
thutils Documentation

Release

Author

January 26, 2016

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Contents:

thutils package

1.1 Submodules

1.2 thutils.binary_writer module

@author: Tsuyoshi Hombashi

```
class thutils.binary_writer.BinaryWriter (io_size_byte=65536, byte_continuity=30)
```

```
    get_write_binary_data (size_byte)
```

```
    write_binary (file_path, write_size_byte, permission='-rw-r--r--')
```

1.3 thutils.cache module

@author: Tsuyoshi Hombashi

```
class thutils.cache.CommandCache
```

```
    cache_lifetime_sec = 0
```

```
    classmethod clear ()
```

```
    classmethod execute (command, suffix='')
```

```
    classmethod initialize ()
```

```
class thutils.cache.memoize (function)
```

1.4 thutils.common module

@author: Tsuyoshi Hombashi

```
class thutils.common.BaseObject
```

```
    Bases: object
```

```
    debug (message='')
```

```
    to_string ()
```

```
class thutils.common.MinMaxObject
    Bases: thutils.common.BaseObject

    average()

    diff()

    max_value

    min_value

    update(value)

exception thutils.common.NotInstallError
    Bases: exceptions.Exception

thutils.common.bytes_to_humanreadable(byte)

thutils.common.command_to_filename(command, suffix='')

thutils.common.compare_version(lhs_version, rhs_version)
    <Major>.<Minor>.<Revision>

    Returns 0<: LHSRHS 0: LHS == RHS 0>: LHSRHS

    Return type int

thutils.common.convert_value(value)

thutils.common.debug_dict(dict_input, symbol_table, convert_func=<function dump_dict>)

thutils.common.diffItemList(item_list, remove_list)

thutils.common.dump_dict(dict_input, indent=4)

thutils.common.get_execution_command()

thutils.common.get_integer_digit(value)

thutils.common.get_list_item(input_list, index)

thutils.common.get_number_of_digit(value)

thutils.common.get_text_len(text)

thutils.common.get_var_name(var, symboltable)

thutils.common.humanreadable_to_byte(readable_size, kilo_size=1024)

    Parameters

    • str – readable_size. human readable size (bytes). e.g. 256 M

    • int – size of kilo. 1024 or 1000

    Raises ValueError

thutils.common.humanreadable_to_kb(readable_size)

thutils.common.is_empty_list_or_tuple(value)

thutils.common.is_empty_string(value)

thutils.common.is_float(value)

thutils.common.is_hex(value)

thutils.common.is_install_command(command)

thutils.common.is_integer(value)
```



```

thutils.common.is_list_or_tuple(value)
thutils.common.is_nan(value)
thutils.common.is_not_empty_list_or_tuple(value)
thutils.common.is_not_empty_string(value)

    (,
    )0True

thutils.common.removeItemFromList(item_list, item)
thutils.common.removeListFromList(input_list, remove_list)
thutils.common.safe_division(dividend, divisor)

    Returns nan: invalid arguments

    Return type float

thutils.common.sleep_wrapper(sleep_second, dry_run=False)
thutils.common.split_line_list(line_list, re_line_separator=<_sre.SRE_Pattern object>,
                                is_include_matched_line=False, is_strip=True)
thutils.common.strptime_wrapper(value)

    try: import distutils.util return bool(distutils.util.strptime(value))
    except ImportError:

thutils.common.verify_install_command(command_list)

```

1.5 thutils.data_property module

@author: Tsuyoshi Hombashi

```

class thutils.data_property.Align

    AUTO = <thutils.data_property.__AlignData instance>
    CENTER = <thutils.data_property.__AlignData instance>
    LEFT = <thutils.data_property.__AlignData instance>
    RIGHT = <thutils.data_property.__AlignData instance>

class thutils.data_property.ColumnDataPeroperty
    Bases: thutils.common.BaseObject
    align
    decimal_places
    padding_len
    typecode
    update_body(prop)
    update_header(prop)
    update_padding_len(padding_len)

