Launch Sites Locations Analysis with Folium

Estimated time needed: 40 minutes

The launch success rate may depend on many factors such as payload mass, orbit type, etc. It may also depend on the location and proximity to a launch site, i.e., the initial position of rocket trajectories. Finding a optimal location for building a launch site certainly requires many factors to be taken into consideration. In this lab you will perform more map plotting and visualization by using Folium.

In the previous exploratory data analysis lab, you have visualized the launch record data using `Matplotlib` and `Seaborn`, and suppose you are working in related domain, the results are not clear enough. In this lab, you will use geospatial map to visualize more complex data first before jumping into further analysis.

Objectives

This lab contains following tasks:

- **Task 1** Mark all launch sites on a map
- **Task 2** Mark the success/failed launches for each site on the map
- **Task 3** Calculate the distances between a launch site to its proximities

After completing the above tasks, you should be able to find some geographical patterns about launch sites.

Install folium package if it is not already installed.

```
!pip install folium
```

```
Collecting folium
  Downloading folium-0.12.1.tar.gz (98 kB)
     |____________________________________| 98 kB 1.1 MB/s
    Installing build dependencies ... done
    Getting requirements to build wheel ... done
    Preparing metadata (pyproject.toml) ... done
Collecting jinja2>=2.9
  Downloading Jinja2-3.0.3.tar.gz (1.1 MB)
     |____________________________________| 1.1 MB 1.1 MB/s
    Installing build dependencies ... done
    Getting requirements to build wheel ... done
    Preparing metadata (pyproject.toml) ... done
Collecting branca>=0.5.0
  Downloading branca-0.5.0.tar.gz (5.1 kB)
    Installing build dependencies ... done
    Getting requirements to build wheel ... done
    Preparing metadata (pyproject.toml) ... done
Requirement already satisfied: requests in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from folium) (2.28.1)
Collecting MarkupSafe>=2.0.0rc2
  Downloading MarkupSafe-2.0.1-cp37-cp37m-manylinux_2_5_x86_64.manylinux_1_12_x86_64.manylinux_2_17_x86_64.manylinux2014_x86_64.whl (30 kB)
Requirement already satisfied: idna<4, >=2.5 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (3.4)
Requirement already satisfied: urllib3<1.26, >=1.21.1 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (1.25.11)
Requirement already satisfied: charset-normalizer<2.1.1, >=2.0.9 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (2.1.1)
Requirement already satisfied: certifi>=2017.4.17 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (2022.12.7)
Requirement already satisfied: typing_extensions; python_version < "3.8" in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (4.1.1)
Requirement already satisfied: zipp; python_version < "3.8" in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (3.15.0)
Building wheels for collected packages: folium, jinja2, branca, MarkupSafe
  Building wheel for folium (pyproject.toml) ... done
  Building wheel for jinja2 (pyproject.toml) ... done
  Building wheel for branca (pyproject.toml) ... done
  Building wheel for MarkupSafe (setup.cfg) ... done
  Stored in directory: /tmp/pip-ephem-wheel-cache-ldpqq_ua/wheels/1a/67/4a/ad4bb2cb7a0383ed8f0ba868770d1bf3c8d4512f5dc57dc625
  Stored in directory: /tmp/pip-ephem-wheel-cache-ldpqq_ua/wheels/93/1a/65/03b1a8ceb9a7f7d96bf0f8ab0b6d4b5f2a3ef43a1c2ba9a1f1
  Stored in directory: /tmp/pip-ephem-wheel-cache-ldpqq_ua/wheels/c1/99/a0/f8f1a57f6d291d7f0d52a7fc6a8f9b9780c8c63e0a9b5fb94a
  Stored in directory: /tmp/pip-ephem-wheel-cache-ldpqq_ua/wheels/2b/1d/3f/05a5a0a0a2c3ba8f2d0ffb6a4a3b1f2a0f0f0f0f0f0f0f0f0
Successfully built folium jinja2 branca MarkupSafe
Installing collected packages: MarkupSafe, jinja2, branca, folium
Successfully installed branca-0.5.0 folium-0.12.1 jinja2-3.0.3 MarkupSafe-2.0.1
```

```
import folium
import pandas as pd
```

```
Solving environment: \
Found conflicts!
  tensorflow-base [version='2.11.0|2.11.0rc0|2.11.0rc1'] requires numpy[version='>=1.22.3,<2.0a0'], but numpy=1.21.6 is installed.
  conda-build [version='>=3.18.9'] requires conda-index, but none of the providers can be installed.

