Ensembl Genome Browser Workshop

Ensembl REST API Workshop

Universidad de los Andes
Friday, 21st March 2025

Welcome to the *Living Document* for this Ensembl Browser workshop. Everyone who is registered for the course has access to edit this document. Please feel free to use this document to ask questions to the Ensembl team throughout the workshop. If you wish to ask questions privately, please do not hesitate to contact the Ensembl Helpdesk.

The *Living Document* is a great way of capturing the knowledge exchanged during the course and saving it for future use by yourselves and those who can't attend this course. Remember - you don't have to contribute, but any additions will be welcomed!

The course learning outcomes are:

- Programmatically access main data types in Ensembl: genomes, genes, genetic variation, regulatory features and comparative genomics.

- Describe the data types accessible through the Ensembl REST API.

- Describe the methods in the Ensembl REST API.

- Navigate the Ensembl REST API documentation to find available methods.

- Write scripts to access data via the Ensembl REST API.

Course Overview

Agenda

Friday, 21st March 2025 (times shown in GMT^{-5})	
09:00 – 09:30	Introduction to the Ensembl REST API
09:30 – 10:00	Accessing GET queries via a browser
10:00 – 10:45	Scripting around REST API calls
10:45 – 11:05	Break
11:05 – 11:50	Decoding JSON responses
11:50 – 12:35	Using results: fetching specific data points
12:35 – 13:00	Chaining REST API queries
13:00 – 14:00	Lunch break
14:00 – 14:45	Chaining REST API queries continued
14:45 – 15:30	Accessing POST queries: bulk REST API calls
15:30 – 15:50	Break
15:50 – 16:50	Other content types
16:50 – 17:20	Rate limits
17:20 – 17:30	Feedback and wrap-up

Trainer

Louisse Paola Mirabueno

Demos, exercises and slides available to download

https://training.ensembl.org/events/2025/2025-03-21-UniAndes_API

Feedback survey

https://forms.gle/QReuXyekKMo9qkeaA

We would really appreciate it if you could share your thoughts with us regarding these sessions. We are interested in your opinions, how you feel the experience has benefited you and how it could be improved. If you could find a few minutes to complete a short survey at the end of the last session it would really help us in improving the training we can deliver.

Questions

If you have any questions/problems that you would like to share and apply to the whole class please add them below.

Write your **question** after the last one you can see in this document (you can add any screenshots if you think it might help. We will **answer** your question underneath.

1. **Q: Does the Ensembl Perl API apply rate limits like the REST API?**
   A: No, it doesn't. Instead, the Ensembl Perl API interacts directly with the underlying MySQL databases. You can find more information and tutorials here: https://www.ensembl.org/info/data/api.html.

2. **Q:**

   ```
   # Enter script here if applicable
   ```

   A:

   ```
   # Enter script here if applicable
   ```

3. **Q:**

   ```
   # Enter script here if applicable
   ```

   A:

   ```
   # Enter script here if applicable
   ```

4. **Q:**

   ```
   # Enter script here if applicable
   ```

   A:

   ```
   # Enter script here if applicable
   ```

5. **Q:**

   ```
   # Enter script here if applicable
   ```

   A:

   ```
   # Enter script here if applicable
   ```

6. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

7. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

8. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

9. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

10. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

11. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

12. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

13. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

14. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

15. Q:

```
# Enter script here if applicable
```

A:

```
# Enter script here if applicable
```

Resources

This section of the *Living Document* provides additional resources that might be useful to you in developing skills and knowledge in the course topic area.

Ensembl REST API

Below is a collection of some useful Ensembl REST API links:

- [Ensembl REST API](#)

- [Ensembl REST API user guide](#)

- [Ensembl](#) (vertebrate species)

- [Ensembl Genomes](#) (non-vertebrate species)

Ensembl API training

For more in-depth Ensembl API training, you can find links to online tutorials, walk-throughs and exercises below:

- [Ensembl REST API](#)

- [Ensembl Perl API documentation](#)

- [Ensembl Perl API tutorial](#)

- [Webinar: Introducing the New Ensembl Genome Browser](#)

- [Ensembl Training](#) (walk-throughs and exercises)

EMBL-EBI training

- [EMBL's European Bioinformatics Institute (EMBL-EBI)](#)

- [EMBL-EBI databases and tools](#)

- The [EMBL-EBI Training portal](#) provides courses related to genomics and bioinformatics, including free [on-demand online training](#), data resource tutorials and recorded webinars (available on the [training portal](#) or [YouTube](#)).