7.API.v4

October 26, 2019

Para entrar no modo apresentação, execute a seguinte célula e pressione -

```
[1]: %reload_ext slide
```

```
<IPython.core.display.Javascript object>
```

1 API v4

Este notebook apenas apresenta a API v4.

Anteriormente, o minicurso abordou a API v3 do GitHub, que utiliza REST. Agora, o minicurso abordará a API v4, que usa GraphQL (https://developer.github.com/v4/).

Antes de qualquer coisa, vamos iniciar o servidor de proxy, caso ele esteja fechado:

```
python proxy.py https://api.github.com/
```

Além do servidor de proxy, precisamos carregar o token e preparar a função de autenticação.

```
[2]: from ipywidgets import FileUpload, interact
     @interact(files=FileUpload())
     def set_token(files={}):
         global token
         if files:
             for key, values in files.items():
                 token = values['content'].decode("utf-8").strip()
                 print("Token Loaded!")
```

```
interactive(children=(FileUpload(value={}, description='Upload'), Output()), _dom_classes=('wid
```

```
[3]: import requests

     def token_auth(request):
         request.headers["User-Agent"] = "Minicurso" # Necessário
         request.headers["Authorization"] = "token {}".format(token)
         return request
```

Agora podemos tentar conectar na API v4 e verificar se a autenticação funcionou. Note que usamos POST e URL original é https://api.github.com/graphql.

```python
[4]: SITE = "http://localhost:5000/" # ou https://api.github.com

query = """
{
  rateLimit {
    limit
    cost
    remaining
    resetAt
  }
}
"""

response = requests.post(SITE + "graphql", json={'query': query},␣
 ↪auth=token_auth)
response.status_code
```

```
[4]: 200
```

```python
[5]: response.json()
```

```
[5]: {'data': {'rateLimit': {'limit': 5000,
    'cost': 1,
    'remaining': 4991,
    'resetAt': '2019-10-25T06:44:31Z'}}}
```

A consulta com a API v4 é um pouco mais verbosa, porém existe uma única URL de acesso e o resultado vem exatamente o que consultamos.

A seguir temos um exemplo de uma consulta quase completa em relação ao que fizemos na APIv3.

```python
[6]: query = """
query {
  repository(owner:"gems-uff", name:"sapos") {
      stargazers {
          totalCount
      }
      forks {
          totalCount
      }
      watchers {
          totalCount
      }
      primaryLanguage {
          name
```

```
        }
    open_issues: issues(states:OPEN, first:100) {
        totalCount
        edges {
            node {
                number
                closedAt
                createdAt
                labels(first:100) {
                  edges {
                    node {
                        name
                    }
                  }
                  pageInfo {
                    startCursor
                    hasNextPage
                    endCursor
                  }
                }
            }
        }
        pageInfo {
          startCursor
          hasNextPage
          endCursor
        }
    }
    closed_issues: issues(states:CLOSED, first:100) {
        totalCount
        edges {
            node {
                number
                closedAt
                createdAt
                labels(first:100) {
                  edges {
                    node {
                        name
                    }
                  }
                  pageInfo {
                    startCursor
                    hasNextPage
                    endCursor
                  }
                }
```

```
                }
            }
            pageInfo {
                startCursor
                hasNextPage
                endCursor
            }
        }
        mentionableUsers(first:100) {
            edges {
                node {
                    login
                }
            }
            pageInfo {
                startCursor
                hasNextPage
                endCursor
            }
        }
    }

}
"""

response = requests.post(SITE + "graphql", json={'query': query},␣
 ↪auth=token_auth)
print(response.status_code)
data = response.json()
data
```

200

```
[6]: {'data': {'repository': {'stargazers': {'totalCount': 18},
    'forks': {'totalCount': 11},
    'watchers': {'totalCount': 6},
    'primaryLanguage': {'name': 'Ruby'},
    'open_issues': {'totalCount': 39,
     'edges': [{'node': {'number': 10,
        'closedAt': None,
        'createdAt': '2013-06-30T21:48:34Z',
        'labels': {'edges': [],
         'pageInfo': {'startCursor': None,
          'hasNextPage': False,
          'endCursor': None}}}},
      {'node': {'number': 11,
        'closedAt': None,
```

4

```
             'createdAt': '2013-06-30T21:52:06Z',
             'labels': {'edges': [],
              'pageInfo': {'startCursor': None,
               'hasNextPage': False,
               'endCursor': None}}}},
{'node': {'number': 47,
   'closedAt': None,
   'createdAt': '2013-08-08T17:31:57Z',
   'labels': {'edges': [{'node': {'name': '4.3.12'}},
     {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEyzibEArs=',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 71,
   'closedAt': None,
   'createdAt': '2013-10-11T14:58:46Z',
   'labels': {'edges': [{'node': {'name': 'wiki'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKkd2lrac4DmoZw',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKkd2lrac4DmoZw'}}}},
{'node': {'number': 128,
   'closedAt': None,
   'createdAt': '2014-04-15T12:58:09Z',
   'labels': {'edges': [],
    'pageInfo': {'startCursor': None,
     'hasNextPage': False,
     'endCursor': None}}}},
{'node': {'number': 129,
   'closedAt': None,
   'createdAt': '2014-04-15T13:09:52Z',
   'labels': {'edges': [],
    'pageInfo': {'startCursor': None,
     'hasNextPage': False,
     'endCursor': None}}}},
{'node': {'number': 130,
   'closedAt': None,
   'createdAt': '2014-04-15T13:16:40Z',
   'labels': {'edges': [{'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 150,
   'closedAt': None,
   'createdAt': '2014-08-30T22:47:51Z',
   'labels': {'edges': [],
    'pageInfo': {'startCursor': None,
     'hasNextPage': False,
```

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        'endCursor': None}}}},
{'node': {'number': 157,
  'closedAt': None,
  'createdAt': '2014-11-03T10:54:43Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 162,
  'closedAt': None,
  'createdAt': '2014-12-04T20:14:02Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 174,
  'closedAt': None,
  'createdAt': '2015-02-10T16:32:19Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 175,
  'closedAt': None,
  'createdAt': '2015-02-10T16:35:43Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 183,
  'closedAt': None,
  'createdAt': '2015-04-30T20:58:19Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 184,
  'closedAt': None,
  'createdAt': '2015-05-07T21:28:24Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 195,
  'closedAt': None,
  'createdAt': '2015-06-27T00:50:05Z',
  'labels': {'edges': [],
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        'pageInfo': {'startCursor': None,
         'hasNextPage': False,
         'endCursor': None}}}},
{'node': {'number': 209,
  'closedAt': None,
  'createdAt': '2015-09-15T13:28:44Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 210,
  'closedAt': None,
  'createdAt': '2015-10-20T17:47:15Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 216,
  'closedAt': None,
  'createdAt': '2015-12-14T22:34:15Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 217,
  'closedAt': None,
  'createdAt': '2016-02-03T19:36:57Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 218,
  'closedAt': None,
  'createdAt': '2016-02-03T19:37:14Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 219,
  'closedAt': None,
  'createdAt': '2016-03-03T12:28:08Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 224,
  'closedAt': None,

```
    'createdAt': '2017-03-07T14:49:44Z',
    'labels': {'edges': [],
     'pageInfo': {'startCursor': None,
      'hasNextPage': False,
      'endCursor': None}}}},
{'node': {'number': 237,
  'closedAt': None,
  'createdAt': '2017-11-23T13:03:44Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 247,
  'closedAt': None,
  'createdAt': '2018-03-02T22:36:36Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 249,
  'closedAt': None,
  'createdAt': '2018-03-13T19:23:52Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 254,
  'closedAt': None,
  'createdAt': '2018-04-07T16:01:52Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 255,
  'closedAt': None,
  'createdAt': '2018-04-13T13:24:10Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
{'node': {'number': 263,
  'closedAt': None,
  'createdAt': '2018-05-05T13:53:44Z',
  'labels': {'edges': [],
   'pageInfo': {'startCursor': None,
    'hasNextPage': False,
    'endCursor': None}}}},
```

```
{'node': {'number': 265,
  'closedAt': None,
  'createdAt': '2018-07-17T16:45:07Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 269,
  'closedAt': None,
  'createdAt': '2018-09-11T19:23:12Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 286,
  'closedAt': None,
  'createdAt': '2019-01-31T15:07:22Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 289,
  'closedAt': None,
  'createdAt': '2019-03-14T21:44:40Z',
  'labels': {'edges': [{'node': {'name': 'Migration'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKpTWlncmF0aW9uzitUQ6M=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKpTWlncmF0aW9uzitUQ6M='}}}},
{'node': {'number': 291,
  'closedAt': None,
  'createdAt': '2019-04-04T19:23:46Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 294,
  'closedAt': None,
  'createdAt': '2019-06-05T20:22:16Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 295,
  'closedAt': None,
  'createdAt': '2019-06-28T17:28:01Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
```

