Design & Implementierung eines Echtzeit-Q&A-Systems als Erweiterung des IAmA-Subreddits

(Python) – Dokumentation von REST-Services

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Table of Contents

Namespace Index	2
Class Index	3
File Index	4
r_rest_Crawl_N_Calculate_Data	5
r_rest_Login_Behaviour	9
r_rest_Meta_Logger	10
r_rest_No_Cache	11
r_rest_Post_Behaviour	12
r_rest_Service	13
r_rest_Thread_Overview	19
w_posting_Bot	20
Class Documentation	
r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data	22
r_rest_Login_Behaviour.r_rest_Login_Behaviour	30
r_rest_Meta_Logger.r_rest_Meta_Logger	32
r_rest_Post_Behaviour.r_rest_Post_Behaviour	34
r_rest_Thread_Overview.r_rest_Thread_Overview	35
File Documentation	37
r_rest_Crawl_N_Calculate_Data.py	37
r_rest_Login_Behaviour.py	38
r_rest_Meta_Logger.py	39
r_rest_No_Cache.py	40
r_rest_Post_Behaviour.py	41
r_rest_Service.py	42
r_rest_Thread_Overview.py	43
w_posting_Bot.py	44
Index	45

Namespace Index

Packages

Here are the packages with brief descriptions (if available):

r rest Crawl N Calculate Data	5
r_rest_Login_Behaviour	
r_rest_Meta_Logger	
r_rest_No_Cache	
r_rest_Post_Behaviour	
r_rest_Service	
r_rest_Thread_Overview	
w posting Bot	
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Class Index

Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

r rest Crawl N Calculate Data.r rest Crawl N Calculate Data
r rest Login Behaviour.r rest Login Behaviour
r rest Meta Logger.r rest Meta Logger
32

<u>r_rest_Post_Behaviour.r_rest_Post_Behaviour</u> 34 r_rest_Thread_Overview.r_rest_Thread_Overview 35

3

File Index

File List

Here is a list of all files with brief descriptions:

r rest Crawl N Calculate Data.py	37
r_rest_Login_Behaviour.py	38
r_rest_Meta_Logger.py	39
r_rest_No_Cache.py	40
r_rest_Post_Behaviour.py	41
r_rest_Service.py	42
r_rest_Thread_Overview.py	43
w posting Bot.py	44

Namespace Documentation

r_rest_Crawl_N_Calculate_Data Namespace Reference

Classes

class r rest Crawl N Calculate Data

Variables

- mongo db client instance = MongoClient('localhost', 27017)
- mongo db author fake iama instance = mongo db client instance['fake_iAMA_Reddit_Authors']
- mongo db_author_fake_iama_collection_names = mongo_db_author_fake_iama_instance.collection_names()
- mongo db author comments instance = mongo db client instance['fake_iAMA_Reddit_Comments']
- mongo db author comments collection = mongo_db_author_comments_instance.collection_names()
- <u>reddit_instance</u> = praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
- <u>reddit submission</u> = None
- int thread_created_utc = 0
- string thread author = ""
- string <u>thread_title</u> = ""
- int thread_amount_questions = 0
- int thread amount unanswered questions = 0
- int thread_duration = 0
- string <u>thread id</u> = ""
- int thread_ups = 0
- int thread downs = 0
- int thread time stamp last question = 0
- int thread_average_question_score = 0
- int thread average reaction time host = 0
- int thread new question every $x \sec = 0$
- int thread new answer every $x \sec = 0$
- int thread amount questions tier 1 = 0
- int thread amount questions tier x = 0
- int thread question top score = 0
- int thread_amount_questioners = 0
- list thread unanswered questions = []
- list thread_answered_questions = []
- list thread_answers_of_host = []
- list <u>thread_questions_n_answers</u> = []
- list thread_unanswered_questions_converted = []
- list json object to return = []

Variable Documentation

list r_rest_Crawl_N_Calculate_Data.json_object_to_return = []

Definition at line 82 of file r_rest_Crawl_N_Calculate_Data.py.

```
r_rest_Crawl_N_Calculate_Data.mongo_db_author_comments_collection =
mongo db author comments instance.collection names()
   Definition at line 31 of file r_rest_Crawl_N_Calculate_Data.py.
r_rest_Crawl_N_Calculate_Data.mongo_db_author_comments_instance =
mongo_db_client_instance['fake_iAMA_Reddit_Comments']
   Definition at line 30 of file r rest Crawl N Calculate Data.py.
r rest Crawl N Calculate Data.mongo db author fake iama collection names =
mongo_db_author_fake_iama_instance.collection_names()
   Definition at line 28 of file r_rest_Crawl_N_Calculate_Data.py.
r_rest_Crawl_N_Calculate_Data.mongo_db_author_fake_iama_instance =
mongo db client instance['fake iAMA Reddit Authors']
   Definition at line 27 of file r_rest_Crawl_N_Calculate_Data.py.
r rest Crawl N Calculate Data.mongo db client instance = MongoClient('localhost', 27017)
   Definition at line 25 of file r_rest_Crawl_N_Calculate_Data.py.
r rest Crawl N Calculate Data.reddit instance =
praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
   Definition at line 34 of file r rest Crawl N Calculate Data.py.
r rest Crawl N Calculate Data.reddit submission = None
   Definition at line 37 of file r_rest_Crawl_N_Calculate_Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_amount_questioners = 0
   Definition at line 63 of file r rest Crawl N Calculate Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_amount_questions = 0
   Definition at line 45 of file r rest Crawl N Calculate Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_amount_questions_tier 1 = 0
```

Definition at line 60 of file r_rest_Crawl_N_Calculate_Data.py.

```
int r_rest_Crawl_N_Calculate_Data.thread_amount_questions_tier_x = 0
    Definition at line 61 of file r_rest_Crawl_N_Calculate_Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_amount_unanswered_questions = 0
    Definition at line 46 of file r_rest_Crawl_N_Calculate_Data.py.
list r_rest_Crawl_N_Calculate_Data.thread_answered_questions = []
    Definition at line 67 of file r_rest_Crawl_N_Calculate_Data.py.
list r_rest_Crawl_N_Calculate_Data.thread_answers_of_host = []
    Definition at line 70 of file r_rest_Crawl_N_Calculate_Data.py.
string r_rest_Crawl_N_Calculate_Data.thread_author = ""
    Definition at line 41 of file r rest Crawl N Calculate Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_average_question_score = 0
    Definition at line 55 of file r_rest_Crawl_N_Calculate_Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_average_reaction_time_host = 0
    Definition at line 56 of file r rest Crawl N Calculate Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_created_utc = 0
    Definition at line 40 of file r_rest_Crawl_N_Calculate_Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_downs = 0
    Definition at line 50 of file r_rest_Crawl_N_Calculate_Data.py.
int r_rest_Crawl_N_Calculate_Data.thread_duration = 0
    Definition at line 47 of file r_rest_Crawl_N_Calculate_Data.py.
string r_rest_Crawl_N_Calculate_Data.thread_id = ""
```

Definition at line 48 of file r_rest_Crawl_N_Calculate_Data.py.

