заходим на сайт swagger, и в pet  2) Нажимаем try it out что открывает нам редактирование тела

3) Теперь в теле редактируем id и имя

4) Сохраняем и получаем запрос на qurl

Curl

```
curl -X 'POST' \
  'https://petstore.swagger.io/v2/pet' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "id": 194356,
  "category": {
    "id": 0,
    "name": "string"
  },
  "name": "Puppy",
  "photoUrls": [
    "string"
  ],
  "tags": [
    {
      "id": 0,
      "name": "string"
    }
  ],
  "status": "available"
}'
```

5)Так же подобным образом можно получить ответ в json вместо xml

6)Направляемся в гугл и находим pre-built OpenAPI specification code (потому что в лабораторной не рабочая ссылка)

OpenAPI 3.0 specification example in JSON Format:

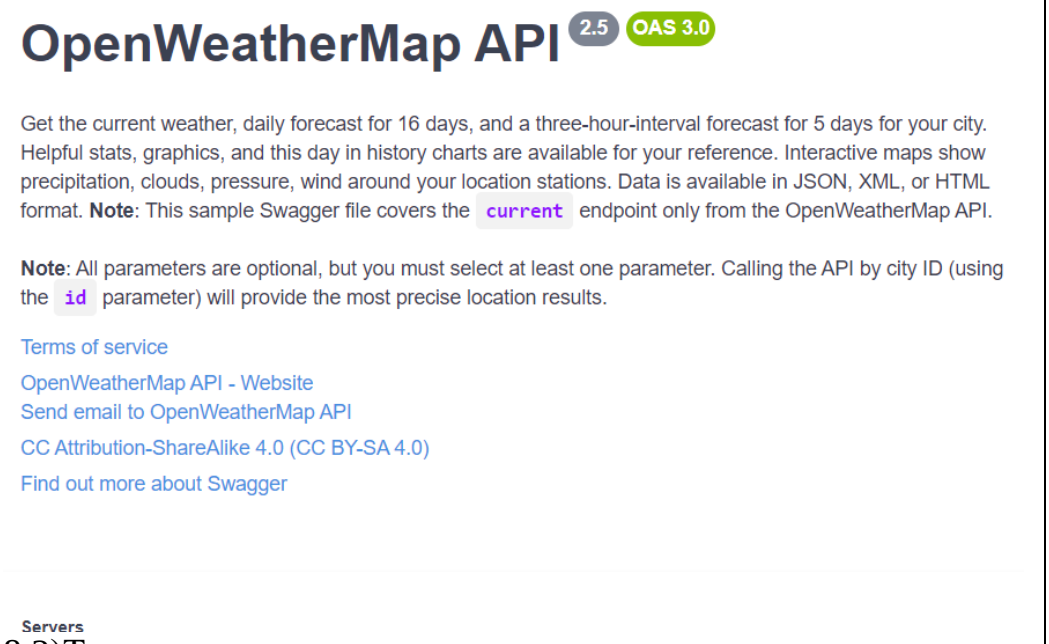
```
{
  "openapi": "3.0.0",
  "info": {
    "title": "API Title",
    "description": "API Description",
    "version": "1.0.0"
  }
}
}
```

7) теперь заходим в swagger редактор и начинаем с ним работу

8) И теперь начнём наполнять интерфейс swagger, для начала создадим документ спецификации

8.1) Нам нужно определить каждый объект, сначала мы заменим description

```yaml
openapi: "3.0.2"
info:
  title: "OpenWeatherMap API"
  description: "Get the current weather, daily forecast for 16 days, and a three
    -hour-interval forecast for 5 days for your city. Helpful stats, graphics, and
    this day in history charts are available for your reference. Interactive maps
    show precipitation, clouds, pressure, wind around your location stations. Data
    is available in JSON, XML, or HTML format. **Note**: This sample Swagger file
    covers the `current` endpoint only from the OpenWeatherMap API. <br/><br/>
    **Note**: All parameters are optional, but you must select at least one
    parameter. Calling the API by city ID (using the `id` parameter) will provide
    the most precise location results."
  version: "2.5"
  termsOfService: "https://openweathermap.org/terms"
  contact:
    name: "OpenWeatherMap API"
    url: "https://openweathermap.org/api"
    email: "some_email@gmail.com"
  license:
    name: "CC Attribution-ShareAlike 4.0 (CC BY-SA 4.0)"
    url: "https://openweathermap.org/price"
```



