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# **gTTS Documentation**

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gTTS (*Google Text-to-Speech*), a Python library and CLI tool to interface with Google Translate's text-to-speech API. Writes spoken mp3 data to a file, a file-like object (bytestring) for further audio manipulation, or stdout. It features flexible pre-processing and tokenizing, as well as automatic retrieval of supported languages.



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## INSTALLATION

```
pip install gTTS
```

### 1.1 Command-line (gtts-cli)

After installing the package, the gtts-cli tool becomes available:

```
$ gtts-cli
```

#### 1.1.1 gtts-cli

Read <text> to mp3 format using Google Translate's Text-to-Speech API (set <text> or `--file <file>` to - for standard input)

```
gtts-cli [OPTIONS] <text>
```

#### Options

**-f, --file <file>**

Read from <file> instead of <text>.

**-o, --output <file>**

Write to <file> instead of stdout.

**-s, --slow**

Read more slowly.

**-l, --lang <lang>**

IETF language tag. Language to speak in. List documented tags with `--all`.

Default en

**-t, --tld <tld>**

Top-level domain for the Google host, i.e [https://translate.google.<tld>](https://translate.google.com)

Default com

**--nocheck**

Disable strict IETF language tag checking. Allow undocumented tags.

**--all**

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**gTTS Documentation**

Print all documented available IETF language tags and exit. Use `-tld` beforehand to use an alternate domain



**--debug**

Show debug information.

**--version**

Show the version and exit.

**Arguments****<text>**

Optional argument

**1.1.2 Examples**

List available languages:

```
$ gtts-cli --all
```

List available languages (Italian names):

```
$ gtts-cli --tld it --all
```

Read 'hello' to hello.mp3:

```
$ gtts-cli 'hello' --output hello.mp3
```

Read "c'est la vie" in French to cestlavie.mp3:

```
$ gtts-cli "c'est la vie" --lang fr --output cestlavie.mp3
```

Read " to .mp3 (in Mandarin, using google.cn):

```
$ gtts-cli " --tld cn --lang zh-cn --output .mp3
```

Read 'slow' slowly to slow.mp3:

```
$ gtts-cli 'slow' --slow --output slow.mp3
```

Read 'hello' to stdout:

```
$ gtts-cli 'hello'
```

Read stdin to hello.mp3 via &lt;text&gt; or &lt;file&gt;:

```
$ echo -n 'hello' | gtts-cli - --output hello.mp3
$ echo -n 'hello' | gtts-cli --file - --output hello.mp3
```

Read 'no check' to nocheck.mp3 without language checking:

```
$ gtts-cli 'no check' --lang zh --nocheck --ouput nocheck.mp3
```

Note: Using --nocheck can speed up execution. It exists mostly however to force a <lang> language tag that might not be documented but would work with the API, such as for specific regional sub-tags of documented tags (examples for 'en': 'en-gb', 'en-au', etc.).

### 1.1.3 Playing sound directly

You can pipe the output of `gtts-cli` into any media player that supports stdin. For example, using the `play` command from `SoX`:

```
$ gtts-cli 'hello' | play -t mp3 -
```

## 1.2 Module (gtts)

- *gTTS* (`gtts.gTTS`)
- *Languages* (`gtts.lang`)
- *Examples*
- *Playing sound directly*
- *Logging*

### 1.2.1 gTTS (`gtts.gTTS`)

```
class gtts.tts.gTTS(text, tld='com', lang='en', slow=False, lang_check=True,
                    pre_processor_funcs=[<function tone_marks>, <function end_of_line>, <function
                    abbreviations>, <function word_sub>], tokenizer_func=<bound method
                    Tokenizer.run of re.compile('(?<=\\?|.)(?<=!).(?<=).(?<=).(?<=!.[a-z])\\.|
                    |(?<!.[a-z]), |(?!\\d):|—|\\)|/\\\\n|i|/\\\\[/|/|é|\\\\/|\\.\\.\\.|\\\\(|'
                    re.IGNORECASE) from: [<function tone_marks>, <function period_comma>,
                    <function colon>,
                    <function other_punctuation>]>)
```

gTTS – Google Text-to-Speech.

An interface to Google Translate’s Text-to-Speech API.

Parameters

- **text** (*string*) – The text to be read.
- **tld** (*string*) – Top-level domain for the Google Translate host, i.e `https://translate.google.<tld>`. This is useful when `google.com` might be blocked within a network but a local or different Google host (e.g. `google.cn`) is not. Default is `com`.
- **lang** (*string, optional*) – The language (IETF language tag) to read the text in. Default is `en`.
- **slow** (*bool, optional*) – Reads text more slowly. Defaults to `False`.
- **lang\_check** (*bool, optional*) – Strictly enforce an existing lang, to catch a language error early. If set to `True`, a `ValueError` is raised if lang doesn’t exist. Setting `lang_check` to `False` skips Web requests (to validate language) and therefore speeds up instantiation. Default is `True`.