          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 297,
    'closedAt': None,
    'createdAt': '2019-07-02T16:43:48Z',
    'labels': {'edges': [{'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 301,
    'closedAt': None,
    'createdAt': '2019-09-17T00:03:25Z',
    'labels': {'edges': [{'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 302,
    'closedAt': None,
    'createdAt': '2019-09-20T16:58:12Z',
    'labels': {'edges': [{'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 303,
    'closedAt': None,
    'createdAt': '2019-09-20T16:58:50Z',
    'labels': {'edges': [],
     'pageInfo': {'startCursor': None,
      'hasNextPage': False,
      'endCursor': None}}}}],
 'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpHOAPcZcg==',
  'hasNextPage': False,
  'endCursor': 'Y3Vyc29yOnYyOpHOHZdLVw=='}},
'closed_issues': {'totalCount': 241,
 'edges': [{'node': {'number': 1,
    'closedAt': '2013-07-19T14:21:51Z',
    'createdAt': '2013-06-29T15:23:48Z',
    'labels': {'edges': [{'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 2,
    'closedAt': '2013-07-22T15:10:37Z',
    'createdAt': '2013-06-29T23:10:15Z',
    'labels': {'edges': [{'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
      'hasNextPage': False,

'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 3,
  'closedAt': '2014-01-27T12:34:00Z',
  'createdAt': '2013-06-30T21:09:02Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 4,
  'closedAt': '2013-07-19T14:45:38Z',
  'createdAt': '2013-06-30T21:18:59Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 5,
  'closedAt': '2013-07-22T15:10:37Z',
  'createdAt': '2013-06-30T21:28:41Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 6,
  'closedAt': '2014-01-16T18:36:41Z',
  'createdAt': '2013-06-30T21:34:36Z',
  'labels': {'edges': [{'node': {'name': 'duplicate'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKpZHVwbGljYXRlzgAUplE=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKpZHVwbGljYXRlzgAUplE='}}}},
{'node': {'number': 7,
  'closedAt': '2013-10-04T12:12:49Z',
  'createdAt': '2013-06-30T21:36:24Z',
  'labels': {'edges': [{'node': {'name': '2.4.5'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjXOA3JWKw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 8,
  'closedAt': '2013-10-04T12:12:49Z',
  'createdAt': '2013-06-30T21:39:15Z',
  'labels': {'edges': [{'node': {'name': '2.4.5'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjXOA3JWKw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 9,
  'closedAt': '2013-10-31T16:06:06Z',

                'createdAt': '2013-06-30T21:41:07Z',
                'labels': {'edges': [{'node': {'name': '3.1.0'}}],
                 'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw==',
                  'hasNextPage': False,
                  'endCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw=='}}}},
{'node': {'number': 12,
   'closedAt': '2014-02-22T15:55:37Z',
   'createdAt': '2013-06-30T21:52:58Z',
   'labels': {'edges': [{'node': {'name': '3.3.0'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg=='}}}},
{'node': {'number': 13,
   'closedAt': '2013-10-11T16:11:24Z',
   'createdAt': '2013-07-01T02:13:48Z',
   'labels': {'edges': [{'node': {'name': 'duplicate'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKpZHVwbGljYXRlzgAUplE=',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKpZHVwbGljYXRlzgAUplE='}}}},
{'node': {'number': 14,
   'closedAt': '2014-07-12T02:40:05Z',
   'createdAt': '2013-07-01T02:14:40Z',
   'labels': {'edges': [{'node': {'name': '4.0.0'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
{'node': {'number': 15,
   'closedAt': '2013-08-16T14:54:06Z',
   'createdAt': '2013-07-01T02:17:17Z',
   'labels': {'edges': [{'node': {'name': '2.3.0'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi4zLjDOA5qYvg==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlMi4zLjDOA5qYvg=='}}}},
{'node': {'number': 16,
   'closedAt': '2014-06-30T23:45:31Z',
   'createdAt': '2013-07-01T02:19:29Z',
   'labels': {'edges': [{'node': {'name': 'wontfix'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKnd29udGZpeM4AFKZV',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKnd29udGZpeM4AFKZV'}}}},
{'node': {'number': 17,
   'closedAt': '2013-09-24T14:27:24Z',
   'createdAt': '2013-07-01T02:23:48Z',
   'labels': {'edges': [],
    'pageInfo': {'startCursor': None,
     'hasNextPage': False,
     'endCursor': None}}}},

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{'node': {'number': 18,
  'closedAt': '2013-07-22T14:54:42Z',
  'createdAt': '2013-07-01T02:45:50Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 19,
  'closedAt': '2013-07-22T14:54:42Z',
  'createdAt': '2013-07-01T02:47:03Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 20,
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  'labels': {'edges': [{'node': {'name': '3.0.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw=='}}}},
{'node': {'number': 22,
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw==',
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjDOA3JpWw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMi40LjDOA3JpWw=='}}}},
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  'createdAt': '2013-07-04T21:26:05Z',
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        'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-07-17T14:37:11Z',
  'labels': {'edges': [{'node': {'name': '3.1.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw==',
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    'endCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw=='}}}},
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  'createdAt': '2013-07-17T14:45:51Z',
  'labels': {'edges': [{'node': {'name': '2.4.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjDOA3JpWw==',
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    'endCursor': 'Y3Vyc29yOnYyOpKlMi40LjDOA3JpWw=='}}}},
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  'createdAt': '2013-07-17T14:50:41Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw=='}}}},
{'node': {'number': 28,
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  'createdAt': '2013-07-17T14:53:32Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw=='}}}},
{'node': {'number': 31,
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  'createdAt': '2013-07-22T17:55:42Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
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  'createdAt': '2013-07-23T15:38:01Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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    'endCursor': 'Y3Vyc29yOnYyOpKnd29udGZpeM4AFKZV'}}}},
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  'createdAt': '2013-07-29T20:06:16Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-02T14:52:33Z',
  'labels': {'edges': [{'node': {'name': '2.4.7'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjfOA4N7TQ==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-04T16:39:59Z',
  'labels': {'edges': [{'node': {'name': '2.4.4'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjTOA3JV7g==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-04T21:41:22Z',
  'labels': {'edges': [{'node': {'name': '2.4.6'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjbOA3JWZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 41,
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  'createdAt': '2013-08-04T21:42:54Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-07T00:14:26Z',
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          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-08T12:15:35Z',
  'labels': {'edges': [{'node': {'name': '2.4.2'}},
    {'node': {'name': 'bug'}}],
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 45,
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  'createdAt': '2013-08-08T12:22:22Z',
  'labels': {'edges': [{'node': {'name': '2.4.3'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjPOA3JVtw==',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-08T14:27:56Z',
  'labels': {'edges': [{'node': {'name': '2.4.7'}},
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 48,
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  'createdAt': '2013-08-09T02:13:31Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
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    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
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  'closedAt': '2014-08-11T23:31:32Z',
  'createdAt': '2013-08-09T02:15:39Z',
  'labels': {'edges': [{'node': {'name': '4.0.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
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  'closedAt': '2013-10-14T12:37:31Z',
  'createdAt': '2013-08-09T02:17:26Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}}],
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'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
 'hasNextPage': False,
 'endCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw=='}}}},
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  'createdAt': '2013-08-09T15:12:46Z',
  'labels': {'edges': [{'node': {'name': '2.4.7'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjfOA4N7TQ==',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 52,
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  'createdAt': '2013-08-12T22:10:05Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 53,
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  'createdAt': '2013-08-13T12:47:22Z',
  'labels': {'edges': [{'node': {'name': '2.4.5'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjXOA3JWKw==',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-15T23:32:23Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
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   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 55,
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  'createdAt': '2013-08-18T16:03:59Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
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   'endCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw=='}}}},
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  'createdAt': '2013-08-20T01:20:02Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}},
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',

