Brief reference manual of the *CyGnusPlotter*

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This file describes major functions and methods. Unimportant arguments are omitted.

The first thing to do for using CyGnusPlotter on CUI:

The user should change the working directory to the CyGnusPlotter parent directory (see *component_subclasses.pdf*), and import the *cyginput* module from the *cyglib* package. More concrete examples were described in *typical_uses.pdf*.

An example in Python 3:

```
import os
os.chdir(<CyGnusPlotter path>)
from cyglib import cyginput
```

The procedure of using CyGnusPlotter:

1) Construct a CyGInput instance
2) Make requests for components to the CyGInput instance.
3) Set layout.
4) Make the eps file.

Functions to construct the CyGInput instance:

new_input(seq)

Description

Construct a new CyGInput instance.

An argument

seq

a string, DNA sequence.

import_ensembl(ens_id, exp5, exp3, exon_num="outer")

Description

Construct a new CyGInput instance from the Ensembl database.

Arguments

ens_id

a string, Ensembl ID or a gene symbol.

exp5

an integer, length of 5’ flanking sequence.

exp3

an integer, length of 3’ flanking sequence.

exon_num

a string, "outer", "inner" or other, if "outer" the numbers are displayed out of exon boxes, else if "inner" exon numbers are changed display inside exon boxes, else not displayed.

Main methods of CyGInput class:

CyGInput.accepts_request(component_type, rack_order, with_shaft=None, **item)

Description

Accept a new request for a Component instance.

Arguments

component_type

a string, "Title", "Box", "ScaleBar" and so on, specifying a type of Component. This argument is directly evaluated, then the specified Component subclass is constructed as a member object of the CyGInput instance (ref. *typical_uses.pdf* and *component_subclasses.pdf*).

rack_order

a numeric value, specifying a position order from the bottom of the diagram; if set an "auto", the rack order is specified lowest than other existing components, which are added 1; if set a method or a function, such as CyGInput.top and CyGInput.bottom, it is interpreted when positions are converted into coordinates, and is specified the return value.

with_shaft

a logical value; if true a shaft, which is a horizontal line traversing the sequence, is added, backward of the specified component.

item

keyword arguments passed to Component subclass instances, appropriate keywords should be selected corresponding to component types (ref. *component_subclasses.pdf*).

CyGInput.recalls_reservation()

Description

Recall reserved requests. Currently, it works only when plot exon boxes of a sequence from Ensembl database, in the other words, this can be used in CyGInput instance constructed by the import_ensembl function.

CyGInput.scales_layout(new_width_without_margin)

Description

Rescale the diagram width.

An argument

new_width_without_margin

a numeric value, specifying a width the diagram without lengths of margins.

CyGInput.makes_eps_file(file_path)

Description

Make an eps graphic file based on user requests.

An argument

file_path

a string, specifying a file path including the file name.

CyGInput.shows_requests()

Description

Show existing requests to the standard output.

CyGInput.accepts_cancel_request(cancel_num)

Description

Cancel one of the existing requests

An argument

cancel_num

an integer, specifying a number as the list index.

CyGInput.clips_sequence(clip_start, clip_end)

Description

Clip a partial sequence from entire sequence, and use to plot.

Arguments

clip_start

a numeric value, start position of clipping.

clip_end

a numeric value, end position of clipping.