```

```
class thutils.data_property.DataPeroperty (data)
    Bases: thutils.common.BaseObject

    additional_format_len
    align
    data
    decimal_places
    integer_digits
    str_len
    type_format
    typecode

class thutils.data_property.PropertyExtractor

    classmethod extract_column_property_list (header_list, data_matrix)
    classmethod extract_data_property_matrix (data_matrix)
    static get_additional_format_len (data)
    classmethod get_align_from_typecode (typecode)
    static get_base_float_len (integer_digits, decimal_places)

class thutils.data_property.Typecode

    FLOAT = 2
    INT = 1
    NONE = 0
    STRING = 4
    classmethod get_typecode_from_bitmap (typecode_bitmap)
```

1.6 thutils.environment module

@author: Tsuyoshi Hombashi

```
class thutils.environment.EnvironmentInfo

    EKN_DateTime = 'Date Time'
    EKN_PlatformMachine = 'Platform Machine'
    EKN_PlatformNode = 'Platform Node'
    EKN_PlatformProcessor = 'Platform Processor'
    EKN_PlatformRelease = 'Platform Release'
    EKN_PlatformSystem = 'Platform System'
    EKN_PlatformVersion = 'Platform Version'
    EKN_ProgramVersion = 'Program Version'
```

```

EKN_PythonVersion = 'Python Version'
KN_DistributionName = 'Distribution Name'
KN_DistributionVersion = 'Distribution Version'
classmethod getGeneralInfoDict ()
classmethod getGeneralInfoMatrix ()

```

1.7 thutils.gfile module

@author: Tsuyoshi Hombashi

```

exception thutils.gfile.EmptyFileError
    Bases: exceptions.Exception

```

```

class thutils.gfile.FileManager

```

```

classmethod chmod (path, permission_text)

    Parameters permission_text (str) – “ls -l” style permission string. e.g. -rw-r--r--
classmethod copy_file (src_path, dst_path)
classmethod initialize (dry_run)
classmethod make_directory (dir_path, force=False)
classmethod moveFile (src_path, dst_path)
classmethod removeMatchDirectory (search_dir_path, re_target_list)
classmethod removeMatchFileRecursively (search_dir_path, re_remove_list)
classmethod remove_directory (path)
classmethod remove_file (path)
classmethod remove_object (path)
classmethod rename (src_path, dst_path)
classmethod touch (touch_path)

```

```

exception thutils.gfile.FileNotFoundError
    Bases: exceptions.Exception

```

```

class thutils.gfile.FileType

```

```

DIRECTORY = 2
FILE = 1
LINK = 3

```

```

class thutils.gfile.FileTypeChecker

```

```

class FileType

    BINARY = 'data'

```

```
    TEXT = 'ASCII text'

    classmethod FileTypeChecker.get_file_type(file_path)
    classmethod FileTypeChecker.is_text_file(file_path)

exception thutils.gfile.InvalidFilePathError
    Bases: exceptions.Exception

exception thutils.gfile.NullPathError
    Bases: exceptions.Exception

thutils.gfile.check_file_existence(path)

    Returns FileType
    Return type int
    Raises

        • InvalidFilePathError –
        • FileNotFoundError –
        • RuntimeError –

thutils.gfile.findDirectory(search_root_dir_path, re_pattern, find_count=-1)
thutils.gfile.findFile(search_root_dir_path, re_pattern_text)
thutils.gfile.findFileAll(search_root_dir_path, check_func, re_pattern_text,
                           find_count=9223372036854775807)
thutils.gfile.parseLsPermissionText(permission_text)
    parse “ls -l” style permission text: e.g. -rw-r--r--
thutils.gfile.parsePermission3Char(permission)
    ‘rwx’ permission 8

    Returns
    Return type int

thutils.gfile.replace_symbol(file_name, replacement_text='')
thutils.gfile.sanitize_file_name(path, replacement_text='')
thutils.gfile.validate_path(input_path)
```