8.2)Теперь заменим на параметр server

```yaml
servers:
- url: https://api.openweathermap.org/data/2.5/
```

8.3)Подобным образом заменяем path вместе с компонентами (листинг №1) и externalDocs (листинг №2)

9) Тем что у нас в Swagger online editor в правой части горит дисплей Swagger UI означает что мы сделали всё правильно

OpenWeatherMap API 2.5 OAS 3.0

Get the current weather, daily forecast for 16 days, and a three-hour-interval forecast for 5 days for your city. Helpful stats, graphics, and this day in history charts are available for your reference. Interactive maps show precipitation, clouds, pressure, wind around your location stations. Data is available in JSON, XML, or HTML format. **Note**: This sample Swagger file covers the `current` endpoint only from the OpenWeatherMap API.

Note: All parameters are optional, but you must select at least one parameter. Calling the API by city ID (using the `id` parameter) will provide the mos precise location results.

Terms of service
OpenWeatherMap API - Website
Send email to OpenWeatherMap API
CC Attribution-ShareAlike 4.0 (CC BY-SA 4.0)
API Documentation

Servers
https://api.openweathermap.org/data/2.5/

Authorize

10) Теперь проверим полную работа способность, вводим город вводим ключ с openwearhermap который мы использовали раньше в другой лабораторной работе

Name	Description
q string *(query)*	**City name**. *Example: London*. You can call by city name, or by city name and country For the query value, type the city name and optionally the country code divided by a c Hamburg

Curl

```
curl -X 'GET' \
  'https://api.openweathermap.org/data/2.5/weather?q=Hamburg&units=imperial&lang=en&mode=json&API=626efee14f96
  -H 'accept: application/json'
```

Request URL

```
https://api.openweathermap.org/data/2.5/weather?q=Hamburg&units=imperial&lang=en&mode=json&API=626efee14f966bc
```

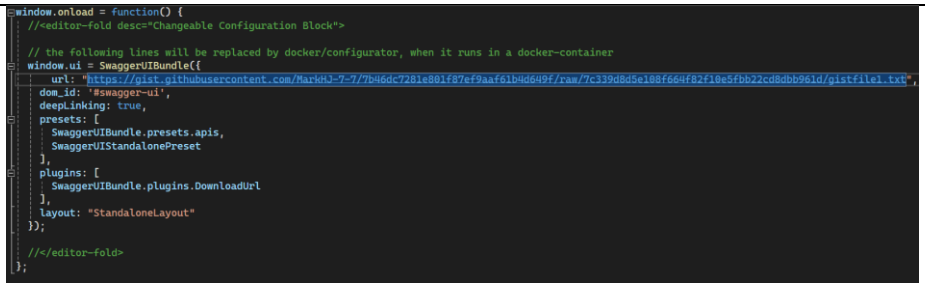
11) Ответ от этого сайта не приходит, ответ говорит об ошибке. Листинг с этого сайта(Листинг 3), Ответ возможно не приходит из за ошибки соединения, или недоступности на территории РФ