int r_rest_Crawl_N_Calculate_Data.thread_new_answer_every_x_sec = 0 Definition at line 58 of file r_rest_Crawl_N_Calculate_Data.py. int r_rest_Crawl_N_Calculate_Data.thread_new_question_every_x_sec = 0 Definition at line 57 of file r_rest_Crawl_N_Calculate_Data.py. int r_rest_Crawl_N_Calculate_Data.thread_question_top_score = 0 Definition at line 62 of file r_rest_Crawl_N_Calculate_Data.py. list r_rest_Crawl_N_Calculate_Data.thread_questions_n_answers = [] Definition at line 74 of file r_rest_Crawl_N_Calculate_Data.py. int r_rest_Crawl_N_Calculate_Data.thread_time_stamp_last_question = 0 Definition at line 53 of file r rest Crawl N Calculate Data.py. string r_rest_Crawl_N_Calculate_Data.thread_title = "" Definition at line 44 of file r_rest_Crawl_N_Calculate_Data.py. list r_rest_Crawl_N_Calculate_Data.thread_unanswered_questions = [] Definition at line 66 of file r rest Crawl N Calculate Data.py. list r_rest_Crawl_N_Calculate_Data.thread_unanswered_questions_converted = [] Definition at line 79 of file r_rest_Crawl_N_Calculate_Data.py. int r_rest_Crawl_N_Calculate_Data.thread_ups = 0 Definition at line 49 of file r_rest_Crawl_N_Calculate_Data.py.

r_rest_Login_Behaviour Namespace Reference

Classes

• class r rest Login Behaviour

Variables

- <u>r</u> = praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
- client id
- client_secret
- redirect uri
- <u>url_auth</u> = r.get_authorize_url('uniqueKey', ['identity', 'submit'], True)

Variable Documentation

r_rest_Login_Behaviour.client_id

Definition at line 15 of file r_rest_Login_Behaviour.py.

r_rest_Login_Behaviour.client_secret

Definition at line 16 of file r_rest_Login_Behaviour.py.

```
r_rest_Login_Behaviour.r = praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
```

Definition at line 12 of file r_rest_Login_Behaviour.py.

r_rest_Login_Behaviour.redirect_uri

Definition at line 17 of file r_rest_Login_Behaviour.py.

r_rest_Login_Behaviour.url_auth = r.get_authorize_url('uniqueKey', ['identity', 'submit'], True)

Definition at line 24 of file r_rest_Login_Behaviour.py.

r_rest_Meta_Logger Namespace Reference

Classes

• class <u>r rest Meta Logger</u>

Variables

- $\underline{\text{timestamp}} = \text{None}$
- $\underline{\text{user}} = \text{None}$
- <u>object_clicked_text</u> = None
- <u>file name csv</u> = None

Variable Documentation

r_rest_Meta_Logger.file_name_csv = None

Definition at line 18 of file r_rest_Meta_Logger.py.

r_rest_Meta_Logger.object_clicked_text = None

Definition at line 17 of file r_rest_Meta_Logger.py.

r_rest_Meta_Logger.timestamp = None

Definition at line 15 of file r_rest_Meta_Logger.py.

r_rest_Meta_Logger.user = None

Definition at line 16 of file r_rest_Meta_Logger.py.

r_rest_No_Cache Namespace Reference

Functions

• def <u>nocache</u> (view)

Function Documentation

def r_rest_No_Cache.nocache (view)

Definition at line 6 of file r_rest_No_Cache.py.

r_rest_Post_Behaviour Namespace Reference

Classes

• class <u>r rest Post Behaviour</u>

r_rest_Service Namespace Reference

Functions

- def use signin key ()
- def crawl_n_calculate_data ()
- def write meta data file ()
- def post comment to reddit ()
- def return_font_files (font_file)
- def <u>return</u> <u>js</u> <u>files</u> (js_file)
- def return js map files (map file)
- def <u>return cs map files</u> (map_file)
- def return_css_files (css_file)
- def <u>return img files</u> (img_file)

Variables

- <u>app</u> = Flask(__name__, static_url_path=")
- cData = r rest Crawl N Calculate Data()
- tOverview = r_rest_Thread_Overview()
- iLogin = r_rest_Login_Behaviour()
- pBehaviour = r rest Post Behaviour()
- mWriter = r_rest_Meta_Logger()
- string <u>username actually logged in = ""</u>
- string thread_actually_used = ""
- \underline{r} object = None
- methods
- <u>host</u>
- threaded
- <u>True</u>
- debug

Function Documentation

def r_rest_Service.crawl_n_calculate_data ()

```
Crawls author data, writes them into databases and prepares questions and answers depending on given parameters

This route is active, whenever the user
- clicked the refresh button on the (un)answered panel
- initially selected a thread on the left side panel

This route processes (sorting / filtering) settings for (un)answered questions panel

Args:
    request.args.get('t_id') : The id of the thread being processed
    request.args.get('u f t') : The selected tier - filter for unanswered questions (all / 1 / X)
    request.args.get('u_s_e') : The selected score comparison - filter for unanswered questions

(eql / grt / lrt)
    request.args.get('u_s_n') : The selected score value used for filter for unanswered

questions(any int)
    request.args.get('u_s_d') : The selected sorting direction for unanswered questions (asc / des)
    request.args.get('u s t') : The selected type to sort the data to (author / creation / score / random)

request.args.get('a f t') : The selected tier - filter for answered questions (all / 1 / X)
```

```
request.args.get('a s e') : The selected score comparison - filter for answered questions (eql
/ grt / lrt)
   request.args.get('a s n'): The selected score value used for filter for answered questions(any
    request.args.get('a s d') : The selected sorting direction for answered questions (asc / des)
    request.args.get('a s t') : The selected type to sort the data to (author / creation / score
/ random)
Returns:
    1. thread over view data (whenever if will be entered) (dict):
        'title' (str):
                                         [The written title of the thread]
        'amount answered' (str):
                                         [The amount of questions already answered]
                                        [The overall amount of questions]
        'amount of questions' (str):
        'duration' (str):
                                        [The duration of the thread (in hours / days) depending
on internal calc]
        'thread id' (str):
                                         [The id of the thread]
    2. (un)answered question information sorted / filtered (dict):
        'extracted an filter score equals' (str):
                                                         [Answered q: The score comparison (eql /
grt / lrt)]
        'extracted an filter score numeric' (str):
                                                         [Answered q: The score value (int)]
                                                         [Answered q: The tier - filter (all / 1
        'extracted an filter tier' (str):
/ Xx1
                                                         [Answered q: The sorting direction (asc
        'extracted an sorting direction' (str):
/ des)]
        'extracted an sorting type' (str):
                                                         [Answered q: The sorting type
                                                         (author / creation / score / random)]
        'extracted_thread_id' (str):
                                                         [The ID of the processed thread]
        'extracted un filter score equals' (str):
                                                        [Unanswered q: The score comparison (eql
/ grt / lrt)]
        'extracted un filter score numeric' (str):
                                                         [Unanswered q: The score value (int)]
        'extracted un filter tier' (str):
                                                         [Unanswered q: The tier - filter (all /
1 / Xx]
        'extracted un sorting direction' (str):
                                                         [Unanswered q: The sorting direction (asc
/ des)]
                                                         [Unanswered q: The sorting type
        'extracted un sorting type' (str):
                                                         (author / creation / score / random)]
```

Definition at line 95 of file r_rest_Service.py.

def r_rest_Service.post_comment_to_reddit ()

```
Whenever the user clicked 'send' on the iAMA Experience prototype this route will be accessed and
the comment
will be posted to reddit
   This route is active, whenever the user clicks the "send" button within the unanswered questions
panel
   It works the following way:
    1. A REST-POST message, with the text inside its body to be uploaded to reddit will retreived
     1.1. That post will be uploaded to reddit
    2. The new information will be crawled from reddit and written into the database
     Crawling it live from reddit instead of directly writing it into the database is more precise
     (i.E. in cases of utc epoch timestamp)
    This route processes (sorting / filtering) settings for (un)answered questions panel
Args:
    request.args.get('c id') (str) : The ID of the comment the author replied to
    request.json['text'] (str) : The answer text of the author
Returns:
```

```
"Processed your posting request" (str) : The string, which will be given in return does not matter.
```

After successful return of that string a new ajax - REST - Call triggering information recrawl will be done.

