Class Htree

java.lang.Object
    Htree

```
public class Htree
extends Object
```

Since:

1.0

this class create a recursive graphic image that displays on the screen.

we use the StdDraw class in edu.princeton library. this library provides a standard drawing class that uses java swing.

edu.princeton library developed by university of Princeton and provided by com.googlecode.

if you want the grayscale color use the HtreeGrayscale.java

Version:

2.0

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Field Summary

Fields

Modifier and Type	Field	Description
static int	Blue	we use this for creating a random RGB color.
static int	Green	we use this for creating a random RGB color.
static double	NumOfColor	we use this for determine how many times to change the color.
static int	order	how many time to recursion.
static Random	rand	initializing Random for random colors.
static int	Red	we use this for creating a random RGB color.

Constructor Summary

Constructors

Constructor	Description
`Htree()`	

Method Summary

All Methods | Static Methods | Concrete Methods

Modifier and Type	Method	Description
static void	`draw(int n, double x, double y, double size)`	this is our main recursive method for creating HTrees.plot an order n H-tree, centered on (x, y) of the given side length.
static void	`drawH(double x, double y, double size)`	This method is used to draw a HTree that the (x,y) is it's center.
static void	`main(String[] args)`	This is the main method.
static int	`randBlue()`	we use this method for getting a random Blue value of our color.
static int	`randGreen()`	we use this method for getting a random Green value of our color.
static int	`randRed()`	we use this method for getting a random RED value of our color.
static void	`SetCurrentColor()`	we use this method for changing the pen RGB color randomly.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Details

rand

```
public static Random rand
```

initializing Random for random colors.

Blue

```
public static int Blue
```

we use this for creating a random RGB color.

Green

```
public static int Green
```

we use this for creating a random RGB color.

Red

```
public static int Red
```

we use this for creating a random RGB color.

NumOfColor

```
public static double NumOfColor
```

we use this for determine how many times to change the color.

order

```
public static int order
```

how many time to recursion. you can change it.

Constructor Details

Htree

```
public Htree()
```

Method Details

drawH

```
public static void drawH(double x,
                         double y,
                         double size)
```

This method is used to draw a HTree that the (x,y) is it's center.

we use StdDraw static line method for creating a line from the 2 points in our x,y axis.

Parameters:

`x` - coordinates of the x-axis of the center of the HTrees.

`y` - coordinates of the y-axis of the center of the HTrees.

`size` - size of the side length of the HTrees.

draw

```
public static void draw(int n,
                        double x,
                        double y,
                        double size)
```

this is our main recursive method for creating HTrees.plot an order n H-tree, centered on (x, y) of the given side length.

we use 4 recursion line for creating HTrees in different locations.

Parameters:

`n` - order of the recursion

`x` - coordinates of the x-axis of the center of the first HTree. we use it later for determine the dimensions of the smaller HTrees.

`y` - coordinates of the y-axis of the center of the first HTree. we use it later for determine the dimensions of the smaller HTrees.

`size` - size of the side length of the HTreeS

SetCurrentColor

```
public static void SetCurrentColor()
```

we use this method for changing the pen RGB color randomly.

randRed

```
public static int randRed()
```

we use this method for getting a random RED value of our color.

Returns:

int This returns an int in range of (0-255).

randGreen

```
public static int randGreen()
```

we use this method for getting a random Green value of our color.

Returns:

int This returns an int in range of (0-255).

randBlue

```
public static int randBlue()
```

we use this method for getting a random Blue value of our color.

Returns:

int This returns an int in range of (0-255).

main

```
public static void main(String[] args)
```

This is the main method.

because our scale of the table is a 0 to 2 at the x,y axis so the center will be (1,1).

size length decided by running the program to see which size is better. but you can change it.

to change the screen resolution change the CanvasSize by using StdDraw.setCanvasSize(width,height);.

Parameters:

`args` - Unused.