Package plotly_express conflicts for:
python=3.7.* -> numpy[version='>=1.14.5,<1.17.0a0|>=1.17.0,<1.17.1a0|>=1.17.2,<1.17.3a0|>=1.17.4,<1.17.5a0|>=1.18.1,<1.18.2a0|>=1.18.5,<1.18.6a0|>=1.19.2,<1.19.3a0|>=1.19.5,<1.19.6a0|>=1.20.1,<1.20.2a0|>=1.20.3,<1.20.4a0|>=1.21.2,<1.21.3a0|>=1.21.5,<1.21.6a0|>=1.22.3,<1.22.4a0|>=1.23.1,<1.23.2a0|>=1.23.4,<1.23.5a0|>=1.24.3,<1.24.4a0|>=1.25.2,<1.25.3a0|>=1.26.0,<1.26.1a0|>=1.26.3,<1.26.4a0|>=1.26.4,<1.26.5a0|>=1.26.5,<1.26.6a0|>=1.26.6,<1.26.7a0|>=1.26.7,<1.26.8a0|>=1.26.8,<1.26.9a0|>=1.26.9,<1.26.10a0|>=1.26.10,<1.26.11a0|>=1.26.11,<1.26.12a0|>=1.26.12,<1.26.13a0|>=1.26.13,<1.26.14a0|>=1.26.14,<1.26.15a0|>=1.26.15,<1.26.16a0|>=1.26.16,<1.26.17a0|>=1.26.17,<1.26.18a0|>=1.26.18,<1.26.19a0|>=1.26.19,<1.26.20a0|>=1.26.20,<1.26.21a0|>=1.26.21,<1.26.22a0|>=1.26.22,<1.26.23a0|>=1.26.23,<1.26.24a0|>=1.26.24,<1.26.25a0|>=1.26.25,<1.26.26a0|>=1.26.26,<1.26.27a0|>=1.26.27,<1.26.28a0|>=1.26.28,<1.26.29a0|>=1.26.29,<1.26.30a0|>=1.26.30,<1.26.31a0|>=1.26.31,<1.26.32a0|>=1.26.32,<1.26.33a0|>=1.26.33,<1.26.34a0|>=1.26.34,<1.26.35a0|>=1.26.35,<1.26.36a0|>=1.26.36,<1.26.37a0|>=1.26.37,<1.26.38a0|>=1.26.38,<1.26.39a0|>=1.26.39,<1.26.40a0|>=1.26.40,<1.26.41a0|>=1.26.41,<1.26.42a0|>=1.26.42,<1.26.43a0|>=1.26.43,<1.26.44a0|>=1.26.44,<1.26.45a0|>=1.26.45,<1.26.46a0|>=1.26.46,<1.26.47a0|>=1.26.47,<1.26.48a0|>=1.26.48,<1.26.49a0|>=1.26.49,<1.26.50a0|>=1.26.50,<1.26.51a0|>=1.26.51,<1.26.52a0|>=1.26.52,<1.26.53a0|>=1.26.53,<1.26.54a0|>=1.26.54,<1.26.55a0|>=1.26.55,<1.26.56a0|>=1.26.56,<1.26.57a0|>=1.26.57,<1.26.58a0|>=1.26.58,<1.26.59a0|>=1.26.59,<1.26.60a0|>=1.26.60,<1.26.61a0|>=1.26.61,<1.26.62a0|>=1.26.62,<1.26.63a0|>=1.26.63,<1.26.64a0|>=1.26.64,<1.26.65a0|>=1.26.65,<1.26.66a0|>=1.26.66,<1.26.67a0|>=1.26.67,<1.26.68a0|>=1.26.68,<1.26.69a0|>=1.26.69,<1.26.70a0|>=1.26.70,<1.26.71a0|>=1.26.71,<1.26.72a0|>=1.26.72,<1.26.73a0|>=1.26.73,<1.26.74a0|>=1.26.74,<1.26.75a0|>=1.26.75,<1.26.76a0|>=1.26.76,<1.26.77a0|>=1.26.77,<1.26.78a0|>=1.26.78,<1.26.79a0|>=1.26.79,<1.26.80a0|>=1.26.80,<1.26.81a0|>=1.26.81,<1.26.82a0|>=1.26.82,<1.26.83a0|>=1.26.83,<1.26.84a0|>=1.26.84,<1.26.85a0|>=1.26.85,<1.26.86a0|>=1.26.86,<1.26.87a0|>=1.26.87,<1.26.88a0|>=1.26.88,<1.26.89a0|>=1.26.89,<1.26.90a0|>=1.26.90,<1.26.91a0|>=1.26.91,<1.26.92a0|>=1.26.92,<1.26.93a0|>=1.26.93,<1.26.94a0|>=1.26.94,<1.26.95a0|>=1.26.95,<1.26.96a0|>=1.26.96,<1.26.97a0|>=1.26.97,<1.26.98a0|>=1.26.98,<1.26.99a0|>=1.26.99,<1.27.0a0|>=1.27.0