- **pre\_processor\_funcs** (*list*) – A list of zero or more functions that are called to transform (pre-process) text before tokenizing. Those functions must take a string and return a string. Defaults to:

```
[ pre_processors.tone_marks, pre_processors.end_of_line,
  pre_processors.abbreviations, pre_processors.word_sub
]
```

- **tokenizer\_func** (*callable*) – A function that takes in a string and returns a list of string (tokens). Defaults to:

```
Tokenizer([ tokenizer_cases.tone_marks, tokenizer_cases.period_comma,
            tokenizer_cases.colon, tokenizer_cases.other_punctuation
]).run
```

See also:

[Pre-processing and tokenizing](#)

Raises

- **AssertionError** – When text is None or empty; when there's nothing left to speak after pre-processing, tokenizing and cleaning.
- **ValueError** – When lang\_check is True and lang is not supported.
- **RuntimeError** – When lang\_check is True but there's an error loading the languages dictionary.

**get\_urls()**

Get TTS API request URL(s) that would be sent to the TTS API.

Returns

A list of TTS API request URLs to make.

This is particularly useful to get the list of URLs generated by gTTS but not yet fulfilled, for example to be used by an external program.

Return type list

**save(savefile)**

Do the TTS API request and write result to file.

Parameters **savefile** (*string*) – The path and file name to save the mp3 to.

Raises **gTTSError** – When there's an error with the API request.

**write\_to\_fp(fp)**

Do the TTS API request(s) and write bytes to a file-like object.

Parameters **fp** (*file object*) – Any file-like object to write the mp3 to. Raises

- **gTTSError** – When there's an error with the API request. •

**TypeError** – When fp is not a file-like object that takes bytes.

**exception** `gtts.tts.gTTSError(msg=None, **kwargs)`

Exception that uses context to present a meaningful error message

**infer\_msg**(`tts`, `rsp=None`)

Attempt to guess what went wrong by using known information (e.g. `http response`) and observed behaviour

## 1.2.2 Languages (gtts.lang)

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Note: The easiest way to get a list of available languages is to print them with `gtts-cli --all`

---

`gtts.lang.tts_langs(tld='com')`

Languages Google Text-to-Speech supports.

Parameters **tld** (*string*) – Top-level domain for the Google Translate host to fetch languages from. i.e `https://translate.google.<tld>`. Default is `com`.

Returns

A dictionary of the type { '*<lang>*': '*<name>*' }

Where *<lang>* is an IETF language tag such as *en* or *pt-br*, and *<name>* is the full English name of the language, such as *English* or *Portuguese (Brazil)*.

Return type dict

The dictionary returned combines languages from two origins:

- Languages fetched automatically from Google Translate
- Languages that are undocumented variations that were observed to work and present different dialects or accents.

## 1.2.3 Examples

Write 'hello' in English to `hello.mp3`:

```
>>> from gtts import gTTS
>>> tts = gTTS('hello', lang='en')
>>> tts.save('hello.mp3')
```

Write 'hello bonjour' in English then French to `hello_bonjour.mp3`:

```
>>> from gtts import gTTS
>>> tts_en = gTTS('hello', lang='en')
>>> tts_fr = gTTS('bonjour', lang='fr')
>>>
>>> with open('hello_bonjour.mp3', 'wb') as f:
...     tts_en.write_to_fp(f)
...     tts_fr.write_to_fp(f)
```

Instead of writing to disk, get URL for 'hello' in English:

```
>>> from gtts import gTTS >>> tts = gTTS('hello', lang='en')
>>> tts.get_urls()
['https://translate.google.com/translate_tts?ie=UTF-8&q=hello&tl=en&ttsspeed=1&
total=1&idx=0&client=tw-ob&textlen=5&tk=316070.156329']
```

## 1.2. Module (gtts)

### 1.2.4 Playing sound directly

There's quite a few libraries that do this. Write 'hello' to a file-like object to do further manipulation::

```
>>> from gtts import gTTS
>>> from io import BytesIO
>>>
>>> mp3_fp = BytesIO()
>>> tts = gTTS('hello', lang='en')
>>> tts.write_to_fp(mp3_fp)
>>>
>>> # Load `mp3_fp` as an mp3 file in
>>> # the audio library of your choice
```

Note: See [Issue #26](#) for a discussion and examples of direct playback using various methods.