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                'hasNextPage': False,
                'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-08-28T19:23:04Z',
  'labels': {'edges': [{'node': {'name': '2.4.7'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjfOA4N7TQ==',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-09-06T11:58:16Z',
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
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    'endCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw=='}}}},
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  'createdAt': '2013-09-12T18:53:23Z',
  'labels': {'edges': [{'node': {'name': '4.0.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
{'node': {'number': 63,
  'closedAt': '2013-09-24T12:26:47Z',
  'createdAt': '2013-09-18T22:16:35Z',
  'labels': {'edges': [{'node': {'name': '2.4.7'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjfOA4N7TQ==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-09-24T20:26:13Z',
  'labels': {'edges': [{'node': {'name': '2.4.7'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjfOA4N7TQ==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 65,
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  'createdAt': '2013-09-30T20:10:49Z',
  'labels': {'edges': [{'node': {'name': '2.4.8'}},
    {'node': {'name': 'bug'}}],
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  'createdAt': '2013-10-04T12:03:29Z',
  'labels': {'edges': [{'node': {'name': '2.4.8'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjjOA4z84Q==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-10-04T12:49:38Z',
  'labels': {'edges': [{'node': {'name': '2.4.8'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMi40LjjOA4z84Q==',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 68,
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  'createdAt': '2013-10-05T23:37:27Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
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    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
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  'createdAt': '2013-10-06T00:00:32Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 70,
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  'createdAt': '2013-10-06T01:06:27Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2013-10-15T18:05:49Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},

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  'createdAt': '2013-10-21T15:46:13Z',
  'labels': {'edges': [{'node': {'name': '3.0.0'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4wLjDOA5_wZw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 76,
  'closedAt': '2013-10-30T09:55:26Z',
  'createdAt': '2013-10-28T01:35:06Z',
  'labels': {'edges': [{'node': {'name': '3.1.0'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 77,
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  'createdAt': '2013-10-28T01:41:37Z',
  'labels': {'edges': [{'node': {'name': '3.1.0'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 78,
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  'createdAt': '2013-10-28T22:08:46Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
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    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 79,
  'closedAt': '2013-11-18T00:14:58Z',
  'createdAt': '2013-10-28T22:09:40Z',
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 80,
  'closedAt': '2013-11-04T16:29:45Z',
  'createdAt': '2013-10-28T22:10:06Z',
  'labels': {'edges': [{'node': {'name': 'duplicate'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKpZHVwbGljYXRlzgAUplE=',
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    'endCursor': 'Y3Vyc29yOnYyOpKpZHVwbGljYXRlzgAUplE='}}}},
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   'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 82,
  'closedAt': '2013-11-17T21:36:14Z',
  'createdAt': '2013-10-29T13:59:12Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 83,
  'closedAt': '2013-10-30T12:37:32Z',
  'createdAt': '2013-10-30T12:09:01Z',
  'labels': {'edges': [{'node': {'name': '3.1.0'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4xLjDOA-syqw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 84,
  'closedAt': '2013-11-18T17:27:43Z',
  'createdAt': '2013-10-31T16:18:31Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 85,
  'closedAt': '2013-11-19T00:16:10Z',
  'createdAt': '2013-11-13T19:37:19Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 86,
  'closedAt': '2013-11-19T00:05:07Z',
  'createdAt': '2013-11-15T23:49:27Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 87,
  'closedAt': '2013-11-18T00:57:03Z',
  'createdAt': '2013-11-17T14:51:38Z',
  'labels': {'edges': [{'node': {'name': '3.2.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
```

```
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 88,
   'closedAt': '2013-11-18T01:05:19Z',
   'createdAt': '2013-11-17T17:27:27Z',
   'labels': {'edges': [{'node': {'name': '3.2.0'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 89,
   'closedAt': '2014-01-16T18:18:36Z',
   'createdAt': '2013-11-19T00:11:40Z',
   'labels': {'edges': [{'node': {'name': '3.2.0'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 90,
   'closedAt': '2014-01-14T22:23:59Z',
   'createdAt': '2013-12-11T17:19:48Z',
   'labels': {'edges': [{'node': {'name': '3.2.0'}},
     {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 91,
   'closedAt': '2014-01-06T12:15:14Z',
   'createdAt': '2013-12-17T14:11:40Z',
   'labels': {'edges': [{'node': {'name': '3.2.0'}},
     {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 93,
   'closedAt': '2014-01-16T02:52:12Z',
   'createdAt': '2014-01-15T21:43:57Z',
   'labels': {'edges': [{'node': {'name': '3.2.0'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 94,
   'closedAt': '2014-01-17T19:56:58Z',
   'createdAt': '2014-01-17T14:59:23Z',
   'labels': {'edges': [{'node': {'name': '3.2.0'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 95,
```

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      'closedAt': '2014-01-21T15:47:52Z',
      'createdAt': '2014-01-20T12:55:38Z',
      'labels': {'edges': [{'node': {'name': '3.2.0'}}],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 96,
      'closedAt': '2014-01-24T02:35:37Z',
      'createdAt': '2014-01-21T12:39:45Z',
      'labels': {'edges': [{'node': {'name': '3.2.0'}}],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 97,
      'closedAt': '2014-01-23T01:11:33Z',
      'createdAt': '2014-01-21T23:43:44Z',
      'labels': {'edges': [{'node': {'name': '3.2.0'}}],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 98,
      'closedAt': '2014-01-23T16:18:15Z',
      'createdAt': '2014-01-23T15:35:35Z',
      'labels': {'edges': [{'node': {'name': '3.2.0'}}],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 99,
      'closedAt': '2014-01-24T03:58:54Z',
      'createdAt': '2014-01-24T03:56:56Z',
      'labels': {'edges': [{'node': {'name': '3.2.0'}}],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 100,
      'closedAt': '2014-08-30T22:47:07Z',
      'createdAt': '2014-01-24T16:47:29Z',
      'labels': {'edges': [{'node': {'name': '4.0.0'}}],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
{'node': {'number': 101,
      'closedAt': '2014-01-27T18:58:35Z',
      'createdAt': '2014-01-27T12:36:41Z',
      'labels': {'edges': [{'node': {'name': '3.2.0'}}],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw==',
        'hasNextPage': False,
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'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjDOBJv3Tw=='}}}},
{'node': {'number': 102,
  'closedAt': '2014-01-28T01:04:41Z',
  'createdAt': '2014-01-28T01:02:00Z',
  'labels': {'edges': [{'node': {'name': 'wontfix'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKnd29udGZpeM4AFKZV',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKnd29udGZpeM4AFKZV'}}}},
{'node': {'number': 103,
  'closedAt': '2014-01-28T23:31:04Z',
  'createdAt': '2014-01-28T18:00:42Z',
  'labels': {'edges': [{'node': {'name': '3.2.1'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjHOBKXhLA==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 104,
  'closedAt': '2014-01-29T21:09:03Z',
  'createdAt': '2014-01-28T18:02:37Z',
  'labels': {'edges': [{'node': {'name': '3.2.1'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjHOBKXhLA==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4yLjHOBKXhLA=='}}}},
{'node': {'number': 105,
  'closedAt': '2014-01-30T01:20:45Z',
  'createdAt': '2014-01-29T19:38:12Z',
  'labels': {'edges': [{'node': {'name': '3.2.1'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4yLjHOBKXhLA==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 106,
  'closedAt': '2014-02-13T22:07:19Z',
  'createdAt': '2014-01-29T21:52:55Z',
  'labels': {'edges': [{'node': {'name': '3.3.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg=='}}}},
{'node': {'number': 107,
  'closedAt': '2014-02-08T01:18:16Z',
  'createdAt': '2014-02-01T21:46:47Z',
  'labels': {'edges': [{'node': {'name': '3.3.0'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg=='}}}},
{'node': {'number': 108,
  'closedAt': '2014-02-01T22:58:34Z',