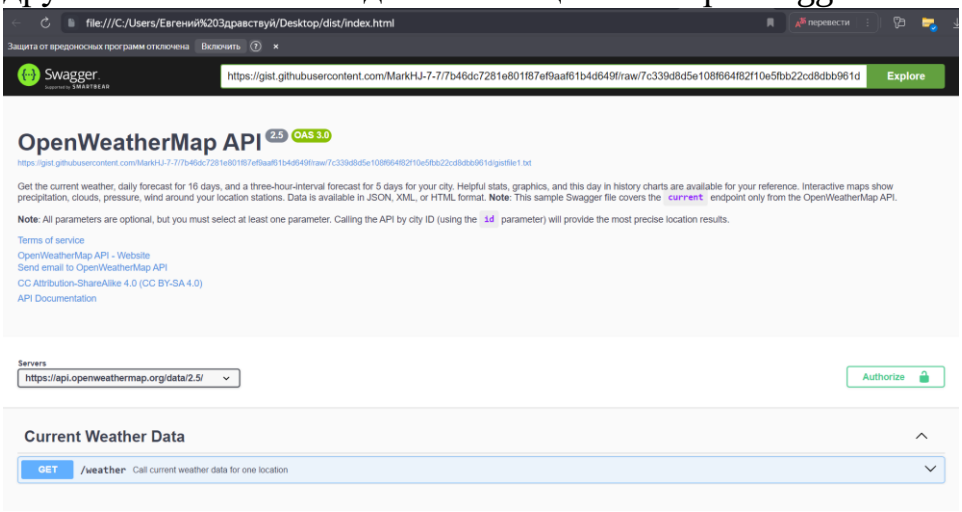
Code	Details

401
Undocumented
	Error: Unauthorized
	Response body
	`{ "cod": 401, "message": "Invalid API key. Please see https://openweathermap.org/faq#error401 for more info." }` Download
	Response headers
	`content-length: 108`
	`content-type: application/json; charset=utf-8`

Responses

12) Скачиваем папку dist, с приложенной гитхаб ссылки. Открываем нужный файл в этой папке. Так же паралельно открываем гитхаб гист, и закидываем туда код (Листинг 3). Затем копируем ссылку с гитхаба гист, и вставляем в нужный файл.

<table>
<tr>
<td></td>
<td>


Затем открываем файл index.html.
У нас открывается Swagger локально в нашем браузере, другими словами мы сделали инициализатор Swagger’а


Ссылка работает, сайт локально открывается
</td>
</tr>
<tr>
<td>Результат</td>
<td>В течении лабораторной работы мы научились работать в Swagger online editor, наполнять интерфейсы и углубились в работу с swagger. Смогли запустить сайт swagger локально на своём устройстве</td>
</tr>
</table>