Note: Starting with gTTS 2.1.0, the `gtts.tts.gTTS.get_urls` method can be used to obtain the list of generated URLs requests (without fulfilling them) which could be used for playback in another program. See [Examples](#) above.

### 1.2.5 Logging

gtts does logging using the standard Python logging module. The following loggers are available:

**gtts.tts** Logger used for the gTTS class **gtts.lang** Logger used for the lang module (language fetching) **gtts** Upstream logger for all of the above

## 1.3 Pre-processing and tokenizing

The `gtts.tokenizer` module powers the default pre-processing and tokenizing features of gTTS and provides tools to easily expand them. `gtts.tts.gTTS` takes two arguments `pre_processor_funcs` (list of functions) and `tokenizer_func` (function). See: [Pre-processing](#), [Tokenizing](#).

- *Definitions*
- *Pre-processing*
  - *Customizing & Examples*
- *Tokenizing*
  - *Customizing & Examples*
  - *Using a 3rd-party tokenizer*
- *Minimizing*
- *gtts.tokenizer module reference (gtts.tokenizer)*

### 1.3.1 Definitions

**Pre-processor:** Function that takes text and returns text. Its goal is to modify text (for example correcting pronunciation), and/or to prepare text for proper tokenization (for example ensuring spacing after certain characters).

**Tokenizer:** Function that takes text and returns it split into a list of *tokens* (strings). In the gTTS context, its goal is to cut the text into smaller segments that do not exceed the maximum character size allowed for each TTS API request, while making the speech sound natural and continuous. It does so by splitting text where speech would naturally pause (for example on “.”) while handling where it should not (for example on “10.5” or “U.S.A.”). Such rules are called *tokenizer cases*, which it takes a list of.

**Tokenizer case:** Function that defines one of the specific cases used by `gtts.tokenizer.core.Tokenizer`. More specifically, it returns a regex object that describes what to look for for a particular case. `gtts.tokenizer.core.Tokenizer` then creates its main *regex* pattern by joining all *tokenizer cases* with “|”.

### 1.3.2 Pre-processing

You can pass a list of any function to `gtts.tts.gTTS`’s `pre_processor_funcs` attribute to act as preprocessor (as long as it takes a string and returns a string).

By default, `gtts.tts.gTTS` takes a list of the following pre-processors, applied in order:

```
[ pre_processors.tone_marks, pre_processors.end_of_line,
  pre_processors.abbreviations, pre_processors.word_sub
]
```

`gtts.tokenizer.pre_processors.abbreviations(text)`

Remove periods after an abbreviation from a list of known abbreviations that can be spoken the same without that period. This prevents having to handle tokenization of that period.

---

Note: Could potentially remove the ending period of a sentence.

---



---

Note: Abbreviations that Google Translate can’t pronounce without (or even with) a period should be added as a word substitution with a `PreProcessorSub` pre-processor. Ex.: ‘Esq.’, ‘Esquire’.

---

`gtts.tokenizer.pre_processors.end_of_line(text)` Re-form words cut by end-of-line hyphens.

Remove “<hyphen><newline>”.

`gtts.tokenizer.pre_processors.tone_marks(text)` Add a space after tone-modifying punctuation.

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Because the `tone_marks` tokenizer case will split after a tone-modifying punctuation mark, make sure there's whitespace after.

```
gtts.tokenizer.pre_processors.word_sub(text)
    Word-for-word substitutions.
```

### Customizing & Examples

This module provides two classes to help build pre-processors:

- `gtts.tokenizer.core.PreProcessorRegex` (for *regex*-based replacing, as would `re.sub` use)
- `gtts.tokenizer.core.PreProcessorSub` (for word-for-word replacements).

The `run(text)` method of those objects returns the processed text.

### Speech corrections (word substitution)

The default substitutions are defined by the `gtts.tokenizer.symbols.SUB_PAIRS` list. Add a custom one by appending to it:

```
>>> from gtts.tokenizer import pre_processors
>>> import gtts.tokenizer.symbols
>>>
>>> gtts.tokenizer.symbols.SUB_PAIRS.append(
...     ('sub.', 'submarine')
... )
>>> test_text = "Have you seen the Queen's new sub.?"
>>> pre_processors.word_sub(test_text) "Have you seen the Queen's new submarine?"
```

### Abbreviations

The default abbreviations are defined by the `gtts.tokenizer.symbols.ABBREVIATIONS` list. Add a custom one to it to add a new abbreviation to remove the period from. *Note: the default list already includes an extensive list of English abbreviations that Google Translate will read even without the period.*

See `gtts.tokenizer.pre_processors` for more examples.

