SendHelp Snake 2.0

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Contents

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 2

Class Index

2.1 Class List

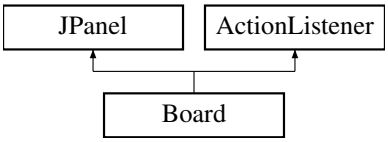
Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

Class Documentation

3.1 Board Class Reference

Inheritance diagram for Board:



Public Member Functions

- Board ()
- void setDelay (int delay)
- void loadImages ()
- void reset ()
- void paintComponent (Graphics g)
- void checkPellet ()
- void move ()
- void checkCollision () throws InterruptedException
- void locatePellet ()
- void actionPerformed (ActionEvent e)

Public Attributes

- final int BOARD_WIDTH = 300
- final int BOARD_HEIGHT = 300
- final int DOT_SIZE = 10
- final int ALL_DOTS = 900
- final int RAND_POS = 29
- final int DELAY = 140
- final int x [ ] = new int[ALL_DOTS]
- final int y [ ] = new int[ALL_DOTS]
- int dots
- int pellet_x

- int pellet_y
- Random rand = new Random()
- boolean speedupPellet = false
- boolean slowdownPellet = false
- boolean collisionPellet = false
- boolean collisionActive = false
- long stepCount = 0
- long immunityCount = 0
- boolean leftDirection = false
- boolean rightDirection = true
- boolean upDirection = false
- boolean downDirection = false
- boolean inGame = true
- Timer timer
- Image ball
- Image pellet
- Image head
- Image speedup
- Image slowdown
- Image collision

3.1.1 Constructor & Destructor Documentation

3.1.1.1 Board()

```
Board.Board ( )
```

Constructor for Board.

out := self

3.1.2 Member Function Documentation

3.1.2.1 actionPerformed()

```
void Board.actionPerformed (
            ActionEvent e )
```

Called whenever an action occurs. If the game is currently running, checks if pellet was consumed by the snake, checks if collision has occured and finally moves the snake. Repaints the scene afterwards.

Parameters

e	ActionEvent object

3.1.2.2 checkCollision()

```
void Board.checkCollision ( ) throws InterruptedException
```

Checks if snake collides with itself or the board's boundary. Typically ends game unless under collision immunity power-up.

transition := forall (z : int | z > 0 : z -= 1 and z > 4 and x[0] == x[z] and y[0] == y[z] and !this.collisionActive and this.inGame = false); (this.y[0] >= this.BOARD_HEIGHT and this.inGame = false); (this.y[0] < 0 and this.in↩ Game = false); (this.x[0] >= this.BOARD_WIDTH and this.inGame = false); (this.x[0] < 0 and this.inGame = false); (!this.inGame and this.timer.stop());

Exceptions

InterruptedException	If thread's sleep is interrupted.

3.1.2.3 checkPellet()

```
void Board.checkPellet ( )
```

If the snake's head touches a pellet, add to snake body count and applies power-up if applicable. Afterwards, locate the next pellet.

transition := (this.x[0] == this.pellet_x and this.y[0] == this.pellet_y) and (this.dots += 1 and (this.speedupPellet and this.setDelay(110) and speedupPellet = false) and (this.slowdownPellet and this.setDelay(170) and this.slowdown↩ Pellet = false) and (this.collisionPellet and this.collisionActive = true and this.collisionPellet = false)

3.1.2.4 loadImages()

```
void Board.loadImages ( )
```

Loads up the images for each significant component (body, head and pellets (power-up or otherwise))

transition := forall t : Image : t = t's corresponding image

exception := FileNotFoundException

3.1.2.5 locatePellet()

```
void Board.locatePellet ( )
```

Places next pellet randomly on the screen. (Either power-up or otherwise).

transition := (this.rand.nextInt(10) + 1 == 3 and this.speedupPellet = true) or (this.rand.nextInt(10) + 1 == 7 and this.slowdownPellet = true) or (this.rand.nextInt(10) + 1 == 4 and this.collisionPellet = true); this.pellet_x = Math.↩ random() * this.RAND_POS * this.DOT_SIZE; this.pellet_y = Math.random() * this.RAND_POS * this.DOT_SIZE;

3.1.2.6 move()

```
void Board.move ( )
```

Moves the snake across the board. Also times out power-ups after an elapsed time.

transition := (this.timer.getDelay() != 140 and this.stepCount += 1); (this.stepCount $>$ 35 and this.setDelay(140) and this.stepCount = 0); (this.collisionActive and this.immunityCount += 1); (this.immunityCount $>$ 35 and this.collision↩ Active = false and this.immunityCount = 0); forall z : int | z $>$ 0 : z -= 1 and this.x[z] = x[(z-1)] and this.y[z] = y[(z-1)]; (this.leftDirection and x[0] -= this.DOT_SIZE); (this.rightDirection and x[0] += this.DOT_SIZE); (this.upDirection and y[0] -= DOT_SIZE); (this.downDirection and y[0] += this.DOT_SIZE)