Листинг №1

```
paths:

  /weather:

    get:

      tags:

      - Current Weather Data

      summary: "Call current weather data for one location"

      description: "Access current weather data for any location on Earth including o
ver 200,000 cities! Current weather is frequently updated based on global models and
data from more than 40,000 weather stations."

      operationId: CurrentWeatherData
```

```yaml
    parameters:
      - $ref: '#/components/parameters/q'
      - $ref: '#/components/parameters/id'
      - $ref: '#/components/parameters/lat'
      - $ref: '#/components/parameters/lon'
      - $ref: '#/components/parameters/zip'
      - $ref: '#/components/parameters/units'
      - $ref: '#/components/parameters/lang'
      - $ref: '#/components/parameters/mode'

    responses:
      200:
        description: Successful response
        content:
          application/json:
            schema:
              title: Sample
              type: object
              properties:
                placeholder:
                  type: string
                  description: Placeholder description

      404:
```

```
          description: Not found response

          content:

            text/plain:

              schema:

                title: Weather not found

                type: string

                example: Not found



components:



  parameters:

    q:

      name: q

      in: query

      description: "**City name**. *Example: London*. You can call by city name, or b
y city name and country code. The API responds with a list of results that match a se
arching word. For the query value, type the city name and optionally the country code
divided by a comma; use ISO 3166 country codes."

      schema:

        type: string

    id:

      name: id

      in: query

      description: "**City ID**. *Example: `2172797`*. You can call by city ID. The A
PI responds with the exact result. The List of city IDs can be downloaded [here](http
://bulk.openweathermap.org/sample/). You can include multiple cities in this paramete
r &mdash; just separate them by commas. The limit of locations is 20. *Note: A single
ID counts as a one API call. So, if you have city IDs, it's treated as 3 API calls.*"
```

```
      schema:

        type: string



    lat:

      name: lat

      in: query

      description: "**Latitude**. *Example: 35*. The latitude coordinate of the locat
ion of your interest. Must use with `lon`."

      schema:

        type: string



    lon:

      name: lon

      in: query

      description: "**Longitude**. *Example: 139*. Longitude coordinate of the locati
on of your interest. Must use with `lat`."

      schema:

        type: string



    zip:

      name: zip

      in: query

      description: "**Zip code**. Search by zip code. *Example: 95050,us*. Please not
e that if the country is not specified, the search uses USA as a default."

      schema:

        type: string
```

```
    units:

      name: units

      in: query

      description: '**Units**. *Example: imperial*. Possible values: `standard`, `met
ric`, and `imperial`. When you do not use the `units` parameter, the format is `stand
ard` by default.'

      schema:

        type: string

        enum: [standard, metric, imperial]

        default: "imperial"



    lang:

      name: lang

      in: query

      description: '**Language**. *Example: en*. You can use lang parameter to get th
e output in your language. We support the following languages that you can use with t
he corresponded lang values: Arabic - `ar`, Bulgarian - `bg`, Catalan - `ca`, Czech -
`cz`, German - `de`, Greek - `el`, English - `en`, Persian (Farsi) - `fa`, Finnish -
`fi`, French - `fr`, Galician - `gl`, Croatian - `hr`, Hungarian - `hu`, Italian - `i
t`, Japanese - `ja`, Korean - `kr`, Latvian - `la`, Lithuanian - `lt`, Macedonian - `
mk`, Dutch - `nl`, Polish - `pl`, Portuguese - `pt`, Romanian - `ro`, Russian - `ru`,
Swedish - `se`, Slovak - `sk`, Slovenian - `sl`, Spanish - `es`, Turkish - `tr`, Ukra
inian - `ua`, Vietnamese - `vi`, Chinese Simplified - `zh_cn`, Chinese Traditional -
`zh_tw`.'

      schema:

        type: string

        enum: [ar, bg, ca, cz, de, el, en, fa, fi, fr, gl, hr, hu, it, ja, kr, la, lt
, mk, nl, pl, pt, ro, ru, se, sk, sl, es, tr, ua, vi, zh_cn, zh_tw]

        default: "en"
```

```
    mode:

      name: mode

      in: query

      description: "**Mode**. *Example: html*. Determines the format of the response.
Possible values are `xml` and `html`. If the mode parameter is empty, the format is `
json` by default."

      schema:

        type: string

        enum: [json, xml, html]

        default: "json"
```

Листинг №2

```
externalDocs:

  description: API Documentation

  url: https://openweathermap.org/api
```

Листинг 3

openapi: "3.0.2"

info:

  title: "OpenWeatherMap API"

  description: "Get the current weather, daily forecast for 16 days, and a three-hour-interval forecast for 5 days for your city. Helpful stats, graphics, and this day in history charts are available for your reference. Interactive maps show precipitation, clouds, pressure, wind around your location stations. Data is available in JSON, XML, or HTML format. **Note**: This sample Swagger file covers the `current`

endpoint only from the OpenWeatherMap API.

 Note: All parameters are optional, but you must select at least one parameter. Calling the API by city ID (using the `id` parameter) will provide the most precise location results."

```
  version: "2.5"
  termsOfService: "https://openweathermap.org/terms"
  contact:
    name: "OpenWeatherMap API"
    url: "https://openweathermap.org/api"
    email: "notsayed@gmail.com"
  license:
    name: "CC Attribution-ShareAlike 4.0 (CC BY-SA 4.0)"
    url: "https://openweathermap.org/price"
servers:
  - url: "https://api.openweathermap.org/data/2.5/"
externalDocs:
  description: API Documentation
  url: https://openweathermap.org/api


paths:
  /weather:
    get:
      tags:
      - Current Weather Data
      summary: "Call current weather data for one location"
      description: "Access current weather data for any location on Earth including over 200,000 cities! Current weather is frequently updated based on global models and data from more than 40,000 weather stations."
      operationId: CurrentWeatherData
      parameters:
        - $ref: '#/components/parameters/q'
```

```
      - $ref: '#/components/parameters/id'
      - $ref: '#/components/parameters/lat'
      - $ref: '#/components/parameters/lon'
      - $ref: '#/components/parameters/zip'
      - $ref: '#/components/parameters/units'
      - $ref: '#/components/parameters/lang'
      - $ref: '#/components/parameters/mode'
      - $ref: '#/components/parameters/appid'

    responses:
      200:
        description: Successful response
        content:
          application/json:
            schema:
              $ref: '#/components/schemas/200'
      404:
        description: Not found response
        content:
          text/plain:
            schema:
              title: Weather not found
              type: string
              example: Not found

components:

  parameters:
    q:
```