### 1.3.3 Tokenizing

You can pass any function to `gtts.tts.gTTS`'s `tokenizer_func` attribute to act as tokenizer (as long as it takes a string and returns a list of strings).

By default, gTTS takes the `gtts.tokenizer.core.Tokenizer`'s `gtts.tokenizer.core.Tokenizer.run()`, initialized with default *tokenizer cases*:

```
Tokenizer([ tokenizer_cases.tone_marks, tokenizer_cases.period_comma,
            tokenizer_cases.other_punctuation
        ]).run
```



The available *tokenizer cases* are as follows:

`gtts.tokenizer.tokenizer_cases.colon()`

Colon case.

Match a colon “:” only if not preceded by a digit. Mainly to prevent a cut in the middle of time notations e.g. 10:01

`gtts.tokenizer.tokenizer_cases.legacy_all_punctuation()`

Match all punctuation.

Use as only tokenizer case to mimic gTTS 1.x tokenization.

`gtts.tokenizer.tokenizer_cases.other_punctuation()`

Match other punctuation.

Match other punctuation to split on; punctuation that naturally inserts a break in speech.

`gtts.tokenizer.tokenizer_cases.period_comma()` Period and comma case.

Match if not preceded by “.<letter>” and only if followed by space. Won’t cut in the middle/after dotted abbreviations; won’t cut numbers.

---

Note: Won’t match if a dotted abbreviation ends a sentence.

---

---

Note: Won’t match the end of a sentence if not followed by a space.

---

`gtts.tokenizer.tokenizer_cases.tone_marks()`

Keep tone-modifying punctuation by matching following character.

Assumes the *tone\_marks* pre-processor was run for cases where there might not be any space after a tonemodifying punctuation mark.

## Customizing & Examples

A *tokenizer case* is a function that returns a compiled *regex* object to be used in a `re.split()` context.

`gtts.tokenizer.core.Tokenizer` takes a list of *tokenizer cases* and joins their pattern with “|” in one single pattern.

This module provides a class to help build tokenizer cases: `gtts.tokenizer.core.RegexBuilder`. See `gtts.tokenizer.core.RegexBuilder` and `gtts.tokenizer.tokenizer_cases` for examples.

### Using a 3rd-party tokenizer

Even though `gtts.tokenizer.core.Tokenizer` works well in this context, there are way more advanced tokenizers and tokenizing techniques. As long as you can restrict the length of output tokens, you can use any tokenizer you'd like, such as the ones in [NLTK](#).

#### 1.3.4 Minimizing

The Google Translate text-to-speech API accepts a maximum of 100 characters.

If after tokenization any of the tokens is larger than 100 characters, it will be split in two:

- On the last space character that is closest to, but before the 100th character;
- Between the 100th and 101st characters if there's no space.

#### 1.3.5 gtts.tokenizer module reference (`gtts.tokenizer`)

**class** `gtts.tokenizer.core.RegexBuilder(pattern_args, pattern_func, flags=0)` Builds regex using arguments passed into a pattern template.

Builds a regex object for which the pattern is made from an argument passed into a template. If more than one argument is passed (iterable), each pattern is joined by "|" (regex alternation 'or') to create a single pattern.

##### Parameters

- **pattern\_args** (*iterable*) – String element(s) to be each passed to `pattern_func` to create a regex pattern. Each element is `re.escape`'d before being passed.
- **pattern\_func** (*callable*) – A 'template' function that should take a string and return a string. It should take an element of `pattern_args` and return a valid regex pattern group string.
- **flags** – re flag(s) to compile with the regex.

##### Example

To create a simple regex that matches on the characters "a", "b", or "c", followed by a period:

```
>>> rb = RegexBuilder('abc', lambda x: "{}/\.".format(x))
```

Looking at `rb.regex` we get the following compiled regex:

```
>>> print(rb.regex)
'a\\.|b\\.|c\\.'
```

The above is fairly simple, but this class can help in writing more complex repetitive regex, making them more readable and easier to create by using existing data structures.

### Example

To match the character following the words “lorem”, “ipsum”, “meili” or “koda”:

```
>>> words = ['lorem', 'ipsum', 'meili', 'koda']
>>> rb = RegexBuilder(words, lambda x: "(?<={}).".format(x))
```

Looking at `rb.regex` we get the following compiled regex:

```
>>> print(rb.regex)
'(?<=lorem).|(?<=ipsum).|(?<=meili).|(?<=koda).'
```

**class** `gtts.tokenizer.core.PreProcessorRegex`(*search\_args*, *search\_func*, *repl*, *flags*=0) Regex-based substitution text pre-processor.

Runs a series of regex substitutions (`re.sub`) from each regex of a [gtts.tokenizer.core.RegexBuilder](#) with an extra `repl` replacement parameter.