3.1.2.7 paintComponent()

```
void Board.paintComponent (
            Graphics g )
```

Public access to drawing to the window the specified Graphics object.

out := forall t : Image : draw t

Parameters

g	Graphics object

3.1.2.8 reset()

```
void Board.reset ( )
```

Resets the game.

transition := this.dots = initialDotSize; forall z : int | z $<$ this.dots : this.x[z] = initPosition - z $*$ 10 and this.y[z] = initPosition; this.rightDirection = true; this.leftDirection = false; this.upDirection = false; this.downDirection = false;

out := self

3.1.2.9 setDelay()

```
void Board.setDelay (
            int delay )
```

Sets the delay of the game, effectively controlling how quickly the game progresses.

transition := timer.setDelay(delay);

Parameters

delay	Delay of the game. The higher the number, the slower the game.

3.1.3 Member Data Documentation

3.1.3.1 ALL_DOTS

```
final int Board.ALL_DOTS = 900
```

However many dots on the board

3.1.3.2 ball

```
Image Board.ball
```

Image icon for snake body

3.1.3.3 BOARD_HEIGHT

```
final int Board.BOARD_HEIGHT = 300
```

Board height

3.1.3.4 BOARD_WIDTH

```
final int Board.BOARD_WIDTH = 300
```

Board width

3.1.3.5 collision

```
Image Board.collision
```

Image icon for collision immunity power-up pellet

3.1.3.6 collisionActive

```
boolean Board.collisionActive = false
```

If collision immunity power-up is in effect

3.1.3.7 collisionPellet

```
boolean Board.collisionPellet = false
```

Determines if current pellet is collision immunity power-up

3.1.3.8 DELAY

```
final int Board.DELAY = 140
```

Determines speed of game

3.1.3.9 DOT_SIZE

```
final int Board.DOT_SIZE = 10
```

Size of each dot or 'pixel'

3.1.3.10 dots

```
int Board.dots
```

Number of dots occupied by snake

3.1.3.11 downDirection

```
boolean Board.downDirection = false
```

Moves snake downwards

3.1.3.12 head

```
Image Board.head
```

Image icon for snake head

3.1.3.13 immunityCount

```
long Board.immunityCount = 0
```

Used to count duration of collision immunity power-up

3.1.3.14 inGame

```
boolean Board.inGame = true
```

If game is in process

3.1.3.15 leftDirection

```
boolean Board.leftDirection = false
```

Moves snake to the left

3.1.3.16 pellet

```
Image Board.pellet
```

Image icon for normal pellet

3.1.3.17 pellet_x

```
int Board.pellet_x
```

x-coordinate of pellet

3.1.3.18 pellet_y

```
int Board.pellet_y
```

y-coordinate of pellet

3.1.3.19 rand

```
Random Board.rand = new Random()
```

Used for calculating random power-up

3.1.3.20 RAND_POS

```
final int Board.RAND_POS = 29
```

Used to calculate next pellet position

3.1.3.21 rightDirection

```
boolean Board.rightDirection = true
```

Moves snake to the right

3.1.3.22 slowdown

```
Image Board.slowdown
```

Image icon for slow down power-up pellet

3.1.3.23 slowdownPellet

```
boolean Board.slowdownPellet = false
```

Determines if current pellet is slow down power-up

3.1.3.24 speedup

```
Image Board.speedup
```

Image icon for speed up power-up pellet

3.1.3.25 speedupPellet

```
boolean Board.speedupPellet = false
```

Determines if current pellet is speed up power-up

3.1.3.26 stepCount

```
long Board.stepCount = 0
```

Used to determine duration of speed up and slow down power-up

3.1.3.27 timer

```
Timer Board.timer
```

Timer (javax swing) object

3.1.3.28 upDirection

```
boolean Board.upDirection = false
```

Moves snake upwards

3.1.3.29 x

```
final int Board.x[] = new int[ALL_DOTS]
```

x-coordinates of board

3.1.3.30 y

```
final int Board.y[] = new int[ALL_DOTS]
```

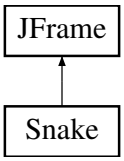
y-coordinates of board

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

- Board.java

3.2 Snake Class Reference

Inheritance diagram for Snake:



Public Member Functions

- Snake ()

Static Public Member Functions

- static void main (String[ ] args)

3.2.1 Constructor & Destructor Documentation

3.2.1.1 Snake()

```
Snake.Snake ( )
```

Constructor for Snake. Sets up board, title of window, etc.

3.2.2 Member Function Documentation

3.2.2.1 main()

```
static void Snake.main (
            String [] args )  [static]
```

Main method to run the game.

Parameters

args	

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

- Snake.java

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