,<1.27.1a0|>=1.27.1,<1.27.2a0|>=1.27.2,<1.27.3a0|>=1.27.3,<1.27.4a0|>=1.27.4,<1.27.5a0|>=1.27.5,<1.27.6a0|>=1.27.6,<1.27.7a0|>=1.27.7,<1.27.8a0|>=1.27.8,<1.27.9a0|>=1.27.9,<1.27.10a0|>=1.27.10,<1.27.11a0|>=1.27.11,<1.27.12a0|>=1.27.12,<1.27.13a0|>=1.27.13,<1.27.14a0|>=1.27.14,<1.27.15a0|>=1.27.15,<1.27.16a0|>=1.27.16,<1.27.17a0|>=1.27.17,<1.27.18a0|>=1.27.18,<1.27.19a0|>=1.27.19,<1.27.20a0|>=1.27.20,<1.27.21a0|>=1.27.21,<1.27.22a0|>=1.27.22,<1.27.23a0|>=1.27.23,<1.27.24a0|>=1.27.24,<1.27.25a0|>=1.27.25,<1.27.26a0|>=1.27.26,<1.27.27a0|>=1.27.27,<1.27.28a0|>=1.27.28,<1.27.29a0|>=1.27.29,<1.27.30a0|>=1.27.30,<1.27.31a0|>=1.27.31,<1.27.32a0|>=1.27.32,<1.27.33a0|>=1.27.33,<1.27.34a0|>=1.27.34,<1.27.35a0|>=1.27.35,<1.27.36a0|>=1.27.36,<1.27.37a0|>=1.27.37,<1.27.38a0|>=1.27.38,<1.27.39a0|>=1.27.39,<1.27.40a0|>=1.27.40,<1.27.41a0|>=1.27.41,<1.27.42a0|>=1.27.42,<1.27.43a0|>=1.27.43,<1.27.44a0|>=1.27.44,<1.27.45a0|>=1.27.45,<1.27.46a0|>=1.27.46,<1.27.47a0|>=1.27.47,<1.27.48a0|>=1.27.48,<1.27.49a0|>=1.27.49,<1.27.50a0|>=1.27.50,<1.27.51a0|>=1.27.51,<1.27.52a0|>=1.27.52,<1.27.53a0|>=1.27.53,<1.27.54a0|>=1.27.54,<1.27.55a0|>=1.27.55,<1.27.56a0|>=1.27.56,<1.27.57a0|>=1.27.57,<1.27.58a0|>=1.27.58,<1.27.59a0|>=1.27.59,<1.27.60a0|>=1.27.60,<1.27.61a0|>=1.27.61,<1.27.62a0|>=1.27.62,<1.27.63a0|>=1.27.63,<1.27.64a0|>=1.27.64,<1.27.65a0|>=1.27.65,<1.27.66a0|>=1.27.66,<1.27.67a0|>=1.27.67,<1.27.68a0|>=1.27.68,<1.27.69a0|>=1.27.69,<1.27.70a0|>=1.27.70,<1.27.71a0|>=1.27.71,<1.27.72a0|>=1.27.72,<1.27.73a0|>=1.27.73,<1.27.74a0|>=1.27.74,<1.27.75a0|>=1.27.75,<1.27.76a0|>=1.27.76,<1.27.77a0|>=1.27.77,<1.27.78a0|>=1.27.78,<1.27.79a0|>=1.27.79,<1.27.80a0|>=1.27.80,<1.27.81a0|>=1.27.81,<1.27.82a0|>=1.27.82,<1.27.83a0|>=1.27.83,<1.27.84a0|>=1.27.84,<1.27.85a0|>=1.27.85,<1.27.86a0|>=1.27.86,<1.27.87a0|>=1.27.87,<1.27.88a0|>=1.27.88,<1.27.89a0|>=1.27.89,<1.27.90a0|>=1.27.90,<1.27.91a0|>=1.27.91,<1.27.92a0|>=1.27.92,<1.27.93a0|>=1.27.93,<1.27.94a0|>=1.27.94,<1.27.95a0|>=1.27.95,<1.27.96a0|>=1.27.96,<1.27.97a0|>=1.27.97,<1.27.98a0|>=1.27.98,<1.27.99a0|>=1.27.99,<1.28.0a0|>=1.28.0,<1.28.1a0|>=1.28.1,<1.28.2a0|>=1.28.2,<1.28.3a0|>=1.28.3,<1.28.4a0|>=1.28.4,<1.28.5a0|>=1.28.5,<1.28.6a0|>=1.28.6,<1.28.7a0|>=1.28.7,<1.28.8a0|>=1.28.8,<1.28.9a0|>=1.28.9,<1.28.10a0|>=1.28.10,<1.28.11a0|>=1.28.11,<1.28.12a0|>=1.28.12,<1.28.13a0|>=1.28.13,<1.28.14a0|>=1.28.14,<1.28.15a0|>=1.28.15,<1.28.16a0|>=1.28.16,<1.28.17a0|>=1.28.17,<1.28.18a0|>=1.28.18,<1.