Definition at line 220 of file r_rest_Service.py.

def r_rest_Service.return_cs_map_files (map_file)

```
Whenever the webpage tries to access .css.map files they will be returned to it

Args:
    map_file (str): The path to the requested .css.map- file

Returns:
```

(File): The requested .css.map - file

Definition at line 311 of file r_rest_Service.py.

def r_rest_Service.return_css_files (css_file)

```
Whenever the webpage tries to access .css files they will be returned to it

Args:
    css_file (str): The path to the requested .css - file

Returns:
```

(File): The requested .css - file

Definition at line 327 of file r_rest_Service.py.

def r_rest_Service.return_font_files (font_file)

```
Whenever the webpage tries to access font files they will be returned to it

Args:
font_file (str): The path to the requested font file

Returns:
```

(File): The requested font file

Definition at line 263 of file r_rest_Service.py.

def r_rest_Service.return_img_files (img_file)

```
Whenever the webpage tries to access image files they will be returned to it

Args:
    img_file (str): The path to the requested image file

Returns:
```

(File): The requested image file

Definition at line 343 of file r_rest_Service.py.

def r_rest_Service.return_js_files (js_file)

```
Whenever the webpage tries to access javascript files they will be returned to it

Args:
```

```
js_file (str): The path to the requested .js file
Returns:
```

(File): The requested .js file

Definition at line 279 of file r_rest_Service.py.

def r_rest_Service.return_js_map_files (map_file)

```
Whenever the webpage tries to access map files they will be returned to it
.map files are required by jquery.min
Args:
    map_file (str): The path to the requested js.map file
Returns:
```

(File): The requested js.map file

Definition at line 295 of file r_rest_Service.py.

def r_rest_Service.use_signin_key ()

```
Handles the call, whenever the user clicked "allow access" on Reddit-OAUTH2 - website

Whenever the user successfully logged on to reddit he will be redirect to this route.

After redirection, the given sign_key will be extracted and authentification within PRAW will be done with that key.

Args:
    request.args.get('code') (str): The sign key returned by reddit

Returns:
    app.send_static_file('index.html'): If the authetification was successful the iAMA experience prototype will be

dieplayed
```

displayed

Definition at line 53 of file r_rest_Service.py.

def r_rest_Service.write_meta_data_file ()

```
Handles the call, whenever the user clicked something on the webpage
    Whenever the user clicked something on the webpage (i.e. buttons) it will be written down into a text file.
    This will collect meta data and help us analyzing and improving our iAMA experience

Args:
    request.json['author'] : The name of the currently logged on user request.json['text'] : The description of what the user actually clicked

Returns:
```

'done': Just some text to fulfill the return principles

Definition at line 194 of file r_rest_Service.py.

Variable Documentation

```
r_rest_Service.app = Flask(__name__, static_url_path=")
```

```
Definition at line 29 of file r_rest_Service.py.
```

r_rest_Service.cData = r_rest_Crawl_N_Calculate_Data()

Definition at line 34 of file r_rest_Service.py.

r_rest_Service.debug

Definition at line 360 of file r_rest_Service.py.

r_rest_Service.host

Definition at line 360 of file r_rest_Service.py.

r_rest_Service.iLogin = r_rest_Login_Behaviour()

Definition at line 37 of file r_rest_Service.py.

r rest Service.methods

Definition at line 52 of file r_rest_Service.py.

r_rest_Service.mWriter = r_rest_Meta_Logger()

Definition at line 40 of file r_rest_Service.py.

r_rest_Service.pBehaviour = r_rest_Post_Behaviour()

Definition at line 38 of file r_rest_Service.py.

r_rest_Service.r_object = None

Definition at line 45 of file r_rest_Service.py.

string r_rest_Service.thread_actually_used = ""

Definition at line 44 of file r_rest_Service.py.

r_rest_Service.threaded

Definition at line 360 of file r_rest_Service.py.

r_rest_Service.tOverview = r_rest_Thread_Overview()

Definition at line 35 of file r_rest_Service.py.

r_rest_Service.True

Definition at line 360 of file r_rest_Service.py.

string r_rest_Service.username_actually_logged_in = ""

Definition at line 42 of file r_rest_Service.py.

r_rest_Thread_Overview Namespace Reference

Classes

• class r rest Thread Overview

Variables

- <u>reddit instance</u> = praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
- mongo db client instance = MongoClient('localhost', 27017)
- mongo_db_author_fake_iama_instance = mongo_db_client_instance['fake_iAMA_Reddit_Authors']
- mongo db author fake iama collection names = mongo_db_author_fake_iama_instance.collection_names()

Variable Documentation

r_rest_Thread_Overview.mongo_db_author_fake_iama_collection_names = mongo_db_author_fake_iama_instance.collection_names()

Definition at line 19 of file r rest Thread Overview.py.

r_rest_Thread_Overview.mongo_db_author_fake_iama_instance = mongo_db_client_instance['fake_iAMA_Reddit_Authors']

Definition at line 18 of file r_rest_Thread_Overview.py.

r_rest_Thread_Overview.mongo_db_client_instance = MongoClient('localhost', 27017)

Definition at line 15 of file r_rest_Thread_Overview.py.

r_rest_Thread_Overview.reddit_instance = praw.Reddit(user agent="University Regensburg iAMA Crawler 0.001")

Definition at line 13 of file r_rest_Thread_Overview.py.

w_posting_Bot Namespace Reference

Functions

- def redefine r object ()
- def get_questions_from_text_file ()
- def get random account ()
- def log in with acc data ()
- def get_submission ()
- def post question ()
- def wait random amount of seconds ()

Variables

- $\mathbf{r} = \text{None}$
- string password_for_all_test_accs = ""
- list array of login data
- int amount of questions to be asked = 35
- currently selected acc data = None
- <u>currently_selected_submission</u> = None
- list questions_to_be_asked = []

Function Documentation

```
def w_posting_Bot.get_questions_from_text_file ()
```

Definition at line 37 of file w_posting_Bot.py.

def w_posting_Bot.get_random_account ()

Definition at line 66 of file w_posting_Bot.py.

def w_posting_Bot.get_submission ()

Definition at line 85 of file w_posting_Bot.py.

def w_posting_Bot.log_in_with_acc_data ()

Definition at line 80 of file w_posting_Bot.py.

def w_posting_Bot.post_question ()

Definition at line 91 of file w_posting_Bot.py.

def w_posting_Bot.redefine_r_object ()

Definition at line 30 of file w_posting_Bot.py.

def w_posting_Bot.wait_random_amount_of_seconds ()

Definition at line 116 of file w_posting_Bot.py.