```
           'createdAt': '2014-02-01T21:49:58Z',
           'labels': {'edges': [{'node': {'name': '3.3.0'}}]},
            'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg==',
             'hasNextPage': False,
             'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg=='}}}},
   {'node': {'number': 109,
      'closedAt': '2014-05-05T13:14:20Z',
      'createdAt': '2014-02-03T17:01:44Z',
      'labels': {'edges': [{'node': {'name': '3.3.5'}}]},
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjXOBcvKmw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjXOBcvKmw=='}}}},
   {'node': {'number': 110,
      'closedAt': '2014-05-25T16:03:51Z',
      'createdAt': '2014-02-03T17:02:55Z',
      'labels': {'edges': [{'node': {'name': '3.3.5'}}]},
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjXOBcvKmw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjXOBcvKmw=='}}}},
   {'node': {'number': 111,
      'closedAt': '2014-07-07T23:52:46Z',
      'createdAt': '2014-02-03T17:03:52Z',
      'labels': {'edges': [{'node': {'name': '4.0.0'}}]},
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
   {'node': {'number': 112,
      'closedAt': '2014-02-06T19:18:23Z',
      'createdAt': '2014-02-03T19:01:34Z',
      'labels': {'edges': [{'node': {'name': '3.3.0'}},
        {'node': {'name': 'bug'}}]},
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjDOBOSYJg==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
   {'node': {'number': 113,
      'closedAt': '2014-07-08T05:04:34Z',
      'createdAt': '2014-02-04T15:23:58Z',
      'labels': {'edges': [{'node': {'name': 'invalid'}}]},
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKnaW52YWxpZM4AFKZT',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKnaW52YWxpZM4AFKZT'}}}},
   {'node': {'number': 114,
      'closedAt': '2014-07-11T22:17:56Z',
      'createdAt': '2014-02-07T11:54:30Z',
      'labels': {'edges': [{'node': {'name': '4.0.0'}}]},
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
        'hasNextPage': False,
```

```
          'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
       {'node': {'number': 115,
         'closedAt': '2014-02-24T20:12:38Z',
         'createdAt': '2014-02-21T22:54:55Z',
         'labels': {'edges': [{'node': {'name': '3.3.1'}}]},
          'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ==',
           'hasNextPage': False,
           'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ=='}}}},
       {'node': {'number': 117,
         'closedAt': '2014-02-24T17:55:54Z',
         'createdAt': '2014-02-24T15:00:15Z',
         'labels': {'edges': [{'node': {'name': '3.3.1'}},
           {'node': {'name': 'bug'}}]},
          'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ==',
           'hasNextPage': False,
           'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=='}}}}],
      'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpHOAPbUBA==',
       'hasNextPage': True,
       'endCursor': 'Y3Vyc29yOnYyOpHOAa3MGw=='}},
     'mentionableUsers': {'edges': [{'node': {'login': 'lvieirajr'}},
      {'node': {'login': 'emoreth'}},
      {'node': {'login': 'leomurta'}},
      {'node': {'login': 'JoaoFelipe'}},
      {'node': {'login': 'bernardocs'}},
      {'node': {'login': 'bschettino'}},
      {'node': {'login': 'braganholo'}},
      {'node': {'login': 'tiagoamaro'}},
      {'node': {'login': 'rdiasferreira'}},
      {'node': {'login': 'danielpcampagna'}},
      {'node': {'login': 'Carlos-Eduardo-Cabral-da-Cunha'}}],
      'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpHOAARTAg==',
       'hasNextPage': False,
       'endCursor': 'Y3Vyc29yOnYyOpHOAT9diw=='}}}}}
```

Uma única consulta é capaz de retornar boa parte das informações que precisamos.

Mas ATENÇÃO! Paginação ainda é necessária e é feita com os argumentos `first:100` e `after:{endCursor}`.

```
[7]: data["data"]["repository"]["closed_issues"]["pageInfo"]
```

```
[7]: {'startCursor': 'Y3Vyc29yOnYyOpHOAPbUBA==',
     'hasNextPage': True,
     'endCursor': 'Y3Vyc29yOnYyOpHOAa3MGw=='}
```

```
[8]: query_base = """
     query {
       repository(owner:"gems-uff", name:"sapos") {
```

```
        closed_issues: issues(states:CLOSED, first:100, after:"%s") {
            totalCount
            edges {
                node {
                    number
                    closedAt
                    createdAt
                    labels(first:100) {
                      edges {
                        node {
                            name
                        }
                      }
                      pageInfo {
                        startCursor
                        hasNextPage
                        endCursor
                      }
                    }
                }
            }
            pageInfo {
              startCursor
              hasNextPage
              endCursor
            }
        }
    }
}
"""
query = query_base %␣
 ↪(data["data"]["repository"]["closed_issues"]["pageInfo"]['endCursor'], )

response = requests.post(SITE + "graphql", json={'query': query},␣
 ↪auth=token_auth)
print(response.status_code)
data2 = response.json()
data2
```

200

[8]: {'data': {'repository': {'closed_issues': {'totalCount': 241,
    'edges': [{'node': {'number': 118,
       'closedAt': '2014-02-24T18:37:47Z',
       'createdAt': '2014-02-24T15:02:00Z',
       'labels': {'edges': [{'node': {'name': '3.3.1'}}],
        'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ==',

