My Project

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Class Documentation

2.1 Graph.Graph Class Reference

xyGraph constructing class
Author: Hatim Rehman
This class represents a graph object that can plot points with data contained within a list of tuples
[(x1, y1), (x2, y2), ... , (xn, yn)]

Public Member Functions

- def __init__ (self, n, data=None)

  The constructor method Takes in 3 parameters.
- def plot_point (self, coord, kwargs)

  Plot points method Takes in a coordinate to plot, with keyword args that may be used to style the coordinate.
- def plot_points (self, data=None, kwargs)

  Plot points method takes in multiple coordinates and calls the plot_point() method from its own API on each method.
- def plot_points_with_line (self, data, kwargs)

  Plot points with line method takes in multiple coordinates and calls the plot_point() method from its own API on each method.
- def plot_function (self, func, x_interval=None, kwargs)

  Plots a python function onto the graph Outputs a graph with the func parameter plotted.

Public Attributes

- **data**
- **markings**
- **scale**
- **scale_x**
- **scale_y**
- **master**
- **graph**
- **graph_height**
- **graph_width**
- **x_offset**
- **y_offset**
- **dx**
- **dy**

2.1.1 Detailed Description

xyGraph constructing class
Author: Hatim Rehman
This class represents a graph object that can plot points with data contained within a list of tuples
[(x1, y1), (x2, y2), ... , (xn, yn)]

2.1.2 Constructor & Destructor Documentation

2.1.2.1 __init__()

```
def Graph.Graph.__init__ (
              self,
              n,
              data = None )
```

The constructor method Takes in 3 parameters.

Outputs a graph with plotted data that is entered as a parameter.

Parameters

self	The object pointer.
n	The number of markings to appear on the x and y axes
data	The data to plot

2.1.3 Member Function Documentation

2.1.3.1 plot_function()

```
def Graph.Graph.plot_function (
              self,
              func,
              x_interval = None,
              kwargs )
```

Plots a python function onto the graph Outputs a graph with the func parameter plotted.

Parameters

self	The object pointer.
func	A python function that takes in a double value and returns a double value
x_interval	A list of double values that the function should pass through [x1, ...\, xn]
kwargs	Keyword arguments for Tkinter's create_circle() method

2.1.3.2 plot_point()

```
def Graph.Graph.plot_point (
              self,
              coord,
              kwargs )
```

Plot points method Takes in a coordinate to plot, with keyword args that may be used to style the coordinate.

First translates the coordinate from the cartesian system to the Canvas object coordinate system, then calls Tkinter's create_circle method on the Window object. Outputs a graph with the coord parameter plotted.

Parameters

self	The object pointer.
coord	A dictionary with the format { 'x': *value*, 'y': *value* }
kwargs	Keyword arguments for Tkinter's create_circle() method

2.1.3.3 plot_points()

```
def Graph.Graph.plot_points (
              self,
              data = None,
              kwargs )
```

Plot points method takes in multiple coordinates and calls the plot_point() method from its own API on each method.

Outputs a graph with the data parameter plotted.

Parameters

self	The object pointer.
data	A list of tuples [(x1, y1), (x2, y2), ... , (xn, yn)]
kwargs	Keyword arguments for Tkinter's create_circle() method

2.1.3.4 plot_points_with_line()

```
def Graph.Graph.plot_points_with_line (
              self,
              data,
              kwargs )
```

Plot points with line method takes in multiple coordinates and calls the plot_point() method from its own API on each method.

Then calls its private function generating method that creates a polynomial that passes through each point using the Lagrange polynomial interpolation theorem. Outputs a graph with the data parameter plotted.

Parameters

self	The object pointer.
data	A list of tuples [(x1, y1), (x2, y2), ... , (xn, yn)]
kwargs	Keyword arguments for Tkinter's create_circle() method

The documentation for this class was generated from the following file:

- Graph.py

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