Variable Documentation

int w_posting_Bot.amount_of_questions_to_be_asked = 35

Definition at line 23 of file w_posting_Bot.py.

list w_posting_Bot.array_of_login_data

Definition at line 14 of file w_posting_Bot.py.

w_posting_Bot.currently_selected_acc_data = None

Definition at line 24 of file w_posting_Bot.py.

w_posting_Bot.currently_selected_submission = None

Definition at line 25 of file w_posting_Bot.py.

string w_posting_Bot.password_for_all_test_accs = ""

Definition at line 12 of file w_posting_Bot.py.

list w_posting_Bot.questions_to_be_asked = []

Definition at line 27 of file w_posting_Bot.py.

w_posting_Bot.r = None

Definition at line 10 of file w_posting_Bot.py.

Class Documentation

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data Class Reference

Public Member Functions

def <u>main method</u> (self, author_name, id_thread, un_filter_tier, un_filter_score_equals, un_filter_score_numeric, un_sorting_direction, un_sorting_type, an_filter_tier, an_filter_score_equals, an_filter_score_numeric, an_sorting_direction, an_sorting_type)

Static Public Member Functions

- def get n write author information (name of author)
- def clear variables ()
- def get thread submission (id_of_thread)
- def fill_misc_thread_data ()
- def fill left n top panel data (self)
- def fill right panel data (self, id_of_thread)
- def <u>calculate question stats</u> (self)
- def <u>calculate_down_votes</u> ()
- def <u>calculate_time_difference</u> (time_value_1, time_value_2)
- def <u>checker comment is question</u> (string_to_check)
- def <u>checker_comment_is_question_on_tier_1</u> (string_to_check)
- def checker_comment_is_not_from_thread_author (author_of_thread, comment_author)
- def check_if_comment_has_been_answered_by_thread_author (self, author_of_thread, comment_acutal_id, comment_timestamp, comments_cursor)
- def <u>sort n filter questions</u> (questions_to_be_sorted, filter_tier, filter_score_equals, filter_score_numeric, sorting_direction, sorting_type)
- def <u>convert_epoch_to_time</u> (timeAsString)
- def build_list_containing_q_n_a (self)
- def <u>count_amount_follow_up_reactions</u> (self, id_of_answer)
- def prepare unanswered questions (self)
- def uprint (objects, sep=' ', end='\n', file=sys.stdout)
- def test calculated values ()
- def create json object ()

Detailed Description

Definition at line 86 of file r_rest_Crawl_N_Calculate_Data.py.

Member Function Documentation

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.build_list_containing_q_n_a (
 self)[static]

Prepares data for display in the "answered questions" panel

This method iterates over all answered questions and all answers the host made.

Furthermore it merges them together into pairs for a easy display of it on the website

```
Args:
    self : Self reference - necessary to use methods within this class

Returns:
```

Definition at line 1043 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.calculate_down_votes ()[static]

```
Calculates the amount of down votes of a thread

This is actually not necessary anymore but will be left inside, whenever downvotes will be reimplemented to the website.

Args:

-
Returns:
```

object (int): The amount of time difference between two values in seconds

Definition at line 701 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.calculate_question_stats (self)[static]

```
Calculates remaining question statistics, like average question score, reaction time and question creation interval in seconds

Args:
self: Self representation of the class [necessary to use methods within the class itself]
Returns:
```

Definition at line 575 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.calculate_time_difference (time_value_1, time_value_2)[static]

```
Calculates the time difference between two floats in epoch style and returns seconds

Args:
    time value 1 (float): The first time value to be used for calculation
    time_value_2 (float): The second time value to be used for calculation

Returns:
    time_diff_seconds (int): The amount of time difference in seconds
```

Definition at line 725 of file r_rest_Crawl_N_Calculate_Data.py.

def

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.check_if_comment_has_been_an swered_by_thread_author (self, author_of_thread, comment_acutal_id, comment_timestamp, comments_cursor)[static]

Checks whether both strings are equal or not

```
1. A dictionary containing flags whether that a question is answered by the host with the appropriate
timestamp
   will be created in the beginning.
2. Then the method iterates over every comment within that thread
    1.1. Whenever an answer is from the iAMA hosts and the processed comments 'parent id' matches
the iAMA hosts
comments (answers) id, the returned dict will contain appropriate values and will be returned
   1.2. If this is not the case, it will be returned in its default condition
Args:
          Self representation of the class [necessary to use methods within the class itself]
    author of thread (str) : The name of the thread author (iAMA-Host)
    comment acutal id (str) : The id of the actually processed comment
   comment timestamp (float): The timestamp of the currently processed comment
    comments cursor (Cursor): The cursor which shows to the amount of comments which can be iterated
Returns:
   True (bool): Whenever the strings do not match
```

False (bool): Whenever the strings do match

Definition at line 827 of file r_rest_Crawl_N_Calculate_Data.py.

def

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.checker_comment_is_not_from_t hread_author(author_of_thread, comment_author)[static]

```
Checks whether both strings are equal or not

1. This method simply checks wether both strings match each other or not.

I have built this extra method to have a better overview in the main code..

Args:

author of thread (str): The name of the thread author (iAMA-Host)
comment_author (str): The name of the comments author

Returns:

True (bool): Whenever the strings do not match
```

False (bool): Whenever the strings do match that given question

Definition at line 804 of file r rest Crawl N Calculate Data.py.

def

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.checker_comment_is_question (string_to_check)[static]

```
Simply checks whether a given string is a question or not

1. This method simply checks wether a question mark exists within that string or not..

This is just that simple because messing around with natural processing kits to determine the semantic sense

would blow up my bachelor work...

Args:

string to check (str): The string which will be checked for a question mark

Returns:

True (bool): Whenever the given string is a question
```

False (bool): Whenever the given string is not a question

Definition at line 762 of file r_rest_Crawl_N_Calculate_Data.py.

def

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.checker_comment_is_question_o n_tier_1 (string_to_check)[static]

Definition at line 784 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.clear_variables () [static]

```
Resets all variables, to not return duplicate objects.

Because the REST-Service won't destruct the objects by it self we have to reset them manually here

Args:

-

Returns:

-
```

Definition at line 306 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.convert_epoch_to_time (timeAsString)[static]

Definition at line 1017 of file r_rest_Crawl_N_Calculate_Data.py.

def

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.count_amount_follow_up_reactions (self, id_of_answer)[static]

```
Counts the amount of follow up reactions

This method counts the amount of follow up questions regarding to the given answer.

Args:
self: Self reference - necessary to use methods within this class id_of_answer: Id of the answer

Returns:
```

[amount_of_follow_up_questions, amount_of_follow_up_comments] : Amount of follow reactions

Definition at line 1108 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.create_json_object ()[static]

```
Builds a JSON object consisting of all values which have been previously calculated

Args:
-
Returns:
```

Definition at line 1241 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.fill_left_n_top_panel_data (self)[static]

```
Fills data to the left and the top panel

Args:
self: Self representation of the class [necessary to use methods within the class itself]

Returns:
```

Definition at line 432 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.fill_misc_thread_data ()[static]

```
Retrieves the creation time stamp and the thread author from the submission

Args:
-
Returns:
```

Definition at line 414 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.fill_right_panel_data (self, id_of_thread)[static]

```
Calculates various statistics for the left panel of the page

Args:
self: Self representation of the class [necessary to use methods within the class itself]
id of thread: The id of the thread which is to be processed

Returns:
```

Definition at line 458 of file r_rest_Crawl_N_Calculate_Data.py.