1.8 thutils.gtime module

@author: Tsuyoshi Hombashi

```
class thutils.gtime.DateTimeRange(start_datetime, end_datetime, time_format='%Y-%m-%d
                                   %H:%M:%S')
    Bases: thutils.common.BaseObject

    discard(discard_percent)
        discard_percent / 2 [%]

    end_datetime
    equals(rhs)
    getDeltaSecond()
```

```

    getEndTimeText ()
    getOptionString ()
    getStartTimeText ()
    getTimeDelta ()
        Return value: datetime.timedelta
    isValidTimeRange ()
    isWithin (input_datetime)
    squeezeTimeRange (datetime_range)
        time inversion
    start_datetime
    to_string (joint=' - ', time_format=None)
    verifyTimeRange ()
        raise: TypeError ValueError
    widenTimeRange (datetime_range)
class thutils.gtime.Format

    DATETIME_LIST = ['%Y-%m-%d %H:%M:%S', '%Y%m%dT%H%M%S', '%Y-%m-%dT%H:%M:%S', '%Y/%m/%d %H:%M:%S']
class ISO

    DATE = '%Y-%m-%d'
    DATETIME = '%Y-%m-%d %H:%M:%S'
    TIME = '%H:%M:%S'
class Format.ISO8601

    class Basic

        DATE = '%Y%m%d'
        DATETIME = '%Y%m%dT%H%M%S'
        TIME = '%H%M%S'
class Format.ISO8601.Extended

    DATE = '%Y-%m-%d'
    DATETIME = '%Y-%m-%dT%H:%M:%S'
    TIME = '%H:%M:%S'
Format.ISO_DATETIME_LIST = ['%Y-%m-%d %H:%M:%S', '%Y%m%dT%H%M%S', '%Y-%m-%dT%H:%M:%S', '%Y/%m/%d %H:%M:%S']
Format.JST_DATE = '%Y/%m/%d'
class thutils.gtime.RegularExpression

```

```
class ISO
```

```
    DATE = '[1-2][\d]{3}-[0-1][\d]-[0-3][\d]'
```

```
    DATETIME = '[1-2][\d]{3}-[0-1][\d]-[0-3][\d] [0-2][0-9]:[0-5][0-9]:[0-5][0-9]'
```

```
    DATETIME_WITH_TZ = '[1-2][\d]{3}-[0-1][\d]-[0-3][\d] [0-2][0-9]:[0-5][0-9]:[0-5][0-9] [+][\d]{4}'
```

```
    TIME = '[0-2][0-9]:[0-5][0-9]:[0-5][0-9]'
```

```
    TIMEZONE = '[+][\d]{4}'
```

```
    YEAR = '[1-2][\d]{3}'
```

```
class thutils.gtime.TimeMeasure (message, log_level=20)
```

```
    Bases: object
```

```
    logging = <module 'logging' from '/usr/lib/python2.7/logging/__init__.pyc'>
```

```
    message
```

```
    start ()
```

```
    stop ()
```

```
thutils.gtime.convertHumanReadableToSecond (readable_time)
```

```
thutils.gtime.findValidTimeFormat (datetime_string, time_format_list)
```

```
thutils.gtime.getTimeDeltaSecond (start_datetime, end_datetime)
```

```
thutils.gtime.getTimeUnitSecondsCoefficient (unit)
```

```
thutils.gtime.is_datetime (value)
```

```
thutils.gtime.is_valid_time_format (datetime_string, time_format)
```

```
thutils.gtime.toDateTime (datetime_string, time_format, timezone='')
```

```
thutils.gtime.toDateTimeEx (datetime_string, time_format_list)
```

1.9 thutils.loader module

@author: Tsuyoshi Hombashi

required <https://pypi.python.org/pypi/voluptuous>

```
class thutils.loader.JsonLoader
```

```
    classmethod load (json_file_path, schema=None)
```

Parameters **json_file_path** (*str*) – json_file_path: path of the json file to be read
schema: voluptuous schema

Returns Dictionary storing the parse results of JSON

Return type dictionary

Raises

- **ImportError** –
- **InvalidFilePathError** –
- **FileNotFoundError** –

- **RuntimeError** –
- **ValueError** –

classmethod loads (*json_text*, *schema=None*)

Parameters

- **json_text** (*str*) – json text to be parse
- **schema** (*voluptuous.Schema*) – schema of voluptuous