28.19a0|>=1.28.19,<1.28.20a0|>=1.28.20,<1.28.21a0|>=1.28.21,<1.28.22a0|>=1.28.22,<1.28.23a0|>=1.28.23,<1.28.24a0|>=1.28.24,<1.28.25a0|>=1.28.25,<1.28.26a0|>=1.28.26,<1.28.27a0|>=1.28.27,<1.28.28a0|>=1.28.28,<1.28.29a0|>=1.28.29,<1.28.30a0|>=1.28.30,<1.28.31a0|>=1.28.31,<1.28.32a0|>=1.28.32,<1.28.33a0|>=1.28.33,<1.28.34a0|>=1.28.34,<1.28.35a0|>=1.28.35,<1.28.36a0|>=1.28.36,<1.28.37a0|>=1.28.37,<1.28.38a0|>=1.28.38,<1.28.39a0|>=1.28.39,<1.28.40a0|>=1.28.40,<1.28.41a0|>=1.28.41,<1.28.42a0|>=1.28.42,<1.28.43a0|>=1.28.43,<1.28.44a0|>=1.28.44,<1.28.45a0|>=1.28.45,<1.28.46a0|>=1.28.46,<1.28.47a0|>=1.28.47,<1.28.48a0|>=1.28.48,<1.28.49a0|>=1.28.49,<1.28.50a0|>=1.28.50,<1.28.51a0|>=1.28.51,<1.28.52a0|>=1.28.52,<1.28.53a0|>=1.28.53,<1.28.54a0|>=1.28.54,<1.28.55a0|>=1.28.55,<1.28.56a0|>=1.28.56,<1.28.57a0|>=1.28.57,<1.28.58a0|>=1.28.58,<1.28.59a0|>=1.28.59,<1.28.60a0|>=1.28.60,<1.28.61a0|>=1.28.61,<1.28.62a0|>=1.28.62,<1.28.63a0|>=1.28.63,<1.28.64a0|>=1.28.64,<1.28.65a0|>=1.28.65,<1.28.66a0|>=1.28.66,<1.28.67a0|>=1.28.67,<1.28.68a0|>=1.28.68,<1.28.69a0|>=1.28.69,<1.28.70a0|>=1.28.70,<1.28.71a0|>=1.28.71,<1.28.72a0|>=1.28.72,<1.28.73a0|>=1.28.73,<1.28.74a0|>=1.28.74,<1.28.75a0|>=1.28.75,<1.28.76a0|>=1.28.76,<1.28.77a0|>=1.28.77,<1.28.78a0|>=1.28.78,<1.28.79a0|>=1.28.79,<1.28.80a0|>=1.28.80,<1.28.81a0|>=1.28.81,<1.28.82a0|>=1.28.82,<1.28.83a0|>=1.28.83,<1.28.84a0|>=1.28.84,<1.28.85a0|>=1.28.85,<1.28.86a0|>=1.28.86,<1.28.87a0|>=1.28.87,<1.28.88a0|>=1.28.88,<1.28.89a0|>=1.28.89,<1.28.90a0|>=1.28.90,<1.28.91a0|>=1.28.91,<1.28.92a0|>=1.28.92,<1.28.93a0|>=1.28.93,<1.28.94a0|>=1.28.94,<1.28.95a0|>=1.28.95,<1.28.96a0|>=1.28.96,<1.28.97a0|>=1.28.97,<1.28.98a0|>=1.28.98,<1.28.99a0|>=1.28.99,<1.29.0a0|>=1.29.0,<1.29.1a0|>=1.29.1,<1.29.2a0|>=1.29.2,<1.29.3a0|>=1.29.3,<1.29.4a0|>=1.29.4,<1.29.5a0|>=1.29.5,<1.29.6a0|>=1.29.6,<1.29.7a0|>=1.29.7,<1.29.8a0|>=1.29.8,<1.29.9a0|>=1.29.9,<1.29.10a0|>=1.29.10,<1.29.11a0|>=1.29.11,<1.29.12a0|>=1.29.12,<1.29.13a0|>=1.29.13,<1.29.14a0|>=1.29.14,<1.29.15a0|>=1.29.15,<1.29.16a0|>=1.29.16,<1.29.17a0|>=1.29.17,<1.29.18a0|>=1.29.18,<1.29.19a0|>=1.29.19,<1.29.20a0|>=1.29.20,<1.29.21a0|>=1.29.21,<1.29.22a0|>=1.29.22,<1.29.23a0|>=1.29.23,<1.29.24a0|>=1.29.24,<1.29.25a0|>=1.29.25,<1.29.26a0|>=1.29.26,<1.29.27a0|>=1.29.27,<1.29.28a0|>=1.29.28,<1.29.29a0|>=1.29.29,<1.29.30a0|>=1.29.30,<1.29.31a0|>=1.29.31,<1.29.32a0|>=1.29.32,<1.29.33a0|>=1.29.33,<1.29.34a0|>=1.29.34,<1.29.35a0|>=1.29.35,<1.29.36a