```
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ=='}}}},
{'node': {'number': 119,
  'closedAt': '2014-02-28T17:51:23Z',
  'createdAt': '2014-02-24T17:08:56Z',
  'labels': {'edges': [{'node': {'name': '3.3.1'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ=='}}}},
{'node': {'number': 120,
  'closedAt': '2014-02-28T17:52:07Z',
  'createdAt': '2014-02-28T17:09:22Z',
  'labels': {'edges': [{'node': {'name': '3.3.1'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjHOBRR8KQ=='}}}},
{'node': {'number': 121,
  'closedAt': '2014-03-11T19:39:43Z',
  'createdAt': '2014-03-10T20:26:32Z',
  'labels': {'edges': [{'node': {'name': '3.3.2'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjLOBSTLEQ==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjLOBSTLEQ=='}}}},
{'node': {'number': 122,
  'closedAt': '2014-03-16T03:55:34Z',
  'createdAt': '2014-03-16T00:26:15Z',
  'labels': {'edges': [{'node': {'name': '3.3.3'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjPOBSb2_Q==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 123,
  'closedAt': '2014-04-13T20:29:50Z',
  'createdAt': '2014-03-18T13:31:01Z',
  'labels': {'edges': [{'node': {'name': '3.3.4'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjTOBcvKjA==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjTOBcvKjA=='}}}},
{'node': {'number': 124,
  'closedAt': '2014-03-25T01:44:26Z',
  'createdAt': '2014-03-20T02:57:58Z',
  'labels': {'edges': [{'node': {'name': '3.3.4'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjTOBcvKjA==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjTOBcvKjA=='}}}},
{'node': {'number': 126,
  'closedAt': '2014-04-15T12:44:06Z',
```

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      'createdAt': '2014-04-13T20:44:40Z',
      'labels': {'edges': [{'node': {'name': '4.0.0'}}]],
       'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
        'hasNextPage': False,
        'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
{'node': {'number': 127,
   'closedAt': '2015-03-19T18:50:40Z',
   'createdAt': '2014-04-13T21:44:13Z',
   'labels': {'edges': [{'node': {'name': '4.3.0'}}]],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w=='}}}},
{'node': {'number': 131,
   'closedAt': '2015-04-21T17:40:13Z',
   'createdAt': '2014-04-15T13:19:50Z',
   'labels': {'edges': [{'node': {'name': '4.3.0'}}]],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w=='}}}},
{'node': {'number': 132,
   'closedAt': '2014-06-06T19:15:38Z',
   'createdAt': '2014-04-15T20:43:49Z',
   'labels': {'edges': [{'node': {'name': '4.0.0'}}]],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
{'node': {'number': 133,
   'closedAt': '2014-07-08T04:43:06Z',
   'createdAt': '2014-04-30T04:06:15Z',
   'labels': {'edges': [{'node': {'name': '4.0.0'}}]],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
{'node': {'number': 135,
   'closedAt': '2014-05-25T16:28:50Z',
   'createdAt': '2014-05-12T23:16:03Z',
   'labels': {'edges': [{'node': {'name': '3.3.6'}}]],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlMy4zLjbOBr3RNw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlMy4zLjbOBr3RNw=='}}}},
{'node': {'number': 136,
   'closedAt': '2014-07-07T06:49:50Z',
   'createdAt': '2014-05-25T16:05:38Z',
   'labels': {'edges': [{'node': {'name': '4.0.0'}}]],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKlNC4wLjDOB3-Exw=='}}}},
```

```
{'node': {'number': 137,
  'closedAt': '2014-06-06T18:53:30Z',
  'createdAt': '2014-06-04T15:10:45Z',
  'labels': {'edges': [{'node': {'name': '3.3.6'}},
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            'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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     {'node': {'name': 'bug'}}],
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      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2015-01-07T17:58:09Z',
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          'endCursor': 'Y3Vyc29yOnYyOpKlNC4yLjDOCnVh2w=='}}}},
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  'createdAt': '2015-01-07T18:17:19Z',
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          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2015-01-22T11:54:10Z',
  'labels': {'edges': [{'node': {'name': '4.3.0'}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w==',
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  'labels': {'edges': [{'node': {'name': '4.1.1'}},
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  'createdAt': '2015-02-04T18:50:54Z',
  'labels': {'edges': [{'node': {'name': '4.1.1'}},
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         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4xLjHOCm13xQ==',
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          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4xLjHOCm13xQ==',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2015-02-09T17:21:35Z',
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4yLjDOCnVh2w==',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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  'createdAt': '2015-02-13T11:30:52Z',
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w==',
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    'endCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w=='}}}},
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  'createdAt': '2015-02-22T13:42:51Z',
  'labels': {'edges': [{'node': {'name': '4.3.0'}},
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   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w==',
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    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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    {'node': {'name': 'bug'}}],
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     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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   'labels': {'edges': [{'node': {'name': '4.3.0'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjDODZEH7w==',
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    {'node': {'name': 'bug'}}],
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     {'node': {'name': '4.3.3'}},
     {'node': {'name': 'bug'}}],
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     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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   'createdAt': '2015-05-18T02:46:29Z',
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        'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjHODc1i5g==',
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     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 194,
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   'createdAt': '2015-06-23T22:25:31Z',
   'labels': {'edges': [{'node': {'name': '4.3.1'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjHODc1i5g==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 196,
   'closedAt': '2015-08-13T13:41:18Z',
   'createdAt': '2015-07-02T01:15:40Z',
   'labels': {'edges': [{'node': {'name': '4.3.5'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjXODpl5MA==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 197,
   'closedAt': '2015-07-05T03:40:42Z',
   'createdAt': '2015-07-02T12:26:30Z',
   'labels': {'edges': [{'node': {'name': '4.3.2'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjLODd33_g==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 198,
   'closedAt': '2015-10-25T01:38:16Z',
   'createdAt': '2015-07-02T12:28:08Z',
   'labels': {'edges': [{'node': {'name': '4.3.10'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEwziPNsU4=',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 199,
```

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    'closedAt': '2015-07-29T01:45:14Z',
    'createdAt': '2015-07-02T12:57:35Z',
    'labels': {'edges': [{'node': {'name': '4.3.3'}},
      {'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjPODmzw9g==',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 201,
    'closedAt': '2017-05-08T17:55:29Z',
    'createdAt': '2015-07-10T18:24:05Z',
    'labels': {'edges': [{'node': {'name': '4.3.10'}},
      {'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEwziPNsU4=',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 202,
    'closedAt': '2015-07-29T01:45:23Z',
    'createdAt': '2015-07-28T16:43:46Z',
    'labels': {'edges': [{'node': {'name': '4.3.3'}},
      {'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjPODmzw9g==',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 203,
    'closedAt': '2015-08-03T20:26:53Z',
    'createdAt': '2015-08-03T19:29:28Z',
    'labels': {'edges': [{'node': {'name': '4.3.4'}},
      {'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjTODoq06w==',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 204,
    'closedAt': '2015-08-06T15:23:39Z',
    'createdAt': '2015-08-04T15:28:14Z',
    'labels': {'edges': [{'node': {'name': '4.3.5'}},
      {'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjXODpl5MA==',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 205,
    'closedAt': '2015-10-25T01:38:28Z',
    'createdAt': '2015-08-06T20:04:33Z',
    'labels': {'edges': [{'node': {'name': '4.3.10'}},
      {'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEwziPNsU4=',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
```

{'node': {'number': 206,
  'closedAt': '2015-10-25T01:38:49Z',
  'createdAt': '2015-08-13T13:44:08Z',
  'labels': {'edges': [{'node': {'name': '4.3.10'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEwziPNsU4=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 207,
  'closedAt': '2015-09-11T05:26:48Z',
  'createdAt': '2015-09-10T14:55:51Z',
  'labels': {'edges': [{'node': {'name': '4.3.7'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjfOD3x5kA==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 208,
  'closedAt': '2015-09-17T20:25:22Z',
  'createdAt': '2015-09-13T23:01:31Z',
  'labels': {'edges': [{'node': {'name': '4.3.8'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjjOD5vxUA==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 215,
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  'createdAt': '2015-12-14T22:33:23Z',
  'labels': {'edges': [{'node': {'name': '4.3.10'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEwziPNsU4=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 220,
  'closedAt': '2017-05-08T17:54:39Z',
  'createdAt': '2016-03-04T11:32:49Z',
  'labels': {'edges': [{'node': {'name': '4.3.10'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEwziPNsU4=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 221,
  'closedAt': '2017-01-06T22:34:43Z',
  'createdAt': '2016-06-29T20:32:00Z',
  'labels': {'edges': [{'node': {'name': 'invalid'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKnaW52YWxpZM4AFKZT',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKnaW52YWxpZM4AFKZT'}}}},

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  'closedAt': '2017-05-08T17:53:51Z',
  'createdAt': '2017-05-08T17:52:12Z',
  'labels': {'edges': [{'node': {'name': '4.3.9'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC4zLjnOI82xHw==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKlNC4zLjnOI82xHw=='}}}},
{'node': {'number': 226,
  'closedAt': '2017-07-14T21:27:43Z',
  'createdAt': '2017-06-21T22:10:30Z',
  'labels': {'edges': [{'node': {'name': '4.3.12'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEyzibEArs=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 227,
  'closedAt': '2017-08-31T22:14:51Z',
  'createdAt': '2017-07-14T21:48:49Z',
  'labels': {'edges': [{'node': {'name': '4.3.13'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEzzikUVak=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 228,
  'closedAt': '2017-07-19T10:48:52Z',
  'createdAt': '2017-07-14T21:49:41Z',
  'labels': {'edges': [{'node': {'name': '4.3.12'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEyzibEArs=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 229,
  'closedAt': '2017-09-01T22:18:30Z',
  'createdAt': '2017-08-22T22:46:13Z',
  'labels': {'edges': [{'node': {'name': '4.3.13'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjEzzikUVak=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 230,
  'closedAt': '2017-10-11T22:11:19Z',
  'createdAt': '2017-09-04T00:12:34Z',
  'labels': {'edges': [{'node': {'name': '4.3.14'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjE0zitUD1c=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
```