Returns Dictionary storing the parse results of JSON

Return type dictionary

Raises

- **ImportError** –
- **RuntimeError** –
- **ValueError** –

1.10 thutils.logger module

@author: Tsuyoshi Hombashi

class `thutils.logger.LogLevelText`

ERROR = 'ERROR'

FATAL = 'FATAL'

INFO = 'INFO'

WARN = 'WARN'

class `thutils.logger.logger`

`classdocs`

LOG_EXTENSION = '.log'

RE_LogExtension = '\\.log\$'

classmethod clear_log ()

classmethod debug (*msg*, *caller=None*)

classmethod debug_logging_count ()

classmethod error (*msg*, *caller=None*)

classmethod exception (*exception*, *msg=''*)

classmethod fatal (*msg*, *caller=None*)

classmethod get_log ()

classmethod info (*message*, *caller=None*)

classmethod initialize (*program_filename*, *dry_run*, *print_stack_trace*, *with_no_log*, *std-out_log_level*, *file_log_level=10*, *output_dir_path='.'*)

classmethod warn (*msg*, *caller=None*)

```
classmethod write (msg, log_level, caller=None)
```

1.11 thutils.main module

@author: Tsuyoshi Hombashi

```
class thutils.main.Main (function)
```

```
KEYBOARD_INTERRUPT_FORMAT = 'Keyboard Interrupt from %s'
```

1.12 thutils.option module

@author: Tsuyoshi Hombashi

```
class thutils.option.ArgumentParserObject
```

```
    Bases: object
```

```
    wrapper class of argparse
```

```
    class GroupName
```

```
        MISC = 'Miscellaneous'
```

```
        PROFILE = 'Profile'
```

```
        SQL = 'SQL'
```

```
        TIME_RANGE = 'Time Range'
```

```
ArgumentParserObject.addMakeArgumentGroup()
```

```
ArgumentParserObject.add_argument_group(group_name)
```

```
ArgumentParserObject.add_dry_run_option()
```

```
ArgumentParserObject.add_profile_argument_group()
```

```
ArgumentParserObject.add_run_option()
```

```
ArgumentParserObject.add_sql_argument_group()
```

```
ArgumentParserObject.add_time_argument_group()
```

```
ArgumentParserObject.add_time_range_argument_group(valid_time_format_list,  
                                                    start_time_help_msg='',  
                                                    end_time_help_msg='')
```

```
ArgumentParserObject.make(version, description='', epilog='')
```

```
ArgumentParserObject.parse_args()
```

```
static ArgumentParserObject.validate_time_range_option(options,  
                                                         valid_time_format_list,  
                                                         is_check_time_inversion=True)
```

```
class thutils.option.MakeOption
```

```
    CLEAN = 'clean'
```



```
MAKE = 'make'
```

```
OVERWRITE = 'overwrite'
```

```
SKIP = 'skip'
```

```
thutils.option.getGeneralOptionList (options)
```