Parameters

- **search\_args** (*iteratable*) – String element(s) to be each passed to `search_func` to create a regex pattern. Each element is `re.escape`’d before being passed.
- **search\_func** (*callable*) – A ‘template’ function that should take a string and return a string. It should take an element of `search_args` and return a valid regex search pattern string.
- **repl** (*string*) – The common replacement passed to the `sub` method for each regex. Can be a raw string (the case of a regex backreference, for example)
- **flags** – `re` flag(s) to compile with each *regex*.

### Example

Add “!” after the words “lorem” or “ipsum”, while ignoring case:

```
>>> import re
>>> words = ['lorem', 'ipsum']
>>> pp = PreProcessorRegex(words,
...                         lambda x: "{()}" .format(x), r'\1!',
...                         re.IGNORECASE)
```

In this case, the regex is a group and the replacement uses its backreference `\1` (as a raw string). Looking at `pp` we get the following list of search/replacement pairs:

```
>>> print(pp)
(re.compile('(lorem)', re.IGNORECASE), repl='{!'),
(re.compile('(ipsum)', re.IGNORECASE), repl='{!')
```

It can then be run on any string of text:

```
>>> pp.run("LOREM ipSuM")
"LOREM! ipSuM!"
```

See [gtts.tokenizer.pre\\_processors](#) for more examples.

**run(text)**

Run each regex substitution on text.

Parameters **text** (*string*) – the input text.

Returns text after all substitutions have been sequentially applied.

Return type string

**class** gtts.tokenizer.core.**PreProcessorSub**(*sub\_pairs, ignore\_case=True*)

Simple substitution text preprocessor.

Performs string-for-string substitution from list a find/replace pairs. It abstracts [gtts.tokenizer.core.PreProcessorRegex](#) with a default simple substitution regex.

Parameters

- **sub\_pairs** (*list*) – A list of tuples of the style (<search str>, <replace str>)
- **ignore\_case** (*bool*) – Ignore case during search. Defaults to True.

**Example**

Replace all occurrences of “Mac” to “PC” and “Firefox” to “Chrome”:

```
>>> sub_pairs = [('Mac', 'PC'), ('Firefox', 'Chrome')]
>>> pp = PreProcessorSub(sub_pairs)
```

Looking at the pp, we get the following list of search (regex)/replacement pairs:

```
>>> print(pp)
(re.compile('Mac', re.IGNORECASE), repl='PC'),
(re.compile('Firefox', re.IGNORECASE), repl='Chrome')
```

It can then be run on any string of text:

```
>>> pp.run("I use firefox on my mac")
"I use Chrome on my PC"
```

See [gtts.tokenizer.pre\\_processors](#) for more examples.

**run(text)**

Run each substitution on text.

Parameters **text** (*string*) – the input text.

Returns text after all substitutions have been sequentially applied.

Return type string

**class** gtts.tokenizer.core.**Tokenizer**(*regex\_funcs, flags=<RegexFlag.IGNORECASE: 2>*) An extensible but simple generic rule-based tokenizer.

A generic and simple string tokenizer that takes a list of functions (called *tokenizer cases*) returning regex objects and joins them by “|” (regex alternation ‘or’) to create a single regex to use with the standard regex. `split()` function.

`regex_funcs` is a list of any function that can return a regex (from `re.compile()`) object, such as a [gTTS.tokenizer.core.RegexBuilder](#) instance (and its `regex` attribute).

See the [gTTS.tokenizer.tokenizer\\_cases](#) module for examples.

#### Parameters

- **regex\_funcs** (*list*) – List of compiled regex objects. Each functions’s pattern will be joined into a single pattern and compiled.
- **flags** – re flag(s) to compile with the final regex. Defaults to `re.IGNORECASE`

---

Note: When the regex objects obtained from `regex_funcs` are joined, their individual re flags are ignored in favour of flags.

---

Raises **TypeError** – When an element of `regex_funcs` is not a function, or a function that does not return a compiled regex object.

Warning: Joined regex patterns can easily interfere with one another in unexpected ways. It is recommended that each tokenizer case operate on distinct or non-overlapping chracters/sets of characters (For

example, a tokenizer case for the period (".") should also handle not matching/cutting on decimals, instead of making that a separate tokenizer case).