0|>=1.29.36,<1.29.37a0|>=1.29.37,<1.29.38a0|>=1.29.38,<1.29.39a0|>=1.29.39,<1.29.40a0|>=1.29.40,<1.29.41a0|>=1.29.41,<1.29.42a0|>=1.29.42,<1.29.43a0|>=1.29.43,<1.29.44a0|>=1.29.44,<1.29.45a0|>=1.29.45,<1.29.46a0|>=1.29.46,<1.29.47a0|>=1.29.47,<1.29.48a0|>=1.29.48,<1.29.49a0|>=1.29.49,<1.29.50a0|>=1.29.50,<1.29.51a0|>=1.29.51,<1.29.52a0|>=1.29.52,<1.29.53a0|>=1.29.53,<1.29.54a0|>=1.29.54,<1.29.55a0|>=1.29.55,<1.29.56a0|>=1.29.56,<1.29.57a0|>=1.29.57,<1.29.58a0|>=1.29.58,<1.29.59a0|>=1.29.59,<1.29.60a0|>=1.29.60,<1.29.61a0|>=1.29.61,<1.29.62a0|>=1.29.62,<1.29.63a0|>=1.29.63,<1.29.64a0|>=1.29.64,<1.29.65a0|>=1.29.65,<1.29.66a0|>=1.29.66,<1.29.67a0|>=1.29.67,<1.29.68a0|>=1.29.68,<1.29.69a0|>=1.29.69,<1.29.70a0|>=1.29.70,<1.29.71a0|>=1.29.71,<1.29.72a0|>=1.29.72,<1.29.73a0|>=1.29.73,<1.29.74a0|>=1.29.74,<1.29.75a0|>=1.29.75,<1.29.76a0|>=1.29.76,<1.29.77a0|>=1.29.77,<1.29.78a0|>=1.29.78,<1.29.79a0|>=1.29.79,<1.29.80a0|>=1.29.80,<1.29.81a0|>=1.29.81,<1.29.82a0|>=1.29.82,<1.29.83a0|>=1.29.83,<1.29.84a0|>=1.29.84,<1.29.85a0|>=1.29.85,<1.29.86a0|>=1.29.86,<1.29.87a0|>=1.29.87,<1.29.88a0|>=1.29.88,<1.29.89a0|>=1.29.89,<1.29.90a0|>=1.29.90,<1.29.91a0|>=1.29.91,<1.29.92a0|>=1.29.92,<1.29.93a0|>=1.29.93,<1.29.94a0|>=1.29.94,<1.29.95a0|>=1.29.95,<1.29.96a0|>=1.29.96,<1.29.97a0|>=1.29.97,<1.29.98a0|>=1.29.98,<1.29.99a0|>=1.29.99,<1.30.0a0|>=1.30.0,<1.30.1a0|>=1.30.1,<1.30.2a0|>=1.30.2,<1.30.3a0|>=1.30.3,<1.30.4a0|>=1.30.4,<1.30.5a0|>=1.30.5,<1.30.6a0|>=1.30.6,<1.30.7a0|>=1.30.7,<1.30.8a0|>=1.30.8,<1.30.9a0|>=1.30.9,<1.30.10a0|>=1.30.10,<1.30.11a0|>=1.30.11,<1.30.12a0|>=1.30.12,<1.30.13a0|>=1.30.13,<1.30.14a0|>=1.30.14,<1.30.15a0|>=1.30.15,<1.30.16a0|>=1.30.16,<1.30.17a0|>=1.30.17,<1.30.18a0|>=1.30.18,<1.30.19a0|>=1.30.19,<1.30.20a0|>=1.30.20,<1.30.21a0|>=1.30.21,<1.30.22a0|>=1.30.22,<1.30.23a0|>=1.30.23,<1.30.24a0|>=1.30.24,<1.30.25a0|>=1.30.25,<1.30.26a0|>=1.30.26,<1.30.27a0|>=1.30.27,<1.30.28a0|>=1.30.28,<1.30.29a0|>=1.30.29,<1.30.30a0|>=1.30.30,<1.30.31a0|>=1.30.31,<1.30.32a0|>=1.30.32,<1.30.33a0|>=1.30.33,<1.30.34a0|>=1.30.34,<1.30.35a0|>=1.30.35,<1.30.36a0|>=1.30.36,<1.30.37a0|>=1.30.37,<1.30.38a0|>=1.30.38,<1.30.39a0|>=1.30.39,<1.30.40a0|>=1.30.40,<1.30.41a0|>=1.30.41,<1.30.42a0|>=1.30.42,<1.30.43a0|>=1.30.43,<1.30.44a0|>=1.30.44,<1.30.45a0|>=1.30.45,<1.30.46a0|>=1.30.46,<1.30.47a0|>=1.30.47,<1.30.48a0|>=1.30.48,<1.30.49a0|>=1.30.49,<1.30.50a0|>=1.30.50,<1.30.51a0|>=1.30.51,<1.30.52a0|>=1.30.52,<1.30.53a0|>=1.