def

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.get_n_write_author_information (name_of_author)[static]

```
Crawls data from the author into the mongodb

At first all previously stored data will be dropped and then the new one will be crawled.

This may be slow at some times but it enables us to give the user a better iAMA experience, because
```

```
he will immediately receive new data upon posting / requesting.

Args:

name_of_author (str): The name of the author whose data is to be crawled

Returns:
```

Definition at line 185 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.get_thread_submission (id_of_thread)[static]

```
Receives the thread information live from Reddit via the Reddit-API

Args:
    id_of_thread (str): The id of the thread whose data are to be retrieved and stored globally

Returns:
```

Definition at line 398 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.main_method (self, author_name, id_thread, un_filter_tier, un_filter_score_equals, un_filter_score_numeric, un_sorting_direction, un_sorting_type, an_filter_tier, an_filter_score_equals, an filter score numeric, an sorting direction, an sorting type)

```
Defines the main method which will be called by listening on a certain REST-Interface
Aras:
   self:
            Self representation of the class [necessary to use methods within the class itself]
   author name(str): The name of the author who currently processed threads
    id thread(str): The ID of the thread which will be searched for within the database
   un filter tier(str) : The kind of tier for which the questions will be filtered accordingly
(all / 1 / x)
    for unanswered questions
   un_filter_score_equals(str) : The kind of comparison the questions will be filtered on (eql
/ grt / lrt)
    for unanswered questions
   un filter score numeric(str): The "number" of score / upvote which will be used to filter the
questions
     (int) for unanswered questions
    un sorting direction(str): The direction the questions will be filtered after (asc / desc)
    for unanswered questions
    un sorting type(str): The type of information the questions will be filtered after
     (author, creation, score, random) for unanswered questions
   an filter tier(str) : The kind of tier for which the questions will be filtered accordingly
(all / 1 / x)
    for answered questions
   an filter score equals(str) : The kind of comparison the questions will be filtered on (eql
/ grt / lrt)
    for answered questions
    an filter score numeric(str): The "number" of score / upvote which will be used to filter the
questions
    (int) for answered questions
    an sorting direction(str): The direction the questions will be filtered after (asc / desc)
    for answered questions
    an sorting type(str): The type of information the questions will be filtered after
    (author, creation, score, random) for answered questions
Returns:
```

```
create_json_object (json): A complex json object containing

1. Information about various, thread related statistics
```

2. All (un)answered questions (& answers) sorted and filtered according to the parameters given Definition at line 97 of file r_rest_Crawl_N_Calculate_Data.py.

def

r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.prepare_unanswered_questions (self)[static]

```
Re-prepares the unanswered questions for correct display on the website

It is necessary to re-prepare and strip down information from the questions.

If we would not do this there would be huge overhead in JSON - rest-transfer..

(i.E. the website does not flags like "answered_by_host" == true, etc..)

Args:

self: Self reference - necessary to use methods within this class

Returns:
```

Definition at line 1152 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.sort_n_filter_questions (questions_to_be_sorted, filter_tier, filter_score_equals, filter_score_numeric, sorting_direction, sorting_type)[static]

```
Sorts and filters given question lists depending on parameters received via REST call

Args:
    questions to be sorted (list): Contains all questions which will be processed later on
    filter_tier (str): Contains the information, which questions, depending on the tier, will be
sorted out

(all / 1 / X)
    filter_score_equals(str): Contains the information to filter a tier depending on a special score

(eql [equal] / grt [greather than] / lrt [lesser than])
    filter_score_numeric(str): The upvote score which will be used for filtering

    sorting_direction(str): The direction which will be used for sorting the questions

(asc [ascending] / des [descending])
    sorting_type(str): The kind of type which will be used for sorting

(author / creation / score / random)

Returns:
```

Definition at line 891 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.test_calculated_values ()[static]

```
This method is for debugging purpose only. It shows if all values have been calculated the correct way.

Args:
-
Returns:
```

-

Definition at line 1208 of file r_rest_Crawl_N_Calculate_Data.py.

def r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Calculate_Data.uprint (objects, sep = ' ', end = '\n', file = sys.stdout)[static]

```
This method is also for debugging purpose only. It helps printing out questions which can not be printed out
the normal way because of errors displaying unicode characters (Windows has some problems with it...)

Args:
*objects(object): The kind of object, which will be used for printing sep(str): The seperator to seperated the printed text end(str): Defines whenever the printing should stop file(object): Defines where to print that object to

Returns:
```

Definition at line 1182 of file r_rest_Crawl_N_Calculate_Data.py.

The documentation for this class was generated from the following file:

• r_rest_Crawl_N_Calculate_Data.py

r_rest_Login_Behaviour.r_rest_Login_Behaviour Class Reference

Static Public Member Functions

- def go to login page ()
- def sign_in_with_returned_key (sign_key)

Detailed Description

Definition at line 28 of file r_rest_Login_Behaviour.py.

Member Function Documentation

def r_rest_Login_Behaviour.r_rest_Login_Behaviour.go_to_login_page () [static]

```
Whenever the REST - service gets initially started this method will be executed

This method opens an authentification webpage, which will redirect to the route
'/authorize_callback/' where the sign in key will be getting extracted and logon / posting
behaviour
will be received

Args:
-
Returns:
```

Definition at line 31 of file r_rest_Login_Behaviour.py.

def r_rest_Login_Behaviour.r_rest_Login_Behaviour.sign_in_with_returned_key (sign_key)[static]

```
Logs on the user to reddit via using the transmitted sign_key.

Additionally some user information gets extracted and the ability to post comments on reddit will be achieved in here

Args:
sign key (str): The key which will be extracted from the authentification url callback

Returns:
dict to return (dict): Contains the extracted username and the PRAW (r) object, which is going to be used
within 'r_rest_Post_Behaviour' - class

dict({
'username': authenticated user.name,
'r_object': r
})
```

The documentation for this class was generated from the following file:

Definition at line 49 of file r_rest_Login_Behaviour.py.

• r rest Login Behaviour.py

r_rest_Meta_Logger.r_rest_Meta_Logger Class Reference

Public Member Functions

- def write data into file (self, given_user_name, given_usage_text)
- def logic_behaviour (self)

Static Public Member Functions

- def set global variables (username, text_of_object_clicked)
- def initially_create_file ()
- def append meta data to file ()

Detailed Description

Definition at line 22 of file r_rest_Meta_Logger.py.