### Example

A tokenizer with a two simple case (*Note: these are bad cases to tokenize on, this is simply a usage example*):

```
>>> import re, RegexBuilder
>>>
>>> def case1():
...     return re.compile("\.") >>>
>>> def case2():
...     return RegexBuilder('abc', lambda x: "{}/\.".format(x)).regex >>>
>>> t = Tokenizer([case1, case2])
```

Looking at case1().pattern, we get:

```
>>> print(case1().pattern)
'\.'
```

Looking at case2().pattern, we get:

```
>>> print(case2().pattern)
'a\.|b\.|c\.'
```

Finally, looking at t, we get them combined:

```
>>> print(t)
're.compile('\.|a\.|b\.|c\.', re.IGNORECASE) from: [<function case1 at 0x10bbcd08>, <function case2 at 0x10b5c5e18>]'
```

It can then be run on any string of text:

```
>>> t.run("Hello, my name is Linda a. Call me Lin, b. I'm your friend") ['Hello', ' my name is Linda ', ' Call me Lin', ' ', 'I'm your friend']
```

### run(text)

Tokenize *text*.

Parameters **text** (*string*) – the input text to tokenize.

Returns A list of strings (token) split according to the tokenizer cases.

Return type list

symbols.ABBREVIATIONS = ['dr', 'jr', 'mr', 'mrs', 'ms', 'msgr', 'prof', 'sr', 'st'] symbols.SUB\_PAIRS = [('Esq.', 'Esquire')]

symbols.ALL\_PUNC = '?!.,i(){}&...;--\n' symbols.TONE\_MARKS = '?!'

## 1.3. Pre-processing and tokenizing

## 1.4 License

The MIT License (MIT)

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## 1.5 Contributing

### 1.5.1 Reporting Issues

On the Github [issues](#) page. Thanks!

### 1.5.2 Submitting Patches

1. Fork. Follow [PEP 8](#)!
2. Write/Update tests (see below).
3. Document. Docstrings follow the [Google Python Style Guide](#) (docs by [Sphinx](#)). You can ‘test’ documentation:

```
$ pip install .[docs]
$ cd docs && make html # generated in docs/_build/html/
```

4. Open Pull Request. To the master branch.
5. Changelog. This project uses [towncrier](#) for managing the changelog. Please consider creating one or more ‘news fragment’ in the /news/ directory and adding them to your PR, in the style of <issue\_or\_pr\_number>.<type> where ‘type’ is one of: ‘feature’, ‘bugfix’, ‘doc’, ‘removal’ or ‘misc’.

See [towncrier](#) (New Fragments) for more details. Example:

```
$ echo 'Fixed a thing!' > gtts/news/1234.bugfix
```

---

Note:

Please don’t hesitate to contribute! While good tests, docs and structure are encouraged, I do welcome great ideas over absolute conformity to the above!

Thanks!

### 1.5.3 Testing

Testing is done with the unittest framework.

As a rule, the file `./tests/test_<module>.py` file tests the `<module>` module.

To run all tests (testing only language 'en' and generating an html coverage report in `gtts/htmlcov/`):

```
$ pip install .[tests]
$ TEST_LANGS=en pytest -v -s gtts/ --cov=gtts --cov-report=html
```

## 1.6 Changelog

### 1.6.1 2.1.1 (2020-01-25)

#### Bugfixes

- Debug mode now uses a copy of `locals()` to prevent `RuntimeError` ([#213](#))

### 1.6.2 2.1.0 (2020-01-01)

#### Features

- The `gtts` module
  - Added the ability to customize the Google Translate URL hostname. This is useful when `google.com` might be blocked within a network but a local or different Google host (e.g. `google.cn`) is not ([#143](#), [#203](#)):
    - \* New `gTTS()` parameter `tld` to specify the top-level domain to use for the Google hostname, i.e `https://translate.google.<tld>` (default: `com`).
    - \* Languages are also now fetched using the same customized hostname.
  - Pre-generated TTS API request URLs can now be obtained instead of writing an mp3 file to disk (for example to be used in an external program):
    - \* New `get_urls()` method returns the list of URLs generated by `gTTS`, which can be used in lieu of `write_to_fp()` or `save()`.
- The `gtts-cli` command-line tool
  - New `--tld` option to match the new `gtts` customizable hostname ([#200](#), [#207](#))
- Other
  - Added Python 3.8 support ([#204](#))



## 1.6. Changelog

### Bugfixes

- Changed default word-for-word pre-processor (('M.', 'Monsieur')) which would substitute any 'm.' for 'monsieur' (e.g. 'them.' became 'themonsieur') (#197)

### Improved Documentation

- Added examples for newer features (#205, #207)

### Misc

- #204, #205, #207

## 1.6.3 2.0.4 (2019-08-29)

### Features

- gTTS is now built as a wheel package (Python 2 & 3) (#181)

### Improved Documentation

- Fixed bad example in docs (#163, #166)