30.53,<1.30.54a0|>=1.30.54,<1.30.55a0|>=1.30.55,<1.30.56a0|>=1.30.56,<1.30.57a0|>=1.30.57,<1.30.58a0|>=1.30.58,<1.30.59a0|>=1.30.59,<1.30.60a0|>=1.30.60,<1.30.61a0|>=1.30.61,<1.30.62a0|>=1.30.62,<1.30.63a0|>=1.30.63,<1.30.64a0|>=1.30.64,<1.30.65a0|>=1.30.65,<1.30.66a0|>=1.30.66,<1.30.67a0|>=1.30.67,<1.30.68a0|>=1.30.68,<1.30.69a0|>=1.30.69,<1.30.70a0|>=1.30.70,<1.30.71a0|>=1.30.71,<1.30.72a0|>=1.30.72,<1.30.73a0|>=1.30.73,<1.30.74a0|>=1.30.74,<1.30.75a0|>=1.30.75,<1.30.76a0|>=1.30.76,<1.30.77a0|>=1.30.77,<1.30.78a0|>=1.30.78,<1.30.79a0|>=1.30.79,<1.30.80a0|>=1.30.80,<1.30.81a0|>=1.30.81,<1.30.82a0|>=1.30.82,<1.30.83a0|>=1.30.83,<1.30.84a0|>=1.30.84,<1.30.85a0|>=1.30.85,<1.30.86a0|>=1.30.86,<1.30.87a0|>=1.30.87,<1.30.88a0|>=1.30.88,<1.30.89a0|>=1.30.89,<1.30.90a0|>=1.30.90,<1.30.91a0|>=1.30.91,<1.30.92a0|>=1.30.92,<1.30.93a0|>=1.30.93,<1.30.94a0|>=1.30.94,<1.30.95a0|>=1.30.95,<1.30.96a0|>=1.30.96,<1.30.97a0|>=1.30.97,<1.30.98a0|>=1.30.98,<1.30.99a0|>=1.30.99,<1.31.0a0|>=1.31.0,<1.31.1a0|>=1.31.1,<1.31.2a0|>=1.31.2,<1.31.3a0|>=1.31.3,<1.31.4a0|>=1.31.4,<1.31.5a0|>=1.31.5,<1.31.6a0|>=1.31.6,<1.31.7a0|>=1.31.7,<1.31.8a0|>=1.31.8,<1.31.9a0|>=1.31.9,<1.31.10a0|>=1.31.10,<1.31.11a0|>=1.31.11,<1.31.12a0|>=1.31.12,<1.31.13a0|>=1.31.13,<1.31.14a0|>=1.31.14,<1.31.15a0|>=1.31.15,<1.31.16a0|>=1.31.16,<1.31.17a0|>=1.31.17,<1.31.18a0|>=1.31.18,<1.31.19a0|>=1.31.19,<1.31.20a0|>=1.31.20,<1.31.21a0|>=1.31.21,<1.31.22a0|>=1.31.22,<1.31.23a0|>=1.31.23,<1.31.24a0|>=1.31.24,<1.31.25a0|>=1.31.25,<1.31.26a0|>=1.31.26,<1.31.27a0|>=1.31.27,<1.31.28a0|>=1.31.28,<1.31.29a0|>=1.31.29,<1.31.30a0|>=1.31.30,<1.31.31a0|>=1.31.31,<1.31.32a0|>=1.31.32,<1.31.33a0|>=1.31.33,<1.31.34a0|>=1.31.34,<1.31.35a0|>=1.31.35,<1.31.36a0|>=1.31.36,<1.31.37a0|>=1.31.37,<1.31.38a0|>=1.31.38,<1.31.39a0|>=1.31.39,<1.31.40a0|>=1.31.40,<1.31.41a0|>=1.31.41,<1.31.42a0|>=1.31.42,<1.31.43a0|>=1.31.43,<1.31.44a0|>=1.31.44,<1.31.45a0|>=1.31.45,<1.31.46a0|>=1.31.46,<1.31.47a0|>=1.31.47,<1.31.48a0|>=1.31.48,<1.31.49a0|>=1.31.49,<1.31.50a0|>=1.31.50,<1.31.51a0|>=1.31.51,<1.31.52a0|>=1.31.52,<1.31.53a0|>=1.31.53,<1.31.54a0|>=1.31.54,<1.31.55a0|>=1.31.55,<1.31.56a0|>=1.31.56,<1.31.57a0|>=1.31.57,<1.31.58a0|>=1.31.58,<1.31.59a0|>=1.31.59,<1.31.60a0|>=1.31.60,<1.31.61a0|>=1.31.61,<1.31.62a0|>=1.31.62,<1.31.63a0|>=1.31.63,<1.31.64a0|>=1.31.64,<1.31.65a0|>=1.31.65,<1.31.66a0|>=1.31.66,<1.31.67a0|>=1.31.67,<1.31.68a0|>=1.31.68,<1.31.69a0|>=1.31.69,<1.31.70a0|>=1.31.70,