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  'createdAt': '2017-09-04T00:13:31Z',
  'labels': {'edges': [{'node': {'name': '4.3.14'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjE0zitUD1c=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 232,
  'closedAt': '2017-10-19T19:16:17Z',
  'createdAt': '2017-09-11T17:57:19Z',
  'labels': {'edges': [{'node': {'name': '4.3.14'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjE0zitUD1c=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 233,
  'closedAt': '2017-10-19T19:09:17Z',
  'createdAt': '2017-09-11T18:00:41Z',
  'labels': {'edges': [{'node': {'name': '4.3.14'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjE0zitUD1c=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 234,
  'closedAt': '2017-10-11T22:22:37Z',
  'createdAt': '2017-10-11T20:49:29Z',
  'labels': {'edges': [{'node': {'name': '4.3.14'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4zLjE0zitUD1c=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 235,
  'closedAt': '2017-11-08T20:03:54Z',
  'createdAt': '2017-10-21T22:43:03Z',
  'labels': {'edges': [{'node': {'name': '4.4.0'}},
    {'node': {'name': 'Migration'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC40LjDOLKlQxQ==',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKpTWlncmF0aW9uzitUQ6M='}}}},
{'node': {'number': 236,
  'closedAt': '2018-02-02T16:35:03Z',
  'createdAt': '2017-10-21T22:47:51Z',
  'labels': {'edges': [{'node': {'name': '4.4.1'}},
    {'node': {'name': '4.4.2'}},
    {'node': {'name': '4.4.5'}},
    {'node': {'name': '4.4.7'}},
```

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        {'node': {'name': 'Migration'}}],
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       'hasNextPage': False,
       'endCursor': 'Y3Vyc29yOnYyOpKpTWlncmF0aW9uzitUQ6M='}}}},
{'node': {'number': 238,
   'closedAt': '2017-12-11T23:27:37Z',
   'createdAt': '2017-11-30T22:50:52Z',
   'labels': {'edges': [{'node': {'name': '4.4.3'}},
    {'node': {'name': '4.4.4'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC40LjPOLbW9Eg==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
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   'closedAt': '2018-03-26T21:19:03Z',
   'createdAt': '2017-12-04T18:04:49Z',
   'labels': {'edges': [{'node': {'name': '4.4.14'}},
    {'node': {'name': '4.4.4'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjEOzjSjIkw=',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 240,
   'closedAt': '2018-01-24T17:02:22Z',
   'createdAt': '2018-01-24T16:50:33Z',
   'labels': {'edges': [{'node': {'name': '4.4.6'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC40LjbOMMfAkw==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 241,
   'closedAt': '2018-02-02T21:26:28Z',
   'createdAt': '2018-01-27T13:49:05Z',
   'labels': {'edges': [{'node': {'name': '4.4.8'}},
    {'node': {'name': '4.4.9'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC40LjjOMSra5g==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 242,
   'closedAt': '2018-02-05T18:24:05Z',
   'createdAt': '2018-02-01T14:44:27Z',
   'labels': {'edges': [{'node': {'name': '4.4.9'}},
    {'node': {'name': 'bug'}}],
    'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKlNC40LjnOMWU7mg==',
     'hasNextPage': False,
     'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
```

```
          {'node': {'number': 243,
            'closedAt': '2018-02-08T20:07:18Z',
            'createdAt': '2018-02-05T20:34:50Z',
            'labels': {'edges': [{'node': {'name': '4.4.10'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjEwzjJBlTU=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
          {'node': {'number': 244,
            'closedAt': '2018-02-22T19:49:08Z',
            'createdAt': '2018-02-20T17:53:35Z',
            'labels': {'edges': [{'node': {'name': '4.4.11'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjExzjJmqMk=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
          {'node': {'number': 245,
            'closedAt': '2018-02-23T21:15:58Z',
            'createdAt': '2018-02-23T13:55:28Z',
            'labels': {'edges': [{'node': {'name': '4.4.12'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjEyzjKD-dM=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpHOAa3MmA==',
          'hasNextPage': True,
          'endCursor': 'Y3Vyc29yOnYyOpHOEd1YdA=='}}}}}
```

```python
[9]: data2["data"]["repository"]["closed_issues"]["pageInfo"]
```

```
[9]: {'startCursor': 'Y3Vyc29yOnYyOpHOAa3MmA==',
      'hasNextPage': True,
      'endCursor': 'Y3Vyc29yOnYyOpHOEd1YdA=='}
```

Mais uma página.

```python
[10]: query = query_base %␣
      ↪(data2["data"]["repository"]["closed_issues"]["pageInfo"]['endCursor'], )

      response = requests.post(SITE + "graphql", json={'query': query},␣
      ↪auth=token_auth)
      print(response.status_code)
      data3 = response.json()
      data3
```

```
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```

```
[10]: {'data': {'repository': {'closed_issues': {'totalCount': 241,
          'edges': [{'node': {'number': 246,
            'closedAt': '2018-03-02T20:39:40Z',
            'createdAt': '2018-02-28T13:59:51Z',
            'labels': {'edges': [{'node': {'name': '4.4.13'}},
              {'node': {'name': '4.4.14'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjEzzjSjK4k=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
          {'node': {'number': 248,
            'closedAt': '2018-03-27T19:28:51Z',
            'createdAt': '2018-03-10T13:49:38Z',
            'labels': {'edges': [{'node': {'name': '4.4.14'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE0zjSjIkw=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
          {'node': {'number': 250,
            'closedAt': '2018-03-22T18:06:17Z',
            'createdAt': '2018-03-22T17:43:10Z',
            'labels': {'edges': [{'node': {'name': '4.4.14'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE0zjSjIkw=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
          {'node': {'number': 251,
            'closedAt': '2018-05-08T17:29:19Z',
            'createdAt': '2018-04-04T17:32:30Z',
            'labels': {'edges': [{'node': {'name': '4.4.15'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE1zjV_syU=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
          {'node': {'number': 252,
            'closedAt': '2018-05-08T17:32:19Z',
            'createdAt': '2018-04-04T17:42:45Z',
            'labels': {'edges': [{'node': {'name': '4.4.15'}},
              {'node': {'name': 'bug'}}],
             'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE1zjV_syU=',
              'hasNextPage': False,
              'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
          {'node': {'number': 253,
            'closedAt': '2018-05-08T17:34:52Z',
            'createdAt': '2018-04-04T20:54:55Z',
            'labels': {'edges': [{'node': {'name': '4.4.15'}},
              {'node': {'name': 'bug'}}],
```

'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE1zjV_syU=',
 'hasNextPage': False,
 'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 256,
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  'createdAt': '2018-04-13T19:30:22Z',
  'labels': {'edges': [{'node': {'name': '4.4.17'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE3zjdPsKI=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 257,
  'closedAt': '2018-05-08T17:43:46Z',
  'createdAt': '2018-04-18T18:06:34Z',
  'labels': {'edges': [{'node': {'name': '4.4.17'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE3zjdPsKI=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 258,
  'closedAt': '2018-05-08T17:45:43Z',
  'createdAt': '2018-04-18T21:15:50Z',
  'labels': {'edges': [{'node': {'name': '4.4.17'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE3zjdPsKI=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 259,
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  'createdAt': '2018-04-19T19:14:15Z',
  'labels': {'edges': [{'node': {'name': '4.4.17'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE3zjdPsKI=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 260,
  'closedAt': '2018-05-08T17:49:36Z',
  'createdAt': '2018-04-20T19:53:50Z',
  'labels': {'edges': [{'node': {'name': '4.4.17'}},
   {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE3zjdPsKI=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 261,
  'closedAt': '2018-05-08T17:50:32Z',
  'createdAt': '2018-05-02T15:25:22Z',
  'labels': {'edges': [{'node': {'name': '4.4.17'}},

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            {'node': {'name': 'bug'}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4OLjE3zjdPsKI=',
          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 262,
     'closedAt': '2018-05-08T17:54:30Z',
     'createdAt': '2018-05-02T16:05:14Z',
     'labels': {'edges': [{'node': {'name': '4.4.17'}},
       {'node': {'name': 'bug'}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4OLjE3zjdPsKI=',
          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 264,
     'closedAt': '2018-05-10T18:58:40Z',
     'createdAt': '2018-05-09T12:53:48Z',
     'labels': {'edges': [{'node': {'name': '4.4.18'}},
       {'node': {'name': 'bug'}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4OLjE4zjeMPw4=',
          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 266,
     'closedAt': '2018-08-07T18:29:15Z',
     'createdAt': '2018-08-06T22:28:44Z',
     'labels': {'edges': [{'node': {'name': '4.4.21'}},
       {'node': {'name': 'bug'}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4OLjIxzkfSnOY=',
          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 267,
     'closedAt': '2018-09-06T17:05:33Z',
     'createdAt': '2018-09-06T16:44:59Z',
     'labels': {'edges': [{'node': {'name': '4.4.21'}},
       {'node': {'name': 'bug'}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4OLjIxzkfSnOY=',
          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 268,
     'closedAt': '2019-01-09T16:47:19Z',
     'createdAt': '2018-09-06T17:47:47Z',
     'labels': {'edges': [{'node': {'name': '4.4.21'}},
       {'node': {'name': 'bug'}}],
         'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC4OLjIxzkfSnOY=',
          'hasNextPage': False,
          'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
  {'node': {'number': 270,
     'closedAt': '2018-09-12T18:39:11Z',
     'createdAt': '2018-09-12T18:14:56Z',
```