### Misc

- #164, #171, #173, #185

## 1.6.4 2.0.3 (2018-12-15)

### Features

- Added new tokenizer case for ':' preventing cut in the middle of a time notation (#135)

### Misc

- #159

## 1.6.5 2.0.2 (2018-12-09)

### Features

- Added Python 3.7 support, modernization of packaging, testing and CI (#126)

### Bugfixes

---

## gTTS Documentation

- Fixed language retrieval/validation broken from new Google Translate page ([#156](#))

### 1.6.6 2.0.1 (2018-06-20)

#### Bugfixes

- Fixed an UnicodeDecodeError when installing gTTS if system locale was not utf-8 ([#120](#))

#### Improved Documentation

- Added *Pre-processing and tokenizing > Minimizing* section about the API's 100 characters limit and how larger tokens are handled ([#121](#))

#### Misc

- [#122](#)

### 1.6.7 2.0.0 (2018-04-30)

([#108](#))

#### Features

- The gtts module
  - New logger ("gtts") replaces all occurrences of print()
  - Languages list is now obtained automatically (gtts.lang) ([#91](#), [#94](#), [#106](#))
  - Added a curated list of language sub-tags that have been observed to provide different dialects or accents (e.g. "en-gb", "fr-ca")
  - New gTTS() parameter lang\_check to disable language checking.
  - gTTS() now delegates the text tokenizing to the API request methods (i.e. write\_to\_fp(), save()), allowing gTTS instances to be modified/reused
  - Rewrote tokenizing and added pre-processing (see below)
  - New gTTS() parameters pre\_processor\_funcs and tokenizer\_func to configure preprocessing and tokenizing (or use a 3rd party tokenizer)
  - Error handling:
    - \* Added new exception gTTSError raised on API request errors. It attempts to guess what went wrong based on known information and observed behaviour ([#60](#), [#106](#))
    - \* gTTS.write\_to\_fp() and gTTS.save() also raise gTTSError on *gtts\_token* error
    - \* gTTS.write\_to\_fp() raises TypeError when fp is not a file-like object or one that doesn't take bytes
    - \* gTTS() raises ValueError on unsupported languages (and lang\_check is True)

## 1.6. Changelog

- \* More fine-grained error handling throughout (e.g. *request failed* vs. *request successful with a bad response*)
- Tokenizer (and new pre-processors):
  - Rewrote and greatly expanded tokenizer (`gtts.tokenizer`)
  - Smarter token ‘cleaning’ that will remove tokens that only contain characters that can’t be spoken (i.e. punctuation and whitespace)
  - Decoupled token minimizing from tokenizing, making the latter usable in other contexts
  - New flexible speech-centric text pre-processing
  - New flexible full-featured regex-based tokenizer (`gtts.tokenizer.core.Tokenizer`)
  - New `RegexBuilder`, `PreProcessorRegex` and `PreProcessorSub` classes to make writing regex-powered text *pre-processors* and *tokenizer cases* easier
  - Pre-processors:
    - \* Re-form words cut by end-of-line hyphens
    - \* Remove periods after a (customizable) list of known abbreviations (e.g. “jr”, “sr”, “dr”) that can be spoken the same without a period
    - \* Perform speech corrections by doing word-for-word replacements from a (customizable) list of tuples
  - Tokenizing:
    - \* Keep punctuation that modify the inflection of speech (e.g. “?”, “!”)
    - \* Don’t split in the middle of numbers (e.g. “10.5”, “20,000,000”) (#101)
    - \* Don’t split on “dotted” abbreviations and acronyms (e.g. “U.S.A”)
    - \* Added Chinese comma (“”), ellipsis (“...”) to punctuation list to tokenize on (#86)
- The `gtts-cli` command-line tool
  - Rewrote cli as first-class citizen module (`gtts.cli`), powered by `Click`
  - Windows support using *setuptools’s* `entry_points`
  - Better support for Unicode I/O in Python 2
  - All arguments are now pre-validated
  - New `--nocheck` flag to skip language pre-checking
  - New `--all` flag to list all available languages
  - Either the `--file` option or the `<text>` argument can be set to “-” to read from stdin
  - The `--debug` flag uses logging and doesn’t pollute stdout anymore

## Bugfixes

- `_minimize()`: Fixed an infinite recursion loop that would occur when a token started with the minimizing delimiter (i.e. a space) (#86)
- `_minimize()`: Handle the case where a token of more than 100 characters did not contain a space (e.g. in

---

## gTTS Documentation

Chinese).