<1.31.71a0|>=1.31.71,<1.31.72a0|>=1.31.72,<1.31.73a0|>=1.31.73,<1.31.74a0|>=1.31.74,<1.31.75a0|>=1.31.75,<1.31.76a0|>=1.31.76,<1.31.77a0|>=1.31.77,<1.31.78a0|>=1.31.78,<1.31.79a0|>=1.31.79,<1.31.80a0|>=1.31.80,<1.31.81a0|>=1.31.81,<1.31.82a0|>=1.31.82,<1.31.83a0|>=1.31.83,<1.31.84a0|>=1.31.84,<1.31.85a0|>=1.31.85,<1.31.86a0|>=1.31.86,<1.31.87a0|>=1.31.87,<1.31.88a0|>=1.31.88,<1.31.89a0|>=1.31.89,<1.31.90a0|>=1.31.90,<1.31.91a0|>=1.31.91,<1.31.92a0|>=1.31.92,<1.31.93a0|>=1.31.93,<1.31.94a0|>=1.31.94,<1.31.95a0|>=1.31.95,<1.31.96a0|>=1.31.96,<1.31.97a0|>=1.31.97,<1.31.98a0|>=1.31.98,<1.31.99a0|>=1.31.99,<1.32.0a0|>=1.32.0,<1.32.1a0|>=1.32.1,<1.32.2a0|>=1.32.2,<1.32.3a0|>=1.32.3,<1.32.4a0|>=1.32.4,<1.32.5a0|>=1.32.5,<1.32.6a0|>=1.32.6,<1.32.7a0|>=1.32.7,<1.32.8a0|>=1.32.8,<1.32.9a0|>=1.32.9,<1.32.10a0|>=1.32.10,<1.32.11a0|>=1.32.11,<1.32.12a0|>=1.32.12,<1.32.13a0|>=1.32.13,<1.32.14a0|>=1.32.14,<1.32.15a0|>=1.32.15,<1.32.16a0|>=1.32.16,<1.32.17a0|>=1.32.17,<1.32.18a0|>=1.32.18,<1.32.19a0|>=1.32.19,<1.32.20a0|>=1.32.20,<1.32.21a0|>=1.32.21,<1.32.22a0|>=1.32.22,<1.32.23a0|>=1.32.23,<1.32.24a0|>=1.32.24,<1.32.25a0|>=1.32.25,<1.32.26a0|>=1.32.26,<1.32.27a0|>=1.32.27,<1.32.28a0|>=1.32.28,<1.32.29a0|>=1.32.29,<1.32.30a0|>=1.32.30,<1.32.31a0|>=1.32.31,<1.32.32a0|>=1.32.32,<1.32.33a0|>=1.32.33,<1.32.34a0|>=1.32.34,<1.32.35a0|>=1.32.35,<1.32.36a0|>=1.32.36,<1.32.37a0|>=1.32.37,<1.32.38a0|>=1.32.38,<1.32.39a0|>=1.32.39,<1.32.40a0|>=1.32.40,<1.32.41a0|>=1.32.41,<1.32.42a0|>=1.32.42,<1.32.43a0|>=1.32.43,<1.32.44a0|>=1.32.44,<1.32.45a0|>=1.32.45,<1.32.46a0|>=1.32.46,<1.32.47a0|>=1.32.47,<1.32.48a0|>=1.32.48,<1.32.49a0|>=1.32.49,<1.32.50a0|>=1.32.50,<1.32.51a0|>=1.32.51,<1.32.52a0|>=1.32.52,<1.32.53a0|>=1.32.53,<1.32.54a0|>=1.32.54,<1.32.55a0|>=1.32.55,<1.32.56a0|>=1.32.56,<1.32.57a0|>=1.32.57,<1.32.58a0|>=1.32.58,<1.32.59a0|>=1.32.59,<1.32.60a0|>=1.32.60,<1.32.61a0|>=1.32.61,<1.32.62a0|>=1.32.62,<1.32.63a0|>=1.32.63,<1.32.64a0|>=1.32.64,<1.32.65a0|>=1.32.65,<1.32.66a0|>=1.32.66,<1.32.67a0|>=1.32.67,<1.32.68a0|>=1.32.68,<1.32.69a0|>=1.32.69,<1.32.70a0|>=1.32.70,<1.32.71a0|>=1.32.71,<1.32.72a0|>=1.32.72,<1.32.73a0|>=1.32.73,<1.32.74a0|>=1.32.74,<1.32.75a0|>=1.32.75,<1.32.76a0|>=1.32.76,<1.32.77a0|>=1.32.77,<1.32.78a0|>=1.32.78,<1.32.79a0|>=1.32.79,<1.32.80a0|>=1.32.80,<1.32.81a0|>=1.32.81,<1.32.82a0|>=1.32.82,<1.32.83a0|>=1.32.83,<1.32.84a0|>=1.32.84,<1.32.85a0|>=1.32.85,<1.32.86a0|>=1.32.86,<1.32.87a0|>=1.32.87,<1.32.88