enigma

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CHAPTER

ONE

WELCOME TO ENIGMA'S DOCUMENTATION!

1.1 The Enigma Machine

Some text about the Enigma machine.

1.2 API Reference

This page contains auto-generated API reference documentation[1].

1.2.1 enigma

Submodules

enigma.__main__

Run enigma.

Module Contents

Functions

main()	Listen for keyboard input, output Enigma encoded letter immediately.

enigma.__main__.**main**()

Listen for keyboard input, output Enigma encoded letter immediately.

[1] Created with sphinx-autoapi

enigma.enigma

An Enigma machine.

Module Contents

Classes

Enigma	An Enigma machine.
Rotor	A single rotor for scrambling an input pin to a different output.

Attributes

ROTOR_LEN

enigma.enigma.**ROTOR_LEN**

class enigma.enigma.**Enigma**

An Enigma machine.

press_key(*self*, *letter_input*)

Press a key on the machine.

Parameters **letter_input** (*str*) – the key pressed

Returns the letter bulb that lights up

Return type str

step_rotors(*self*)

Step rotors forward.

Step first rotor, turning over rotors 2 and 3 if required.

class enigma.enigma.**Rotor**(*wiring*, *turnover_notch_letter*)

A single rotor for scrambling an input pin to a different output.

wire_up(*self*, *output_letter_order*)

Wire up the rotor.

Create a dict to implement the input/output wiring of the rotor pins. For example: "0": "7", "1": "17", "2": "2" :param output_letter_order: order of the 26 output pins :type output_letter_order: str

step(*self*)

Advance the rotor by one.

trace(*self*, *input_pin_pos0*)

Trace an input pin through the rotor to an output pin.

Parameters **input_pin_pos0** (*int*) – input pin from the previous component (machine or previous rotor) relative to position 0 of the rotor

Returns output pin relative to position 0 of rotor

Return type int

enigma.keyer

A Morse code keyer.

A Morse "key" is a device with a button used to encode the carrier wave with a Morse signal. Morse operators use these to produce the familiar "dits" and "dahs" of Morse code. The Keyer class converts dots and dashes into an encoded carrier waveform and plays it audibly.

Module Contents

Classes

Keyer	Convert Morse code to audio and play it.

Attributes

MORSE_DIT_FREQ
MORSE_DIT
MORSE_DAH
FREQUENCY
SAMPLE_RATE

enigma.keyer.**MORSE_DIT_FREQ = 10**

enigma.keyer.**MORSE_DIT = 1**

enigma.keyer.**MORSE_DAH = 3**

enigma.keyer.**FREQUENCY = 440**

enigma.keyer.**SAMPLE_RATE = 44100**

class enigma.keyer.**Keyer**(*morse*)

Convert Morse code to audio and play it.

create_binary_signal(*self*, *morse*)

Converts Morse code into a binary signal.

For example, ".- ." becomes "1011100001" :param morse: dot-and-dash Morse code :type morse: str :return: binary Morse code signal :rtype: np.ndarray

convert_audio(*self*)

Convert binary signal to audio.

Encode sine wave with binary signal and create playable audio. :return: 16-bit audio waveform :rtype: np.ndarray

play(*self*)

Play Morse code.

In the case of audio errors (i.e. on CI system with no sound card), catch exception and notify.

enigma.morse

A Morse code encoder and decoder.

Morse code consists of "dits", "dahs" and spaces. A dit or dah is a signal, whereas a space is an absensce of signal. A dit is one unit of Morse time (or beat) a dah is three. Each dit or dah is followed by a space of one dit. Each character is followed by a space of three dits, and words are separated by a space of seven dits.

Module Contents

Classes

Morse	Morse code encoder/decoder.

Attributes

MORSE_CODE
MORSE_CHAR_SPACE
MORSE_WORD_SPACE

enigma.morse.**MORSE_CODE**

enigma.morse.**MORSE_CHAR_SPACE**

enigma.morse.**MORSE_WORD_SPACE**

class enigma.morse.**Morse**

Morse code encoder/decoder.

encode(*self*, *text*)

Encode the input text to Morse.

Parameters **text** (*str*) – text to convert to Morse

decode(*self*, *morse*)

Decode input Morse to text.

Parameters **morse** (*str*) – input Morse code

decode_words(*self*, *morse_words*)

Decode a list of Morse words.

Parameters **morse_words** (*list*) – list of Morse words

decode_letters(*self*, *morse_letters*)

Decode a list of Morse letters.

Parameters **morse_letters** (*list*) – list of Morse letters

CHAPTER

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