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Package at.fhv.ohe.uebung1a

Class Summary

Stack

at.fhv.ohe.uebung1a

Class Stack

```
java.lang.Object
    |
    +--at.fhv.ohe.uebung1a.Stack
```

< Constructors > < Methods >

public class **Stack**
extends java.lang.Object

Constructors

Stack

`public` **`Stack`**`(int size)`

Creates a Stack Object

Parameters:

size - Size of the Stack. Must be greater than 0

Methods

isEmpty

`public boolean` **`isEmpty`**`()`

Check of Stack is Empty

Returns:

true = is Empty; false = is not Empty

isFull

```
public boolean isFull()
```

Check of Stack is full

Returns:

true = is full; false = is not full

---

pop

```
public int pop()
```

Read the top item from stack and delete it.

Returns:

Value from Top of Stack or 0 if Stack is empty

---

push

```
public boolean push(int newElement)
```

Add a new item on Stack.

Parameters:

newElement - The new item

Returns:

true = done; false = Stack is Full

---

testPermutation

```
public static boolean testPermutation(int[] permutation)
```

Checked of permutation is possible

Parameters:

permutation - a given permutation to check

Returns:

true OR false

---

top

```
public int top()
```

Read the top item from stack and don't delete it.

Returns:

Value from Top of Stack or 0 if Stack is empty

Package at.fhv.ohe.uebung1b

Class Summary

Point

The point class provides a point in a 2 dimensional space

Rectangle

The Rectangle class provides a Rectangle and different geometric methods to manipulate the object.

Rectangle.Directions

Rectangle Directions

Rectangle.Edges

Rectangle Edges

---

at.fhv.ohe.uebung1b

Class Point

```
java.lang.Object
    |
    +--at.fhv.ohe.uebung1b.Point
```

< Constructors > < Methods >

---

public class **Point**
extends java.lang.Object

The point class provides a point in a 2 dimensional space

Author:

Oliver Heil - fhv.at

Version:

1.0

2017-03-14

Constructors

Point

```
public  Point(int x,
              int y)
```

Create a point with given position

Parameters:

x - X position
y - Y position

Methods

getX

```
public int getX()
```

Return the X position

Returns:

X Position

---

getY

```
public int getY()
```

Return the Y position

Returns:

Y Position

---

setX

```
public void setX(int x)
```

Set the point to given X value

Parameters:

x - X Position

---

setY

```
public void setY(int y)
```

Set the point to given Y value

Parameters:

y - Y position

---

at.fhv.ohe.uebung1b

Class Rectangle

```
java.lang.Object
    |
    +--at.fhv.ohe.uebung1b.Rectangle
```

< Constructors > < Methods >

---

public class **Rectangle**
extends java.lang.Object

The Rectangle class provides a Rectangle and different geometric methods to manipulate the object.

Author:

Oliver Heil - fhv.at

Version:

1.0

2017-03-14

Constructors

Rectangle

```
public  Rectangle(Point position1,
                  Point position2)
```

Create an Rectangle Object

Parameters:

position1 - UpperLeft Edge Position
position2 - BottomRigth Edge Position

Rectangle

```
public  Rectangle(Point position,
                  int width,
                  int heigth)
```

Create an Rectangle Object

Parameters:

position - UpperLeft Edge Position
width - Width
heigth - Heigth

Rectangle

```
public  Rectangle(int x,
                  int y,
                  int width,
                  int heigth)
```

Create an Rectangle Object

Parameters:

x - X Position UpperLeft Edge
y - Y Position UpperLeft Edge
width - Width
heigth - Heigth

Methods

changePosition

```
public void changePosition(int byX,
                           int byY)
```

Change the Rectangle Position by given values

Parameters:

byX - change X by value
byY - change Y by value

---

divideTo4

```
public at.fhv.ohe.uebung1b.Rectangle[] divideTo4()
```

Divide this Rectangle into four new same sized Rectangles.

Returns:

an Array of four Rectangle Objekts

getCircumference

`public int` **`getCircumference`**`()`

Return the Circumference of this Rectangle

Returns:

Circumference

---

getCircumradius

`public int` **`getCircumradius`**`()`

Return the Circumradius of this Rectangle

Returns:

Circumradius

---

getHeight

`public int` **`getHeight`**`()`

Return the height

Returns:

height

---

getIntercept

`public` Rectangle **`getIntercept`**`(`Rectangle `secondRectangle)`

Calculate the intersection between this and a second Rectangle.

Parameters:

secondRectangle - Rectangle Object

Returns:

Rectangle objects OR null if both Rectangle are not intercept with each other

---

getPerimeter

`public int` **`getPerimeter`**`()`

Return the Perimeter

Returns:

Perimeter

getPosition

`public Point getPosition()`

Return actual position

Returns:

position

getWidth

`public int getWidth()`

Return the width

Returns:

width

isSquare

`public boolean isSquare()`

Check if the Rectangle is a Square.

Returns:

isSquare

printRectangle

`public void printRectangle()`

setNewPos

`public void setNewPos(Point newPos)`

Set the Rectangle to the given Position

Parameters:

newPos - The new position

turn90Dec

```
public void turn90Dec(Rectangle.Edges turningEdge,
                      Rectangle.Directions direction)
```

Turn the Rectangle by +/-90Dec around a given edge.

Parameters:

turningEdge - Enum Edges
direction - Enum Directions

---

zoomAt

```
public void zoomAt(double factor)
```

Zoom the Rectangle by a given factor. The zoom applied from the middle. > 1 Increase the Size < 1 Decrease the Size 0 || 1 nothing change

Parameters:

factor - Factor to Zoom.

---

at.fhv.ohe.uebung1b

Class Rectangle.Directions

```
java.lang.Object
    |
    +--java.lang.Enum
        |
        +--at.fhv.ohe.uebung1b.Rectangle.Directions
```

All Implemented Interfaces:

java.io.Serializable, java.lang.Comparable

< Fields > < Methods >

---

public static final class **Rectangle.Directions**
extends java.lang.Enum

Rectangle Directions

Author:

Oliver Heil

Fields

CCW

```
public static final Rectangle.Directions CCW
```

CW

```
public static final Rectangle.Directions CW
```

Methods

valueOf

```
public static Rectangle.Directions valueOf(java.lang.String name)
```

values

```
public static at.fhv.ohe.uebung1b.Rectangle.Directions[] values()
```

at.fhv.ohe.uebung1b

Class Rectangle.Edges

```
java.lang.Object
    |
    +--java.lang.Enum
        |
        +--at.fhv.ohe.uebung1b.Rectangle.Edges
```

All Implemented Interfaces:
java.io.Serializable, java.lang.Comparable

< Fields > < Methods >

public static final class **Rectangle.Edges**
extends java.lang.Enum

Rectangle Edges

Author:
Oliver Heil

Fields

BOTTOMLEFT

```
public static final Rectangle.Edges BOTTOMLEFT
```

BOTTOMRIGHT

public static final Rectangle.Edges **BOTTOMRIGHT**

UPPERLEFT

public static final Rectangle.Edges **UPPERLEFT**

UPPERRIGHT

public static final Rectangle.Edges **UPPERRIGHT**

Methods

valueOf

public static Rectangle.Edges **valueOf**(java.lang.String name)

---

values

public static at.fhv.ohe.uebung1b.Rectangle.Edges[] **values**()

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