a0|>=1.32.88,<1.32.89a0|>=1.32.89,<1.32.90a0|>=1.32.90,<1.32.91a0|>=1.32.91,<1.32.92a0|>=1.32.92,<1.32.93a0|>=1.32.93,<1.32.94a0|>=1.32.94,<1.32.95a0|>=1.32.95,<1.32.96a0|>=1.32.96,<1.32.97a0|>=1.32.97,<1.32.98a0|>=1.32.98,<1.32.99a0|>=1.32.99,<1.33.0a0|>=1.33.0,<1.33.1a0|>=1.33.1,<1.33.2a0|>=1.33.2,<1.33.3a0|>=1.33.3,<1.33.4a0|>=1.33.4,<1.33.5a0|>=1.33.5,<1.33.6a0|>=1.33.6,<1.33.7a0|>=1.33.7,<1.33.8a0|>=1.33.8,<1.33.9a0|>=1.33.9,<1.33.10a0|>=1.33.10,<1.33.11a0|>=1.33.11,<1.33.12a0|>=1.33.12,<1.33.13a0|>=1.33.13,<1.33.14a0|>=1.33.14,<1.33.15a0|>=1.33.15,<1.33.16a0|>=1.33.16,<1.33.17a0|>=1.33.17,<1.33.18a0|>=1.33.18,<1.33.19a0|>=1.33.19,<1.33.20a0|>=1.33.20,<1.33.21a0|>=1.33.21,<1.33.22a0|>=1.33.22,<1.33.23a0|>=1.33.23,<1.33.24a0|>=1.33.24,<1.33.25a0|>=1.33.25,<1.33.26a0|>=1.33.26,<1.33.27a0|>=1.33.27,<1.33.28a0|>=1.33.28,<1.33.29a0|>=1.33.29,<1.33.30a0|>=1.33.30,<1.33.31a0|>=1.33.31,<1.33.32a0|>=1.33.32,<1.33.33a0|>=1.33.33,<1.33.34a0|>=1.33.34,<1.33.35a0|>=1.33.35,<1.33.36a0|>=1.33.36,<1.33.37a0|>=1.33.37,<1.33.38a0|>=1.33.38,<1.33.39a0|>=1.33.39,<1.33.40a0|>=1.33.40,<1.33.41a0|>=1.33.41,<1.33.42a0|>=1.33.42,<1.33.43a0|>=1.33.43,<1.33.44a0|>=1.33.44,<1.33.45a0|>=1.33.45,<1.33.46a0|>=1.33.46,<1.33.47a0|>=1.33.47,<1.33.48a0|>=1.33.48,<1.33.49a0|>=1.33.49,<1.33.50a0|>=1.33.50,<1.33.51a0|>=1.33.51,<1.33.52a0|>=1.33.52,<1.33.53a0|>=1.33.53,<1.33.54a0|>=1.33.54,<1.33.55a0|>=1.33.55,<1.33.56a0|>=1.33.56,<1.33.57a0|>=1.33.57,<1.33.58a0|>=1.33.58,<1.33.59a0|>=1.33.59,<1.33.60a0|>=1.33.60,<1.33.61a0|>=1.33.61,<1.33.62a0|>=1.33.62,<1.33.63a0|>=1.33.63,<1.33.64a0|>=1.33.64,<1.33.65a0|>=1.33.65,<1.33.66a0|>=1.33.66,<1.33.67a0|>=1.33.67,<1.33.68a0|>=1.33.68,<1.33.69a0|>=1.33.69,<1.33.70a0|>=1.33.70,<1.33.71a0|>=1.33.71,<1.33.72a0|>=1.33.72,<1.33.73a0|>=1.33.73,<1.33.74a0|>=1.33.74,<1.33.75a0|>=1.33.75,<1.33.76a0|>=1.33.76,<1.33.77a0|>=1.33.77,<1.33.78a0|>=1.33.78,<1.33.79a0|>=1.33.79,<1.33.80a0|>=1.33.80,<1.33.81a0|>=1.33.81,<1.33.82a0|>=1.33.82,<1.33.83a0|>=1.33.83,<1.33.84a0|>=1.33.84,<1.33.85a0|>=1.33.85,<1.33.86a0|>=1.33.86,<1.33.87a0|>=1.33.87,<1.33.88a0|>=1.33.88,<1.33.89a0|>=1.33.89,<1.33.90a0|>=1.33.90,<1.33.91a0|>=1.33.91,<1.33.92a0|>=1.33.92,<1.33.93a0|>=1.33.93,<1.33.94a0|>=1.33.94,<1.33.95a0|>=1.33.95,<1.33.96a0|>=1.33.96,<1.33.97a0|>=1.33.97,<1.33.98a0|>=1.33.98,<1.33.99a0|>=1.33.99,<1.34.0a0|>=1.34.0,<1.34.1a0|>=1.34.1,<1.34.2a0|>=1.34.2,<1.34.3a0|>=1.34.3,<1.34.4a0|>=1.34.4,<1.34.5a0|>=1.34.5,
```