

User Guide – FRED Data Search Tool for JPMC – CIO Group
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About: The FRED data search tool is designed by Apoorv Purwar for JPMC to retrieve databases based on search query given by user and display observation values of the selected database and the specified filters, using the FRED API.

This tool is developed using Python 3.

Assumptions: This tool makes the following assumptions –

- 1) The FRED API, will always return one 'release_id' for any FRED database code passed.
- 2) The first source returned by the FRED API among the list of sources returned for a FRED code is the valid source.
- 3) By 'start_date' and 'end_date', JPMC means 'Observation' start and end date respectively and not release start and end date.
- 4) All displayed time series data is based on the specified observation start and end dates.
- 5) FRED API is responsible for the correctness of data, this tool relies of FRED API for correctness of data.

Directions for Users:

- In order to run the tool, execute the file '*fred_data_search.py*' (Python 3) either from terminal (using – *python fred_data_search.py*) or from an IDE.
- On successful execution, you will see a welcome message as –

```
*****
* Welcome to JPMC FRED Search Tool *
*   Author – Apoorv Purwar   *
*****

Please Enter Search Term:
```

- Enter search keywords, to query from FRED database.
- If your search keyword does not fetch any result, you will see a message like –

```
*****
* Welcome to JPMC FRED Search Tool *
*   Author – Apoorv Purwar   *
*****

Please Enter Search Term: random garbage text
No results found for the search text, try again later!
Terminating!
```

- If the keywords have corresponding databases, then you will see up to 10 top results retrieved like -

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Please Enter Search Term: US GDP

Upto 10, Top Query Results:

- 1) Real Gross Domestic Product (FRED Code: GDPC1) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1947-01-01, End Date: 2017-07-01
Frequency - Quarterly
- 2) Real Gross Domestic Product (FRED Code: A191RL1Q225SBEA) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1947-04-01, End Date: 2017-07-01
Frequency - Quarterly
- 3) Real Gross Domestic Product (FRED Code: GDPCA) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1929-01-01, End Date: 2016-01-01
Frequency - Annual
- 4) Real Gross Domestic Product (FRED Code: A191RL1A225NBEA) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1930-01-01, End Date: 2016-01-01
Frequency - Annual
- 5) Real Gross Domestic Product (FRED Code: A191R01Q156NBEA) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1948-01-01, End Date: 2017-07-01
Frequency - Quarterly
- 6) Gross Domestic Product (FRED Code: GDP) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1947-01-01, End Date: 2017-07-01
Frequency - Quarterly
- 7) Gross Domestic Product (FRED Code: GDPA) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1929-01-01, End Date: 2016-01-01
Frequency - Annual
- 8) Gross Domestic Product (FRED Code: A191RP1Q027SBEA) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1947-04-01, End Date: 2017-07-01
Frequency - Quarterly
- 9) Gross Domestic Product (FRED Code: FYGDP) from U.S. Office of Management and Budget
Observation - Start Date: 1930-06-30, End Date: 2016-09-30
Frequency - Annual, Fiscal Year
- 10) Gross Domestic Product (FRED Code: A191RP1A027NBEA) from U.S. Bureau of Economic Analysis
Observation - Start Date: 1930-01-01, End Date: 2016-01-01

- Enter the index of the database you want the time series for. Once you enter the index the tool shows you the details of the selected database, before proceeding forward –

Please select a Database from above list (Input Number: 1 – 10): 1

You selected Real Gross Domestic Product (FRED Code: GDPC1).

- If the index entered is invalid, you get the following error message –

Please select a Database from above list (Input Number: 1 – 10): 11

Invalid database index entered, try again later!

- Once you have selected the database, enter the observation start date, observation end date and frequency for which you want the time series data.

```
Enter Observation Time Start Date (Format: YYYY-MM-DD): 2015-01-01
Enter Observation Time End Date (Format: YYYY-MM-DD): 2017-11-17

Frequency Legend:
-----
d = Daily
w = Weekly
bw = Biweekly
m = Monthly
q = Quarterly
sa = Semiannual
a = Annual

Enter Frequency(d/w/bw/m/q/sa/a):q
```

- On specifying any incorrect value, you see an error message like -

```
Enter Observation Time Start Date (Format: YYYY-MM-DD): dsadada

Bad Request. Variable observation_start is not a YYYY-MM-DD formatted date (e.g. 2000-02-24). Try Again Later!
```

- If your input parameters are correct, you see the time series data like –

Date	-	2015-01-01	; Value	-	16349.97
Date	-	2015-04-01	; Value	-	16460.889
Date	-	2015-07-01	; Value	-	16527.587
Date	-	2015-10-01	; Value	-	16547.619
Date	-	2016-01-01	; Value	-	16571.573
Date	-	2016-04-01	; Value	-	16663.516
Date	-	2016-07-01	; Value	-	16778.148
Date	-	2016-10-01	; Value	-	16851.42
Date	-	2017-01-01	; Value	-	16903.24
Date	-	2017-04-01	; Value	-	17031.085
Date	-	2017-07-01	; Value	-	17156.946

Congratulations! You just used the best FRED Data Search Tool !!