arcache Documentation

Release 0.1

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https://github.com/manbehindthemadness/arcache

CHAPTER

ONE

DESCRIPTION

A serialized slug-cache for Python using PIL and TKinter.

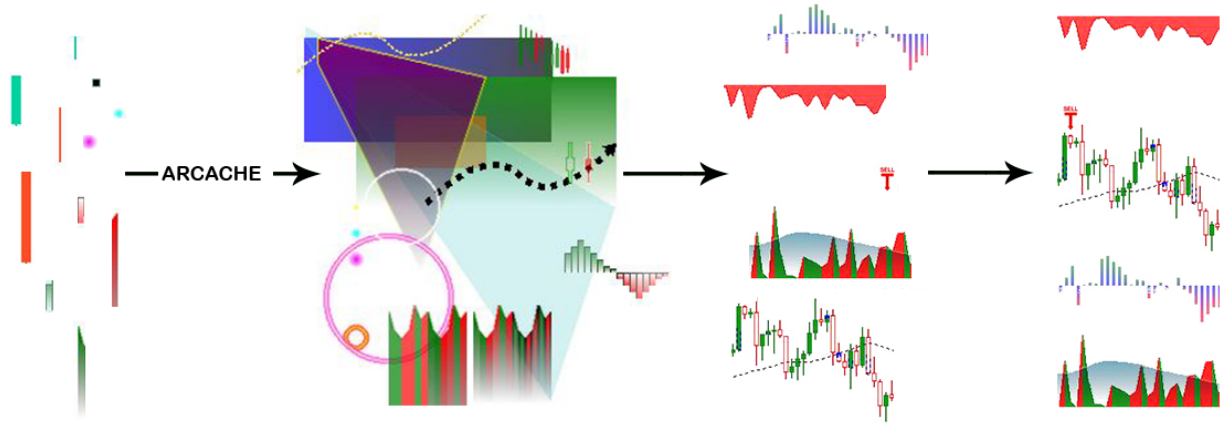
ARCache is designed to take image generation logic in the form of a callback and "slugify" the name and arguments. It will then use this to key the output into a pickled memory cache housed within an `OrderedDict()`. This allows for many variations of smaller image "constructors" to be stored for reuse when producing more complex composites.

CHAPTER

TWO

PLACEMENT

constructor -> arcache -> element -> widget -> canvas



CHAPTER

THREE

CONFIG

ARCache's configuration file is specified as an argument when either the Cache or SlugCache classes are initialized. If no file is specified defaults.ini will be used instead.

config file:

```
[cache]
cache_dir = '.imgcache'             # Images will optionally be stored and read from␣
↪here when debug_images is set to True
error_dir = 'arcache_errors'        # Images that fail to load will be place here to␣
↪allow for inspection.
preload = True                      # When set to True we will scan and update the cache␣
↪during initialization.
cache_max = 5000                    # Specified the maximum number of items the cache␣
↪will allow.
debug_images = True                 # When set to True processed images will be left in␣
↪the cache_dir for easy review.
purge_cache_on_startup = False      # When set to True the cache binary file and folder␣
↪will be removed during initialization.
```

CHAPTER

FOUR

EXAMPLES

basic usage:

```
import os
from PIL import Image
from arcache import SlugCache

cache = SlugCache(config_file=os.path.abspath(os.path.dirname(__file__)) + '/my_config.
↪ini')

def icon(file: [str, Path], fill: str, size: int) -> Image:
    """
    A working example of this can be found in tests.
    """
    file = Path(file)
    mask = Image.open(file)
    mask = mask.resize((size, size), resample=Image.ANTIALIAS)
    mask = mask.convert('L')
    image = Image.new("RGB", (size, size), fill)
    image.putalpha(mask)
    return image

def make_icon(**kwargs)
    """
    A function that will be used to create many images with various parameters.
    """
    return SlugCache.provide(icon, *[], **kwargs)

kwargs = {
    'file': 'my_icon.png',
    'fill': 'green',
    'size': 100,
    'raw': True  # Tell the cache to return a PIL.Image instead of an ImageTk.
}

image = make_icon(**kwargs)  # Can be called many times but will return from cache␣
↪instead of recomputing the icon.
image.show()
```

Keyword argument filtration:

```
args = [x1, y1, x2, y2, x3, y3, x4, y4]  # A very PIL looking set of coordinates.
kwargs = {
   'placement': {'x': 25, 'y': 50},  # As these will be unique to where the image is␣
↪placed but not to the image itself...
   'fill': 'green',
   'outline': 'blue',
   'exclude': ['placement']  # We tell the cache to ignore the placement coordinates␣
↪when keying the image.
}
image_tk = SlugCache(callback, *args, **kwargs)
```

Updating, saving, and clearing the cache contents:

```
>>> from pathlib import Path
>>> from arcache.cache import SlugCache
>>> cache = SlugCache(Path('my_config.ini'))  # Initialize the cache (This also performs␣
↪a cache.refresh; however, we show it below for the sake of the example).
>>> cache.refresh()  # This rescans the configured cache_dir folder and imports new␣
↪images.
>>> cache.save_file()  # Save the cache contents (alternatively this can be accomplished␣
↪with "cache.refresh(resave=True)").
>>> cache.clear(persistent=True)  # When persistent is set both the memory and file␣
↪caches will be cleared.
```

CHAPTER

FIVE

KWARGS

- `raw` - Toggles returning `ImageTk` *(False)* and `PIL.Image` *(True)*
- `no_cache` - Will bypass all caching operations and just return the image
- `debug` - Enables logging

CHAPTER

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RETURNS

- `-1` - Nonexistent key
-  - Attempt to load unreadable data
- `PIL.Image` - Conventional Pillow image object
- `arcache.ImageTK.ImageTk` - A slightly altered `TKinter.ImageTk` that retains the original `PIL.Image` as `self.image`

CHAPTER

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INSTALLATION

ARCache can be installed using pip:

```
pip install arcache
```

or alternatively:

```
git clone https://github.com/manbehindthemadness/arcache.git
cd arcache
python setup.py install
```

CHAPTER

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DISCLAIMER

This library is still in development, please use at your own risk and test sufficiently before using it in a production environment.

8.1 Indices and tables

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- modindex
- search