name: q

in: query

description: "**City name**. *Example: London*. You can call by city name, or by city name and country code. The API responds with a list of results that match a searching word. For the query value, type the city name and optionally the country code divided by a comma; use ISO 3166 country codes."

schema:

type: string

id:

name: id

in: query

description: "**City ID**. *Example: `2172797`*. You can call by city ID. The API responds with the exact result. The List of city IDs can be downloaded [here](http://bulk.openweathermap.org/sample/). You can include multiple cities in this parameter — just separate them by commas. The limit of locations is 20. *Note: A single ID counts as a one API call. So, if you have city IDs, it's treated as 3 API calls.*"

schema:

type: string

lat:

name: lat

in: query

description: "**Latitude**. *Example: 35*. The latitude coordinate of the location of your interest. Must use with `lon`."

schema:

type: string

lon:

name: lon

in: query

description: "**Longitude**. *Example: 139*. Longitude coordinate of the location of your interest. Must use with `lat`."

schema:

type: string

zip:

name: zip

in: query

description: "**Zip code**. Search by zip code. *Example: 95050,us*. Please note that if the country is not specified, the search uses USA as a default."

schema:

type: string

units:

name: units

in: query

description: '**Units**. *Example: imperial*. Possible values: `standard`, `metric`, and `imperial`. When you do not use the `units` parameter, the format is `standard` by default.'

schema:

type: string

enum: [standard, metric, imperial]

default: "imperial"

lang:

name: lang

in: query

description: '**Language**. *Example: en*. You can use lang parameter to get the output in your language. We support the following languages that you can use with the corresponded lang values: Arabic - `ar`, Bulgarian - `bg`, Catalan - `ca`, Czech - `cz`, German - `de`, Greek - `el`, English - `en`, Persian (Farsi) - `fa`,

Finnish - `fi`, French - `fr`, Galician - `gl`, Croatian - `hr`, Hungarian - `hu`, Italian - `it`, Japanese - `ja`, Korean - `kr`, Latvian - `la`, Lithuanian - `lt`, Macedonian - `mk`, Dutch - `nl`, Polish - `pl`, Portuguese - `pt`, Romanian - `ro`, Russian - `ru`, Swedish - `se`, Slovak - `sk`, Slovenian - `sl`, Spanish - `es`, Turkish - `tr`, Ukrainian - `ua`, Vietnamese - `vi`, Chinese Simplified - `zh_cn`, Chinese Traditional - `zh_tw`.'

schema:

type: string

enum: [ar, bg, ca, cz, de, el, en, fa, fi, fr, gl, hr, hu, it, ja, kr, la, lt, mk, nl, pl, pt, ro, ru, se, sk, sl, es, tr, ua, vi, zh_cn, zh_tw]

default: "en"

mode:

name: mode

in: query

description: "**Mode**. *Example: html*. Determines the format of the response. Possible values are `xml` and `html`. If the mode parameter is empty, the format is `json` by default."

schema:

type: string

enum: [json, xml, html]

default: "json"

appid:

name: API

in: query

description: "Write there your `API key` from OpenWeatherMap"

schema:

type: string

schemas:

200:

```
title: Successful response
type: object
properties:
  coord:
    $ref: '#/components/schemas/Coord'
  weather:
    type: array
    items:
      $ref: '#/components/schemas/Weather'
    description: (more info Weather condition codes)
  base:
    type: string
    description: Internal parameter
    example: cmc stations
  main:
    $ref: '#/components/schemas/Main'
  visibility:
    type: integer
    description: Visibility, meter
    example: 16093
  wind:
    $ref: '#/components/schemas/Wind'
  clouds:
    $ref: '#/components/schemas/Clouds'
  rain:
    $ref: '#/components/schemas/Rain'
  snow:
    $ref: '#/components/schemas/Snow'
  dt:
```

```
      type: integer
      description: Time of data calculation, unix, UTC
      format: int32
      example: 1435658272
    sys:
      $ref: '#/components/schemas/Sys'
    id:
      type: integer
      description: City ID
      format: int32
      example: 2172797
    name:
      type: string
      example: Cairns
    cod:
      type: integer
      description: Internal parameter
      format: int32
      example: 200
Coord:
  title: Coord
  type: object
  properties:
    lon:
      type: number
      description: City geo location, longitude
      example: 20.511
    lat:
      type: number
```

```
      description: City geo location, latitude
      example: 54.70
  Weather:
    title: Weather
    type: object
    properties:
      id:
        type: integer
        description: Weather condition id
        format: int32
        example: 803
      main:
        type: string
        description: Group of weather parameters (Rain, Snow, Extreme etc.)
        example: Clouds
      description:
        type: string
        description: Weather condition within the group
        example: broken clouds
      icon:
        type: string
        description: Weather icon id
        example: 04n
  Main:
    title: Main
    type: object
    properties:
      temp:
        type: number
```

description: 'Temperature. Unit Default: Kelvin, Metric: Celsius, Imperial: Fahrenheit.'

example: 293.25

pressure:

type: integer

description: Atmospheric pressure (on the sea level, if there is no sea_level or grnd_level data), hPa

format: int32

example: 1019

humidity:

type: integer

description: Humidity, %

format: int32

example: 83

temp_min:

type: number

description: 'Minimum temperature at the moment. This is deviation from current temp that is possible for large cities and megalopolises geographically expanded (use these parameter optionally). Unit Default: Kelvin, Metric: Celsius, Imperial: Fahrenheit.'

example: 289.81999999999999

temp_max:

type: number

description: 'Maximum temperature at the moment. This is deviation from current temp that is possible for large cities and megalopolises geographically expanded (use these parameter optionally). Unit Default: Kelvin, Metric: Celsius, Imperial: Fahrenheit.'

example: 295.37

sea_level:

type: number

description: Atmospheric pressure on the sea level, hPa

```
        example: 984
      grnd_level:
        type: number
        description: Atmospheric pressure on the ground level, hPa
        example: 990
  Wind:
    title: Wind
    type: object
    properties:
      speed:
        type: number
        description: 'Wind speed. Unit Default: meter/sec, Metric: meter/sec,
Imperial: miles/hour.'
        example: 5.0999999999999996
      deg:
        type: integer
        description: Wind direction, degrees (meteorological)
        format: int32
        example: 150
  Clouds:
    title: Clouds
    type: object
    properties:
      all:
        type: integer
        description: Cloudiness, %
        format: int32
        example: 75
  Rain:
```

```
  title: Rain
  type: object
  properties:
    3h:
      type: integer
      description: Rain volume for the last 3 hours
      format: int32
      example: 3
Snow:
  title: Snow
  type: object
  properties:
    3h:
      type: number
      description: Snow volume for the last 3 hours
      example: 6
Sys:
  title: Sys
  type: object
  properties:
    type:
      type: integer
      description: Internal parameter
      format: int32
      example: 1
    id:
      type: integer
      description: Internal parameter
      format: int32
```

```
        example: 8166
      message:
        type: number
        description: Internal parameter
        example: 0.0166
      country:
        type: string
        description: Country code (GB, JP etc.)
        example: AU
      sunrise:
        type: integer
        description: Sunrise time, unix, UTC
        format: int32
        example: 1435610796
      sunset:
        type: integer
        description: Sunset time, unix, UTC
        format: int32
        example: 1435650870


  securitySchemes:
    app_id:
      type: apiKey
      description: API key to authorize requests. If you don't have an
OpenWeatherMap API key, use `fd4698c940c6d1da602a70ac34f0b147`.
      name: appid
      in: query
```