Member Function Documentation

def r_rest_Meta_Logger.r_rest_Meta_Logger.append_meta_data_to_file () [static]

```
Appends meta data to the already existing text file

Whenever the text file aready exists this method will be executed and the globally stored data will be appended to it

Args:

-

Returns:
```

Definition at line 149 of file r_rest_Meta_Logger.py.

def r_rest_Meta_Logger.r_rest_Meta_Logger.initially_create_file () [static]

```
Initially creates the text file in here

Whenever the text file does not exist this method will be executed

Args:
-
Returns:
```

Definition at line 126 of file r_rest_Meta_Logger.py.

def r_rest_Meta_Logger.r_rest_Meta_Logger.logic_behaviour (self)

```
Contains the logical behaviour of the class itself

Depending of the existence of the file, a new text file will be created.

Otherwise the given meta data ewill be appended to the already existing text file

Args:
```

```
self: Self representation of the class [necessary to use methods within the class itself]
Returns:
```

Definition at line 84 of file r_rest_Meta_Logger.py.

def r_rest_Meta_Logger.r_rest_Meta_Logger.set_global_variables (username, text_of_object_clicked)[static]

```
This method makes the given parameters globally available

Because passing al those parameters into the single methods would mess up the code, I have decided to make them globally available to improve the readability of the code.

Args:

username: The name of the author who has clicked something text of object clicked (str): The text of the object which has been clicked text_of_question (str): The text of the question the user is actually processing

Returns:
```

Definition at line 51 of file r_rest_Meta_Logger.py.

def r_rest_Meta_Logger.r_rest_Meta_Logger.write_data_into_file (self, given_user_name, given_usage_text)

```
The mechanism to create text files containing usage data is defined here

Whenever the user clicks something on the webpage it will be written down into a text file. That text file will be analyzed by a seperate method, which is not yet defined here

This class works as described below:

1. It receives the submission object for the given thread_id at first.
2. Now it crawls all comments from reddit, by breaking up the hierarchy
3. It iterates over all comments. Whenever the iterated comments id matches the one the author replied to:
Post the answer of the author to reddit.

Args:

self: Self representation of the class [necessary to use methods within the class itself] given_user_name (str): The name of the author who has clicked something given_usage_text (str): The name of the behaviour he clicked / did

Returns:
```

Definition at line 24 of file r_rest_Meta_Logger.py.

The documentation for this class was generated from the following file:

• r rest Meta Logger.pv

r_rest_Post_Behaviour.r_rest_Post_Behaviour Class Reference

Static Public Member Functions

• def <u>post_comment_on_reddit</u> (r_object, iama_thread_id, id_to_reply_to, comment_text)

Detailed Description

Definition at line 10 of file r_rest_Post_Behaviour.py.

Member Function Documentation

def r_rest_Post_Behaviour.r_rest_Post_Behaviour.post_comment_on_reddit (r_object, iama_thread_id, id_to_reply_to, comment_text)[static]

```
The mechanism to reply to questions on reddit is defined here

This class works as described below:

1. It receives the submission object for the given thread_id at first.
2. Now it crawls all comments from reddit, by breaking up the hierarchy
3. It iterates over all comments. Whenever the iterated comments id matches the one the author replied to:
Post the answer of the author to reddit.

Args:

r object (PRAW.object): The prepared r-object, which is necessary to be able to post iama thread id (str): The thread the iAMA author is currently working on id to reply to (str): The question id the author is replying to comment_text (str): The text the author has been posted

Returns:
```

Definition at line 13 of file r_rest_Post_Behaviour.py.

The documentation for this class was generated from the following file:

• r_rest_Post_Behaviour.py

r_rest_Thread_Overview.r_rest_Thread_Overview Class Reference

Public Member Functions

• def get n return thread data (self, author_name)

Static Public Member Functions

• def get live thread_data (thread_id, thread_author_name)

Detailed Description

Definition at line 23 of file r_rest_Thread_Overview.py.

Member Function Documentation

def r_rest_Thread_Overview.r_rest_Thread_Overview.get_live_thread_data (thread_id,
thread_author_name)[static]

```
Retrieves fresh and live data for the given thread id and given thread author name

This method crawls thread data live from treddit, and does some minor calculation to fit the requirements
of the iAMA Experience prototype website on its left panel

Args:
thread_id (str): The id of the thread beeing processed
thread_author_name (str): The author name of the processed thread

Returns:
```

(File): The requested font file

Definition at line 26 of file r_rest_Thread_Overview.py.

def r_rest_Thread_Overview.r_rest_Thread_Overview.get_n_return_thread_data (self, author_name)

Definition at line 185 of file r_rest_Thread_Overview.py.

The documentation for this class was generated from the following file:

• r_rest_Thread_Overview.py

File Documentation

r_rest_Crawl_N_Calculate_Data.py File Reference

Classes

class r rest Crawl N Calculate Data.r rest Crawl N Calculate Data

Namespaces

r rest Crawl N Calculate Data

- <u>r rest Crawl N Calculate Data.mongo db client instance</u> = MongoClient('localhost', 27017)
- <u>r_rest_Crawl_N_Calculate_Data.mongo_db_author_fake_iama_instance</u> = mongo_db_client_instance['fake_iAMA_Reddit_Authors']
- <u>r_rest_Crawl_N_Calculate_Data.mongo_db_author_fake_iama_collection_names</u> = mongo_db_author_fake_iama_instance.collection_names()
- <u>r rest Crawl N Calculate Data.mongo db author comments instance</u> = mongo_db_client_instance['fake_iAMA_Reddit_Comments']
- r rest Crawl N Calculate Data.mongo db author comments collection = mongo_db_author_comments_instance.collection_names()
- <u>r_rest_Crawl_N_Calculate_Data.reddit_instance</u> = praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
- r rest Crawl N Calculate Data.reddit submission = None
- int r rest Crawl N Calculate Data.thread created utc = 0
- string r rest Crawl N Calculate Data.thread author = ""
- string <u>r_rest_Crawl_N_Calculate_Data.thread_title</u> = ""
- int <u>r rest Crawl N Calculate Data.thread amount questions</u> = 0
- int r rest Crawl N Calculate Data.thread amount unanswered questions = 0
- int r rest Crawl N Calculate Data.thread duration = 0
- string r_rest_Crawl_N_Calculate_Data.thread_id = ""
- int r rest Crawl N Calculate Data.thread ups = 0
- int <u>r rest Crawl N Calculate Data.thread downs</u> = 0
- int r_rest_Crawl_N_Calculate_Data.thread_time_stamp_last_question = 0
- int r rest Crawl N Calculate Data.thread average question score = 0
- int r rest Crawl N Calculate Data.thread average reaction time host = 0
- int r_rest_Crawl_N_Calculate_Data.thread_new_question_every_x_sec = 0
- int <u>r rest Crawl N Calculate Data.thread new answer every $x \sec = 0$ </u>
- int r_rest_Crawl_N_Calculate_Data.thread_amount_questions_tier_1 = 0
- int r rest Crawl N Calculate Data.thread amount questions tier x = 0
- int r_rest_Crawl_N_Calculate_Data.thread_question_top_score = 0
- int <u>r rest Crawl N Calculate Data.thread amount questioners</u> = 0
- list r rest Crawl N Calculate Data.thread unanswered questions = []
- list r_rest_Crawl_N_Calculate_Data.thread_answered_questions = []
- list <u>r rest Crawl N Calculate Data.thread answers of host</u> = []
- list <u>r_rest_Crawl_N_Calculate_Data.thread_questions_n_answers</u> = []
- list <u>r rest Crawl N Calculate Data.thread unanswered questions converted</u> = []
- list r_rest_Crawl_N_Calculate_Data.json_object_to_return = []

r_rest_Login_Behaviour.py File Reference

Classes

• class r rest Login Behaviour.r rest Login Behaviour

Namespaces

• <u>r rest Login Behaviour</u>

- <u>r_rest_Login_Behaviour.r</u> = praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
- r rest Login Behaviour.client id
- r rest Login Behaviour.client secret
- r_rest_Login_Behaviour.redirect_uri
- <u>r rest Login Behaviour.url auth</u> = r.get_authorize_url('uniqueKey', ['identity', 'submit'], True)

r_rest_Meta_Logger.py File Reference

Classes

• class <u>r rest Meta Logger.r rest Meta Logger</u>

Namespaces

• r rest Meta Logger

- <u>r_rest_Meta_Logger.timestamp</u> = None
- <u>r rest Meta Logger.user</u> = None
- <u>r rest Meta Logger.object clicked text</u> = None
- <u>r rest Meta Logger.file name csv</u> = None

