**Download repertoires and metadata:**

**Overview**

This Python script enables users to download repertoires and metadata from online repositories. It offers an interactive command-line interface for selecting repositories, specifying a download directory, and entering study IDs. The script utilizes multiple Python libraries and modules for asynchronous processing, networking, and data management.

**Script Structure**

The script consists of multiple functions and classes designed for the following tasks:

1. **Collecting Repertoires (collect\_repertoires)**: Query repertoires from a list of repositories based on a provided study ID. It sends requests to each repository and collects the results.
2. **Counting Rearrangements (count\_rearrangements)**: Counts the rearrangements in the collected repertoires. It uses asynchronous requests to improve performance.
3. **Main Function (collect\_repertoires\_and\_count\_rearrangements)**: Combines repertoire collection and rearrangement counting, providing summary statistics about the downloaded data.
4. **Downloading Repertoires (BatchDownloader)**: Manages the asynchronous download of repertoires. It supports multiple concurrent downloads with a specified limit.

**Usage**

1. Run the script: **python download\_repertoires\_and\_metadata.py**
2. Input the download directory and study ID.
3. Select repositories to search within.
4. Initiate the download process.
5. Repeat for additional study IDs or exit with "exit."

**Customization**

You can customize the list of default repository URLs in the **default\_repository\_df** DataFrame to include your own repositories or modify existing ones.