- Fixed an issue that fused multiline text together if the total number of characters was less than 100
- Fixed gtts-cli Unicode errors in Python 2.7 (famous last words) ([#78](#), [#93](#), [#96](#))

## Deprecations and Removals

- Dropped Python 3.3 support
- Removed debug parameter of gTTS (in favour of logger)
- gtts-cli: Changed long option name of -o to --output instead of --destination
- gTTS() will raise a ValueError rather than an AssertionError on unsupported language

## Improved Documentation

- Rewrote all documentation files as reStructuredText
- Comprehensive documentation written for Sphinx, published to <http://gtts.readthedocs.io>
- Changelog built with towncrier

## Misc

- Major test re-work
- Language tests can read a TEST\_LANGS environment variable so not all language tests are run every time.
- Added AppVeyor CI for Windows
- PEP 8 compliance

## 1.6.8 1.2.2 (2017-08-15)

## Misc

- Update LICENCE, add to manifest ([#77](#))

## 1.6. Changelog

## 1.6.9 1.2.1 (2017-08-02)

### Features

- Add Unicode punctuation to the tokenizer (such as for Chinese and Japanese) (#75)

### Bugfixes

- Fix > 100 characters non-ASCII split, unicode() for Python 2 (#71, #73, #75)

## 1.6.10 1.2.0 (2017-04-15)

### Features

- Option for slower read speed (slow=True for gTTS(), --slow for gtts-cli) (#40, #41, #64, #67)
- System proxy settings are passed transparently to all http requests (#45, #68)
- Silence SSL warnings from urllib3 (#69)

### Bugfixes

- The text to read is now cut in proper chunks in Python 2 unicode. This broke reading for many languages such as Russian.
- Disabled SSL verify on http requests to accommodate certain firewalls and proxies.
- Better Python 2/3 support in general (#9, #48, #68)

### Deprecations and Removals

- 'pt-br' : 'Portuguese (Brazil)' (it was the same as 'pt' and not Brazilian) (#69)

## 1.6.11 1.1.8 (2017-01-15)

### Features

- Added stdin support via the '-' text argument to gtts-cli (#56)

## 1.6.12 1.1.7 (2016-12-14)

### Features

- Added utf-8 support to gtts-cli (#52)

## 1.6.13 1.1.6 (2016-07-20)

### Features

- Added 'bn' : 'Bengali' (#39, #44)

## Deprecations and Removals

- ‘ht’ : ‘Haitian Creole’ (removed by Google) ([#43](#))

### 1.6.14 1.1.5 (2016-05-13)

#### Bugfixes

- Fixed HTTP 403s by updating the client argument to reflect new API usage ([#32](#), [#33](#))

### 1.6.15 1.1.4 (2016-02-22)

#### Features

- Spun-off token calculation to [gTTS-Token](#) ([#23](#), [#29](#))

### 1.6.16 1.1.3 (2016-01-24)

#### Bugfixes

- gtts-cli works with Python 3 ([#20](#))
- Better support for non-ASCII characters ([#21](#), [#22](#))

#### Misc

- Moved out gTTS token to its own module ([#19](#))

### 1.6.17 1.1.2 (2016-01-13)

#### Features

- Added gTTS token (tk url parameter) calculation ([#14](#), [#15](#), [#17](#))

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### 1.6.18 1.0.7 (2015-10-07)

#### Features

- Added stdout support to gtts-cli, text now an argument rather than an option (#10)

### 1.6.19 1.0.6 (2015-07-30)

#### Features

- Raise an exception on bad HTTP response (4xx or 5xx) (#8)

#### Bugfixes

- Added client=t parameter for the api HTTP request (#8)

### 1.6.20 1.0.5 (2015-07-15)

#### Features

- write\_to\_fp() to write to a file-like object (#6)

### 1.6.21 1.0.4 (2015-05-11)

#### Features

- Added Languages: *zh-yue* : 'Chinese (Cantonese)', *en-uk* : 'English (United Kingdom)', *pt-br* : 'Portuguese (Brazil)', *es-es* : 'Spanish (Spain)', *es-us* : 'Spanish (United StateS)', *zh-cn* : 'Chinese (Mandarin/China)', *zh-tw* : 'Chinese (Mandarin/Taiwan)' (#4)

#### Bugfixes

- gtts-cli print version and pretty printed available languages, language codes are now case insensitive (#4)

### 1.6.22 1.0.3 (2014-11-21)

#### Features

- Added Languages: 'en-us' : 'English (United States)', 'en-au' : 'English (Australia)' (#3)

### 1.6.23 1.0.2 (2014-05-15)

#### Features

- Python 3 support

### 1.6.24 1.0.1 (2014-05-15)

#### Misc

- SemVer versioning, CI changes

### **1.6.25 1.0 (2014-05-08)**

#### **Features**

- Initial release

## **1.6. Changelog**



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