1.13 thutils.sqlite module

@author: Tsuyoshi Hombashi

```
exception thutils.sqlite.AttributeNotFoundError
```

```
Bases: exceptions.Exception
```

```
exception thutils.sqlite.DatabaseError
```

```
Bases: exceptions.Exception
```

```
exception thutils.sqlite.MismatchError
```

```
Bases: exceptions.Exception
```

```
exception thutils.sqlite.NullDatabaseConnectionError
```

```
Bases: exceptions.Exception
```

```
class thutils.sqlite.SqlQuery
```

```
classmethod make_datetimerange_where_list (datetime_range, start_attr_name,
                                             end_attr_name)
```

```
classmethod make_insert (table_name, insert_tuple, is_insert_many=False)
```

```
classmethod make_select (select, table, where=None, extra=None)
SQLite query
```

```
Returns SQLite query string
```

```
Return type str
```

```
classmethod make_where (key, value, operation='=')
```

```
classmethod make_where_in (key, value_list)
```

```
classmethod make_where_not_in (key, value_list)
```

```
classmethod sanitize (query_item)
```

```
classmethod to_attr_str (name, operation_query='')
```

```
classmethod to_attr_str_list (name_list, operation_query=None)
```

```
classmethod to_table_str (name)
```

```
classmethod to_value_str (value)
```

```
classmethod to_value_str_list (value_list)
```

```
class thutils.sqlite.SqliteWrapper (dry_run=False, profile=False)
```

```
Bases: object
```

```
wrapper class of sqlite3
```

```
AN_DB_CREATE_TIME = 'database_create_time'
```

```
AN_DB_NAME = 'database_name'
```

```
AN_DB_VERSION = 'database_version'
MISC_TABLE_LIST = ['table_configuration', 'database_information', 'sql_profile']
TN_DB_INFO = 'database_information'
TN_SQL_PROFILE = 'sql_profile'
TN_TABLE_CONFIG = 'table_configuration'

checkAccessPermission (valid_permission_list)

check_connection ()

    Raises NullDatabaseConnectionError – if not connected to a SQLite database file

check_database_name (expected_name)

    Raises

        • TableNotFoundError – table not found in the database

        • AttributeError – attribute not found in the database

        • MissmatchError – database name missmatch found

check_database_version (compare_version)

    Raises

        • TableNotFoundError – table not found in the database

        • AttributeError – attribute not found in the database

        • MissmatchError – database version miss match found

close ()

commit ()

connect (database_path, mode='w')

    Parameters mode (str) – “r”: read only “w”: DB “a”: DB

    Raises

        • TypeError –

            – database_path

            – mode

        • FileNotFoundError – database_path not found

        • InvalidFilePathError – database_path is invalid

        • ValueError –

            – database_path

            – mode

        • DatabaseError – file is not a valid SQLite binary file

connection

createIndex (table_name, attribute_name)

createIndexList (table_name, attribute_name_list)

create_db_info_table (db_name, db_version)
```

```

create_table (table_name, attribute_description_list)
create_table_with_data (table_name, attribute_name_list, data_matrix, index_attribute_list=())
database_path
drop_table (table_name, is_drop_existing_table=True)
dry_run
execute_insert (table_name, insert_record)
execute_insert_many (table_name, insert_record_list)
execute_select (select, table, where=None, extra=None)
getValue (select, table, where=None, extra=None)
getValueList (select, table, where=None, extra=None)
get_attribute_name_list (table_name)
get_attribute_type_list (table_name)
get_database_name ()
get_database_version ()
get_profile (get_profile_count=50)
get_table_name_list ()
get_total_changes ()
has_attribute (table_name, attribute_name)
has_attribute_list (table_name, attribute_name_list)
has_table (table_name)
is_connected ()
mode
rollback ()
verify_attribute_existence (table_name, attribute_name)

```

Raises

- **sTypeError** –
- **TableNotFoundError** –
- **AttributeNotFoundError** –

```
verify_table_existence (table_name)
```

Raises

- **TypeError** –
- **TableNotFoundError** –

```
exception thutils.sqlite.TableNotFoundError
```

```
    Bases: exceptions.Exception
```

```
thutils.sqlite.append_table (con_src, con_dst, table_name)
```

```
thutils.sqlite.connect_sqlite_database (db_path, mode, options=None)
```

```
    SQLite
```

```
thutils.sqlite.connect_sqlite_db_mem()  
thutils.sqlite.copy_table(con_src, con_dst, table_name)  
thutils.sqlite.getListFromQueryResult(result)
```

Argument Return value from a SQLite query response

Return type list

1.14 thutils.subprocwrapper module

@author: Tsuyoshi Hombashi

```
class thutils.subprocwrapper.SubprocessWrapper(dry_run=False)  
    Bases: object  
  
    dry_run  
  
    popen_command(command, std_in=None, environ=None)  
  
    run(command, ignore_error_list=())
```

1.15 thutils.syswrapper module

1.16 Module contents

```
exception thutils.NotInstallError  
    Bases: exceptions.Exception  
  
exception thutils.PermissionError  
    Bases: exceptions.Exception  
  
thutils.initialize_library(program_filename, options, output_dir_path='.')
```

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