r_rest_No_Cache.py File Reference

Namespaces

• r rest No Cache

Functions

• def <u>r rest No Cache.nocache</u> (view)

r_rest_Post_Behaviour.py File Reference

Classes

• class <u>r rest Post Behaviour.r rest Post Behaviour</u>

Namespaces

• <u>r rest Post Behaviour</u>

r_rest_Service.py File Reference

Namespaces

• <u>r rest Service</u>

Functions

- def <u>r rest Service.use signin key</u> ()
- def <u>r rest Service.crawl n calculate data</u> ()
- def r_rest_Service.write_meta_data_file ()
- def <u>r rest Service.post comment to reddit</u> ()
- def <u>r_rest_Service.return_font_files</u> (font_file)
- def <u>r rest Service.return js files</u> (js_file)
- def <u>r_rest_Service.return_js_map_files</u> (map_file)
- def <u>r_rest_Service.return_cs_map_files</u> (map_file)
- def <u>r rest Service.return css files</u> (css_file)
- def r_rest_Service.return_img_files (img_file)

- <u>r rest Service.app</u> = Flask(__name__, static_url_path=")
- <u>r_rest_Service.cData</u> = r_rest_Crawl_N_Calculate_Data()
- r rest Service.tOverview = r rest Thread Overview()
- <u>r_rest_Service.iLogin</u> = r_rest_Login_Behaviour()
- r_rest_Service.pBehaviour = r_rest_Post_Behaviour()
- r_rest_Service.mWriter = r_rest_Meta_Logger()
- string r rest Service.username actually logged in = ""
- string r rest Service.thread actually used = ""
- r_rest_Service.r_object = None
- r_rest_Service.methods
- r_rest_Service.host
- r_rest_Service.threaded
- r rest Service.True
- r_rest_Service.debug

r_rest_Thread_Overview.py File Reference

Classes

• class <u>r rest Thread Overview.r rest Thread Overview</u>

Namespaces

• r rest Thread Overview

- <u>r_rest_Thread_Overview.reddit_instance</u> = praw.Reddit(user_agent="University_Regensburg_iAMA_Crawler_0.001")
- r rest Thread Overview.mongo db client instance = MongoClient('localhost', 27017)
- <u>r_rest_Thread_Overview.mongo_db_author_fake_iama_instance</u> = mongo_db_client_instance['fake_iAMA_Reddit_Authors']
- <u>r_rest_Thread_Overview.mongo_db_author_fake_iama_collection_names</u> = mongo_db_author_fake_iama_instance.collection_names()

w_posting_Bot.py File Reference

Namespaces

• <u>w posting Bot</u>

Functions

- def w posting Bot.redefine r object ()
- def w posting Bot.get questions from text file ()
- def w_posting_Bot.get_random_account ()
- def w posting Bot.log in with acc data ()
- def w_posting_Bot.get_submission()
- def w posting Bot.post question ()
- def w_posting_Bot.wait_random_amount_of_seconds ()

- w posting Bot. \mathbf{r} = None
- string w posting Bot.password for all test accs = ""
- list w_posting_Bot.array_of_login_data
- int w posting Bot.amount of questions to be asked = 35
- w_posting_Bot.currently_selected_acc_data = None
- w posting Bot.currently selected submission = None
- list w_posting_Bot.questions_to_be_asked = []

Index

amount_of_questions_to_be_asked	currently_selected_acc_data
w_posting_Bot 21	w_posting_Bot 21
арр	currently_selected_submission
r_rest_Service 16	w_posting_Bot 21
append_meta_data_to_file	debug
r_rest_Meta_Logger::r_rest_Meta_Logger 32	r_rest_Service 17
array_of_login_data	file_name_csv
w_posting_Bot 21	r_rest_Meta_Logger 10
build_list_containing_q_n_a	fill_left_n_top_panel_data
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 22	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 26
calculate_down_votes	fill_misc_thread_data
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 23	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 26
calculate_question_stats	fill_right_panel_data
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 23	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 26
calculate_time_difference	get_live_thread_data
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 23	r_rest_Thread_Overview::r_rest_Thread_Overview 35
cData	get_n_return_thread_data
r_rest_Service 17	r_rest_Thread_Overview::r_rest_Thread_Overview
check_if_comment_has_been_answered_by_thread_a	35
uthor	get_n_write_author_information
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 23	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 26
checker_comment_is_not_from_thread_author	get_questions_from_text_file
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_	w_posting_Bot 20
Calculate_Data 24	get_random_account
checker_comment_is_question	w_posting_Bot 20
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_	get_submission
Calculate_Data 24	w_posting_Bot 20
checker_comment_is_question_on_tier_1	get_thread_submission
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 25	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 27
clear_variables	go_to_login_page
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 25	r_rest_Login_Behaviour::r_rest_Login_Behaviour 30
client_id	host
r_rest_Login_Behaviour 9	r_rest_Service 17
client_secret	iLogin
r_rest_Login_Behaviour 9	r_rest_Service 17
convert_epoch_to_time	initially_create_file
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_	r_rest_Meta_Logger::r_rest_Meta_Logger 32
Calculate_Data 25	json_object_to_return
count_amount_follow_up_reactions	r_rest_Crawl_N_Calculate_Data 5
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_ Calculate_Data 25	log_in_with_acc_data w_posting_Bot 20
crawl_n_calculate_data	w_posting_bot 20 logic_behaviour
r_rest_Service 13	r_rest_Meta_Logger::r_rest_Meta_Logger 32
r_test_service 15 create_json_object	main_method
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_
Calculate Data 25	Calculate Data 27