'labels': {'edges': [{'node': {'name': '4.4.21'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIxzkfSnOY=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 271,
  'closedAt': '2018-09-17T20:14:07Z',
  'createdAt': '2018-09-12T21:49:24Z',
  'labels': {'edges': [{'node': {'name': '4.4.21'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIxzkfSnOY=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 272,
  'closedAt': '2018-09-17T20:39:33Z',
  'createdAt': '2018-09-17T20:17:53Z',
  'labels': {'edges': [{'node': {'name': '4.4.21'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIxzkfSnOY=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 273,
  'closedAt': '2018-10-30T19:41:04Z',
  'createdAt': '2018-10-30T18:45:17Z',
  'labels': {'edges': [{'node': {'name': '4.4.21'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIxzkfSnOY=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 274,
  'closedAt': '2018-11-05T17:17:59Z',
  'createdAt': '2018-11-05T17:04:10Z',
  'labels': {'edges': [{'node': {'name': '4.4.19'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE5zkTUDWc=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 275,
  'closedAt': '2018-12-07T16:47:48Z',
  'createdAt': '2018-11-21T18:32:41Z',
  'labels': {'edges': [{'node': {'name': '4.4.19'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE5zkTUDWc=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 276,
  'closedAt': '2018-12-07T13:07:51Z',

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 'createdAt': '2018-12-07T12:53:58Z',
 'labels': {'edges': [{'node': {'name': '4.4.19'}},
   {'node': {'name': 'bug'}}],
  'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjE5zkTUDWc=',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 277,
 'closedAt': '2018-12-10T19:08:54Z',
 'createdAt': '2018-12-10T18:58:22Z',
 'labels': {'edges': [{'node': {'name': '4.4.20'}},
   {'node': {'name': 'bug'}}],
  'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIwzkUmbNA=',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 278,
 'closedAt': '2018-12-10T19:40:42Z',
 'createdAt': '2018-12-10T19:35:10Z',
 'labels': {'edges': [{'node': {'name': '4.4.20'}},
   {'node': {'name': 'bug'}}],
  'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIwzkUmbNA=',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 279,
 'closedAt': '2019-01-21T20:10:46Z',
 'createdAt': '2019-01-21T19:53:12Z',
 'labels': {'edges': [{'node': {'name': '4.4.21'}},
   {'node': {'name': 'bug'}}],
  'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIxzkfSnOY=',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 280,
 'closedAt': '2019-01-22T13:30:21Z',
 'createdAt': '2019-01-22T13:15:40Z',
 'labels': {'edges': [{'node': {'name': '4.4.21'}},
   {'node': {'name': 'bug'}}],
  'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIxzkfSnOY=',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 281,
 'closedAt': '2019-01-23T14:03:56Z',
 'createdAt': '2019-01-23T13:50:44Z',
 'labels': {'edges': [{'node': {'name': '4.4.24'}},
   {'node': {'name': 'bug'}}],
  'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI0zk3aQp0=',
   'hasNextPage': False,
   'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 282,
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    'closedAt': '2019-01-23T17:59:28Z',
    'createdAt': '2019-01-23T17:39:09Z',
    'labels': {'edges': [{'node': {'name': '4.4.24'}},
      {'node': {'name': 'bug'}}],
     'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI0zk3aQp0=',
      'hasNextPage': False,
      'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 283,
  'closedAt': '2019-01-23T18:48:26Z',
  'createdAt': '2019-01-23T18:38:11Z',
  'labels': {'edges': [{'node': {'name': '4.4.24'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI0zk3aQp0=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 284,
  'closedAt': '2019-01-23T19:22:52Z',
  'createdAt': '2019-01-23T19:18:18Z',
  'labels': {'edges': [{'node': {'name': '4.4.24'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI0zk3aQp0=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 285,
  'closedAt': '2019-01-23T21:03:10Z',
  'createdAt': '2019-01-23T20:55:30Z',
  'labels': {'edges': [{'node': {'name': '4.4.24'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI0zk3aQp0=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 287,
  'closedAt': '2019-02-22T21:17:06Z',
  'createdAt': '2019-02-22T20:55:12Z',
  'labels': {'edges': [{'node': {'name': '4.4.24'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI0zk3aQp0=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 288,
  'closedAt': '2019-03-13T21:24:22Z',
  'createdAt': '2019-03-13T21:18:53Z',
  'labels': {'edges': [{'node': {'name': '4.4.22'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIyzkvnAHE=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},

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{'node': {'number': 290,
  'closedAt': '2019-04-01T21:18:17Z',
  'createdAt': '2019-03-20T13:27:15Z',
  'labels': {'edges': [{'node': {'name': '4.4.23'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjIzzk2tpHA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 293,
  'closedAt': '2019-06-01T00:33:22Z',
  'createdAt': '2019-05-10T19:46:15Z',
  'labels': {'edges': [{'node': {'name': '4.4.25'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI1zlMIc10=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 296,
  'closedAt': '2019-10-21T19:50:13Z',
  'createdAt': '2019-07-01T19:15:32Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 298,
  'closedAt': '2019-07-02T17:50:03Z',
  'createdAt': '2019-07-02T16:54:07Z',
  'labels': {'edges': [{'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 299,
  'closedAt': '2019-08-20T22:36:38Z',
  'createdAt': '2019-08-20T22:27:14Z',
  'labels': {'edges': [{'node': {'name': '4.4.26'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI2zlpaPQA=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}},
{'node': {'number': 300,
  'closedAt': '2019-09-13T16:14:20Z',
  'createdAt': '2019-09-13T16:09:30Z',
  'labels': {'edges': [{'node': {'name': '4.4.27'}},
    {'node': {'name': 'bug'}}],
   'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpKmNC40LjI3zlyrWk4=',
    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpKjYnVnzgAUplA='}}}}],
'pageInfo': {'startCursor': 'Y3Vyc29yOnYyOpHOEfFpzw==',
```

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    'hasNextPage': False,
    'endCursor': 'Y3Vyc29yOnYyOpHOHWjK4g=='}}}}}
```

[11]: ```
data3["data"]["repository"]["closed_issues"]["pageInfo"]
```

[11]: ```
{'startCursor': 'Y3Vyc29yOnYyOpHOEfFpzw==',
 'hasNextPage': False,
 'endCursor': 'Y3Vyc29yOnYyOpHOHWjK4g=='}
```

Foi a última.

1.0.1 Schema

O schema da API v4 pode ser encontrado na documentação:
https://developer.github.com/v4/object/repository/

Além disso, é possível fazer consultas para obter o schema.

[12]: ```python
SITE = "http://localhost:5000/" # ou https://api.github.com

query = """
query {
  __type(name: "Repository") {
    name
    kind
    description
    fields {
      name
      description
    }
  }
}
"""

response = requests.post(SITE + "graphql", json={'query': query},
 ↪auth=token_auth)
print(response.status_code)
response.json()
```

```
200
```

[12]: ```
{'data': {'__type': {'name': 'Repository',
   'kind': 'OBJECT',
   'description': 'A repository contains the content for a project.',
   'fields': [{'name': 'assignableUsers',
     'description': 'A list of users that can be assigned to issues in this
repository.'},
```

```
    {'name': 'branchProtectionRules',
     'description': 'A list of branch protection rules for this repository.'},
    {'name': 'codeOfConduct',
     'description': 'Returns the code of conduct for this repository'},
    {'name': 'collaborators',
     'description': 'A list of collaborators associated with the repository.'},
    {'name': 'commitComments',
     'description': 'A list of commit comments associated with the
repository.'},
    {'name': 'createdAt',
     'description': 'Identifies the date and time when the object was
created.'},
    {'name': 'databaseId',
     'description': 'Identifies the primary key from the database.'},
    {'name': 'defaultBranchRef',
     'description': "The Ref associated with the repository's default branch."},
    {'name': 'deployKeys',
     'description': 'A list of deploy keys that are on this repository.'},
    {'name': 'deployments',
     'description': 'Deployments associated with the repository'},
    {'name': 'description',
     'description': 'The description of the repository.'},
    {'name': 'descriptionHTML',
     'description': 'The description of the repository rendered to HTML.'},
    {'name': 'diskUsage',
     'description': 'The number of kilobytes this repository occupies on
disk.'},
    {'name': 'forkCount',
     'description': 'Returns how many forks there are of this repository in the
whole network.'},
    {'name': 'forks', 'description': 'A list of direct forked repositories.'},
    {'name': 'hasIssuesEnabled',
     'description': 'Indicates if the repository has issues feature enabled.'},
    {'name': 'hasWikiEnabled',
     'description': 'Indicates if the repository has wiki feature enabled.'},
    {'name': 'homepageUrl', 'description': "The repository's URL."},
    {'name': 'id', 'description': None},
    {'name': 'isArchived',
     'description': 'Indicates if the repository is unmaintained.'},
    {'name': 'isDisabled',
     'description': 'Returns whether or not this repository disabled.'},
    {'name': 'isFork',
     'description': 'Identifies if the repository is a fork.'},
    {'name': 'isLocked',
     'description': 'Indicates if the repository has been locked or not.'},
    {'name': 'isMirror',
     'description': 'Identifies if the repository is a mirror.'},
```

```
    {'name': 'isPrivate',
     'description': 'Identifies if the repository is private.'},
    {'name': 'isTemplate',
     'description': 'Identifies if the repository is a template that can be used
to generate new repositories.'},
    {'name': 'issue',
     'description': 'Returns a single issue from the current repository by
number.'},
    {'name': 'issueOrPullRequest',
     'description': 'Returns a single issue-like object from the current
repository by number.'},
    {'name': 'issues',
     'description': 'A list of issues that have been opened in the
repository.'},
    {'name': 'label', 'description': 'Returns a single label by name'},
    {'name': 'labels',
     'description': 'A list of labels associated with the repository.'},
    {'name': 'languages',
     'description': 'A list containing a breakdown of the language composition
of the repository.'},
    {'name': 'licenseInfo',
     'description': 'The license associated with the repository'},
    {'name': 'lockReason',
     'description': 'The reason the repository has been locked.'},
    {'name': 'mentionableUsers',
     'description': 'A list of Users that can be mentioned in the context of the
repository.'},
    {'name': 'mergeCommitAllowed',
     'description': 'Whether or not PRs are merged with a merge commit on this
repository.'},
    {'name': 'milestone',
     'description': 'Returns a single milestone from the current repository by
number.'},
    {'name': 'milestones',
     'description': 'A list of milestones associated with the repository.'},
    {'name': 'mirrorUrl',
     'description': "The repository's original mirror URL."},
    {'name': 'name', 'description': 'The name of the repository.'},
    {'name': 'nameWithOwner',
     'description': "The repository's name with owner."},
    {'name': 'object', 'description': 'A Git object in the repository'},
    {'name': 'openGraphImageUrl',
     'description': 'The image used to represent this repository in Open Graph
data.'},
    {'name': 'owner', 'description': 'The User owner of the repository.'},
    {'name': 'parent',
     'description': 'The repository parent, if this is a fork.'},
```

```
{'name': 'primaryLanguage',
 'description': "The primary language of the repository's code."},
{'name': 'project', 'description': 'Find project by number.'},
{'name': 'projects', 'description': 'A list of projects under the owner.'},
{'name': 'projectsResourcePath',
 'description': "The HTTP path listing the repository's projects"},
{'name': 'projectsUrl',
 'description': "The HTTP URL listing the repository's projects"},
{'name': 'pullRequest',
 'description': 'Returns a single pull request from the current repository
by number.'},
{'name': 'pullRequests',
 'description': 'A list of pull requests that have been opened in the
repository.'},
{'name': 'pushedAt',
 'description': 'Identifies when the repository was last pushed to.'},
{'name': 'rebaseMergeAllowed',
 'description': 'Whether or not rebase-merging is enabled on this
repository.'},
{'name': 'ref', 'description': 'Fetch a given ref from the repository'},
{'name': 'refs',
 'description': 'Fetch a list of refs from the repository'},
{'name': 'registryPackages',
 'description': 'A list of registry packages under the owner.'},
{'name': 'registryPackagesForQuery',
 'description': 'A list of registry packages for a particular search
query.'},
{'name': 'release',
 'description': 'Lookup a single release given various criteria.'},
{'name': 'releases',
 'description': 'List of releases which are dependent on this repository.'},
{'name': 'repositoryTopics',
 'description': 'A list of applied repository-topic associations for this
repository.'},
{'name': 'resourcePath',
 'description': 'The HTTP path for this repository'},
{'name': 'shortDescriptionHTML',
 'description': 'A description of the repository, rendered to HTML without
any links in it.'},
{'name': 'squashMergeAllowed',
 'description': 'Whether or not squash-merging is enabled on this
repository.'},
{'name': 'sshUrl', 'description': 'The SSH URL to clone this repository'},
{'name': 'stargazers',
 'description': 'A list of users who have starred this starrable.'},
{'name': 'templateRepository',
 'description': 'The repository from which this repository was generated, if
```

any.'},
    {'name': 'updatedAt',
     'description': 'Identifies the date and time when the object was last
updated.'},
    {'name': 'url', 'description': 'The HTTP URL for this repository'},
    {'name': 'usesCustomOpenGraphImage',
     'description': "Whether this repository has a custom image to use with Open
Graph as opposed to being represented by the owner's avatar."},
    {'name': 'viewerCanAdminister',
     'description': 'Indicates whether the viewer has admin permissions on this
repository.'},
    {'name': 'viewerCanCreateProjects',
     'description': 'Can the current viewer create new projects on this
owner.'},
    {'name': 'viewerCanSubscribe',
     'description': 'Check if the viewer is able to change their subscription
status for the repository.'},
    {'name': 'viewerCanUpdateTopics',
     'description': 'Indicates whether the viewer can update the topics of this
repository.'},
    {'name': 'viewerHasStarred',
     'description': 'Returns a boolean indicating whether the viewing user has
starred this starrable.'},
    {'name': 'viewerPermission',
     'description': 'The users permission level on the repository. Will return
null if authenticated as an GitHub App.'},
    {'name': 'viewerSubscription',
     'description': 'Identifies if the viewer is watching, not watching, or
ignoring the subscribable entity.'},
    {'name': 'vulnerabilityAlerts',
     'description': 'A list of vulnerability alerts that are on this
repository.'},
    {'name': 'watchers',
     'description': 'A list of users watching the repository.'}]}}}