methods	thread_answers_of_host 7
r_rest_Service 17	thread_author 7
mongo_db_author_comments_collection	thread_average_question_score 7
r_rest_Crawl_N_Calculate_Data 6	thread_average_reaction_time_host 7
mongo_db_author_comments_instance	thread_created_utc 7
r_rest_Crawl_N_Calculate_Data 6	thread_downs 7
mongo_db_author_fake_iama_collection_names	thread_duration 7
r_rest_Crawl_N_Calculate_Data 6	thread_id 7
r_rest_Thread_Overview 19	thread_new_answer_every_x_sec 8
mongo_db_author_fake_iama_instance	thread_new_question_every_x_sec 8
r_rest_Crawl_N_Calculate_Data 6	thread_question_top_score 8
r_rest_Thread_Overview 19	thread_questions_n_answers 8
mongo_db_client_instance	thread_time_stamp_last_question 8
r_rest_Crawl_N_Calculate_Data 6	thread_title 8
r_rest_Thread_Overview 19	thread_unanswered_questions 8
mWriter	thread_unanswered_questions_converted 8
r_rest_Service 17	thread_ups 8
nocache	r_rest_Crawl_N_Calculate_Data.py 37
r_rest_No_Cache 11	r_rest_Crawl_N_Calculate_Data.r_rest_Crawl_N_Cal
object_clicked_text	culate_Data 22
r_rest_Meta_Logger 10	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_C
password_for_all_test_accs	alculate_Data
w_posting_Bot 21	build_list_containing_q_n_a 22
pBehaviour	calculate_down_votes 23
r_rest_Service 17	calculate_question_stats 23
post_comment_on_reddit	calculate_time_difference 23
r_rest_Post_Behaviour::r_rest_Post_Behaviour 34	check_if_comment_has_been_answered_by_thread
post_comment_to_reddit	_author 23
r_rest_Service 14	checker_comment_is_not_from_thread_author 24
post_question	checker_comment_is_question 24
w_posting_Bot 20	checker_comment_is_question_on_tier_1 25
prepare_unanswered_questions	clear_variables 25
r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_	convert_epoch_to_time 25
Calculate_Data 28	count_amount_follow_up_reactions 25
questions_to_be_asked	create_json_object 25
w_posting_Bot 21	fill_left_n_top_panel_data 26
r	fill_misc_thread_data 26
r_rest_Login_Behaviour 9	fill_right_panel_data 26
w_posting_Bot 21	get_n_write_author_information 26
r_object	get_thread_submission 27
r_rest_Service 17	main_method 27
r_rest_Crawl_N_Calculate_Data 5	prepare_unanswered_questions 28
json_object_to_return 5	sort_n_filter_questions 28
mongo_db_author_comments_collection 6	test_calculated_values 28
mongo_db_author_comments_instance 6	uprint 29
mongo_db_author_fake_iama_collection_names	r_rest_Login_Behaviour 9
6	client_id 9
mongo_db_author_fake_iama_instance 6	client_secret 9
mongo_db_client_instance 6	r 9
reddit_instance 6	redirect_uri 9
reddit_submission 6	url_auth 9
thread_amount_questioners 6	r_rest_Login_Behaviour.py 38
thread_amount_questions 6	r_rest_Login_Behaviour.r_rest_Login_Behaviour 30
thread_amount_questions_tier_1 6	r_rest_Login_Behaviour::r_rest_Login_Behaviour
thread_amount_questions_tier_x 7	go_to_login_page 30
thread_amount_unanswered_questions 7	sign_in_with_returned_key 30
thread answered questions 7	r rest Meta Logger 10

file_name_csv 10	get_n_return_thread_data 35
object_clicked_text 10	reddit_instance
timestamp 10	r_rest_Crawl_N_Calculate_Data 6
user 10	r_rest_Thread_Overview 19
r_rest_Meta_Logger.py 39	reddit_submission
r_rest_Meta_Logger.r_rest_Meta_Logger 32	r_rest_Crawl_N_Calculate_Data 6
r_rest_Meta_Logger::r_rest_Meta_Logger	redefine_r_object
append_meta_data_to_file 32	w_posting_Bot 20
initially_create_file 32	redirect_uri
logic_behaviour 32	r_rest_Login_Behaviour 9
set_global_variables 33	return_cs_map_files
write_data_into_file 33	r_rest_Service 15
r_rest_No_Cache 11	return_css_files
nocache 11	r_rest_Service 15
r_rest_No_Cache.py 40	return_font_files
r_rest_Post_Behaviour 12	r_rest_Service 15
r_rest_Post_Behaviour.py 41	return_img_files
r_rest_Post_Behaviour.r_rest_Post_Behaviour 34	r_rest_Service 15
r_rest_Post_Behaviour::r_rest_Post_Behaviour	return_js_files
post_comment_on_reddit 34	r_rest_Service 15
r_rest_Service 13	return_js_map_files
app 16	r_rest_Service 16
cData 17	set_global_variables
crawl_n_calculate_data 13	r_rest_Meta_Logger::r_rest_Meta_Logger 33
debug 17	sign_in_with_returned_key
host 17	r_rest_Login_Behaviour::r_rest_Login_Behaviour
iLogin 17	30
methods 17	sort_n_filter_questions
mWriter 17	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_
pBehaviour 17	Calculate_Data 28
post_comment_to_reddit 14	test_calculated_values
r_object 17	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_
return_cs_map_files 15	Calculate_Data 28
return_css_files 15	thread_actually_used
return_font_files 15	r_rest_Service 17
return_img_files 15	thread_amount_questioners
return_js_files 15	r_rest_Crawl_N_Calculate_Data 6
return_js_map_files 16	thread_amount_questions
thread_actually_used 17	r_rest_Crawl_N_Calculate_Data 6
threaded 17	thread_amount_questions_tier_1
tOverview 17	r_rest_Crawl_N_Calculate_Data 6
True 18	thread_amount_questions_tier_x
use_signin_key 16	r_rest_Crawl_N_Calculate_Data 7
username_actually_logged_in 18	thread_amount_unanswered_questions
write_meta_data_file 16	r_rest_Crawl_N_Calculate_Data 7
r_rest_Service.py 42	thread_answered_questions
r_rest_Thread_Overview 19	r_rest_Crawl_N_Calculate_Data 7
mongo_db_author_fake_iama_collection_names	thread_answers_of_host
19	r_rest_Crawl_N_Calculate_Data 7
mongo_db_author_fake_iama_instance 19	thread_author
mongo_db_client_instance 19	r_rest_Crawl_N_Calculate_Data 7
reddit_instance 19	thread_average_question_score
r_rest_Thread_Overview.py 43	r_rest_Crawl_N_Calculate_Data 7
r_rest_Thread_Overview.r_rest_Thread_Overview	thread_average_reaction_time_host
35	r_rest_Crawl_N_Calculate_Data 7
r_rest_Thread_Overview::r_rest_Thread_Overview	thread_created_utc
get_live_thread_data 35	r_rest_Crawl_N_Calculate_Data 7

thread_downs	r_rest_Crawl_N_Calculate_Data::r_rest_Crawl_N_
r_rest_Crawl_N_Calculate_Data 7	Calculate_Data 29
thread_duration	url_auth
r_rest_Crawl_N_Calculate_Data 7	r_rest_Login_Behaviour 9
thread_id	use_signin_key
r_rest_Crawl_N_Calculate_Data 7	r_rest_Service 16
thread_new_answer_every_x_sec	user
r_rest_Crawl_N_Calculate_Data 8	r_rest_Meta_Logger 10
thread_new_question_every_x_sec	username_actually_logged_in
r_rest_Crawl_N_Calculate_Data 8	r_rest_Service 18
thread_question_top_score	w_posting_Bot 20
r_rest_Crawl_N_Calculate_Data 8	amount_of_questions_to_be_asked 21
thread_questions_n_answers	array_of_login_data 21
r_rest_Crawl_N_Calculate_Data 8	currently_selected_acc_data 21
thread_time_stamp_last_question	currently_selected_submission 21
r_rest_Crawl_N_Calculate_Data 8	get_questions_from_text_file 20
thread_title	get_random_account 20
r_rest_Crawl_N_Calculate_Data 8	get_submission 20
thread_unanswered_questions	log_in_with_acc_data 20
r_rest_Crawl_N_Calculate_Data 8	password_for_all_test_accs 21
thread_unanswered_questions_converte	$\mathbf{r} = \mathbf{r}$
r_rest_Crawl_N_Calculate_Data 8	questions_to_be_asked 21
thread_ups	r 21
r_rest_Crawl_N_Calculate_Data 8	redefine_r_object 20
threaded	wait_random_amount_of_seconds 21
r_rest_Service 17	w_posting_Bot.py 44
timestamp	wait_random_amount_of_seconds
r_rest_Meta_Logger 10	w_posting_Bot 21
tOverview	write_data_into_file
r_rest_Service 17	r_rest_Meta_Logger::r_rest_Meta_Logger 33
True	write_meta_data_file
r_rest_Service 18	r_rest_Service 16
uprint	