**Object**

Extends: -  
Implements: -  
Direct Subclasses: Car, Street

**Attributes:**

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| --- | --- |
| private int | height |
| private java.awt.Image | image |
| private boolean | visible |
| private int | width |
| private double | x |
| private double | y |

**Constructors:**

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| Object() |
| Object(double x, double y) |
| Object(double x, double y, boolean visible) |
| Object(double x, double y, java.awt.Image image) |
| Object(double x, double y, boolean visible, java.awt.Image image) |

**Public functions:**

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| boolean | checkHitboxIntersection(java.awt.geom.Area hitbox) |
| boolean | checkHitboxIntersection(Object object) |
| void | draw(Graphics g, JPanel observer) |
| java.awt.Rectangle | getBoundingRect() |
| int | getHeight() |
| java.awt.geom.Area | getHitbox() |
| java.awt.Image | getImage() |
| int | getWidth() |
| int | getX() |
| int | getY() |
| int | height() |
| void | hide() |
| boolean | isVisible() |
| void | move(double xDif, double yDif) |
| void | moveHorizontal(double xDif) |
| void | moveRelative(double xDif, double yDif,  double horizontalMovement, double verticalMovement) |
| void | moveRelativeHorizontal(double xDif, double horizontalMovement) |
| void | moveRelativeVertical(double yDif, double verticalMovement) |
| void | moveTo(double x, double y) |
| void | moveVertical(double yDif) |
| void | setImage(java.awt.Image image) |
| void | setImage(String imagePath) |
| void | setVisible(boolean visible) |
| void | setX(double x) |
| void | setY(double y) |
| void | show() |
| int | width() |
| int | x() |
| int | y() |

**Private Functions:**

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| void | initVars(double x, double y, boolean visible) |
| void | setHeight(int height) |
| void | setWidth(int width) |
| void | updateDimensions() |

**Detailed Description:**

**Attributes:**

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| **x** |
| private double x = 0  This property holds the x coordinate of the object relative to parent Widget in which object is drawn.  By default, this property has a value of 0.  **Access functions:**   |  |  | | --- | --- | | void | setX(double x) | | int | getX() | | int | x() | |

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| **y** |
| private double y = 0  This property holds the y coordinate of the object relative to parent Widget in which object is drawn.  By default, this property has a value of 0.  **Access functions:**   |  |  | | --- | --- | | void | setY(double y) | | int | getY() | | int | y() | |

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| **width** |
| private int width = 0  This property holds the width of the Object. It changes when the Image gets changed.  By default, this property has a value of 0.  **Access functions:**   |  |  | | --- | --- | | void | setWidth() | | int | getWidth() | | int | width() | |

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| **height** |
| private int height = 0  This property holds the height of the Object. It changes when the Image gets changed.  By default, this property has a value of 0.  **Access functions:**   |  |  | | --- | --- | | void | setHeight(int height) | | int | getHeight() | | int | height() | |

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| **visible** |
| private boolean visible = true  This property contains if the Object is visible or not.  By default, this property is true.  **Access functions:**   |  |  | | --- | --- | | void | setVisible(boolean visible) | | void | show() | | void | hide() | | boolean | isVisible() | |

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| **image** |
| private java.awt.Image image  This property holds the image of the object, which is drawn to the display.  By default, this property has a value of 0.  **Access functions:**   |  |  | | --- | --- | | void | setImage(String imagePath) | | void | setImage(java.awt.Image image) | | java.awt.Image | getImage() | |

**Public Functions:**

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| **checkHitboxIntersection** |
| public boolean checkHitboxIntersection(java.awt.geom.Area hitbox)  Checks if the given hitbox (as Area) intersects the hitbox of this Object.  **Parameters:**  hitbox – hitbox to check intersection with object hitbox  **Returns:**  true – if hitboxes intersect  false – if hitboxes does not intersect |

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| **checkHitboxIntersection** |
| public boolean checkHitboxIntersection(Object object)  Checks if the hitbox of the given Object intersects with the hitbox of this Object.  **Parameters:**  object – object to compare the hitbox with  **Returns:**  true – if hitboxes intersect  false – if hitboxes do not intersect |

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| **draw** |
| public void draw(Graphics g, JPanel observer)  This Method draws the image of the Object to the observer.  **Parameters:**  g – Paint Device to draw with  observer – JPanel to draw at |

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| **getBoundingRect** |
| public java.awt.Rectangle getBoundingRect()  Returns the bounding rectangle of the Object-image, with x and y of the Object and width and height of the image.  **Returns:**  The bounding rectangle of the Object(image). |

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| **getHitbox** |
| public java.awt.geom.Area getHitbox()  Returns the hitbox of the Object as Area.  If the method is not overwritten, the hitbox is the bounding-rectangle, given by the getBoundingRect() method and converted to an Area.  **Returns:**  An Area, which is the hitbox and can be used for intersection checks. |

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| **hide** |
| public void hide()  Sets visible always to false. |

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| **move** |
| public void move(double xDif, double yDif)  Move the Object for xDif and yDif, add xDif to x or. yDif to y.  **Parameters:**  xDif – value, which gets added to x  yDif – value, which gets added to y |

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| **moveHorizontal** |
| public void moveHorizontal(double xDif)  Move the Object for xDif horizontal, add xDif to x.  **Parameters:**  xDif – value, which gets added to x |

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| **moveRelative** |
| public void moveRelative(double xDif, double yDif,  double horizontalMovement, double verticalMovement)  Moves the Object for xDif and yDif, relative to the given horizontal- and vertical-movement. That means, that the horizontalMovement and xDif or. yDif and verticalMovement gets added to each other, before the normal (special) move methods (moveHorizontal(double xDif), moveVertical(double yDif)) get called with these combined values.  **Parameters:**  xDif – value, which gets added to x (combined with horizontalMovement)  yDif – value, which gets added to y (combined with verticalMovement)  horizontalMovement – gets added to xDif  verticalMovement – gets added to yDif |

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| **moveRelativeHorizontal** |
| public void moveRelativeHorizontal(double xDif, double horizontalMovement)  Move the Object for xDif, relative to the given horizontal-movement. That means, that the horizontalMovement and xDif gets added, before the normal moveHorizontal(double xDif) method gets called with this combined value.  **Parameters:**  xDif – value, which gets added to x (combined with horizontalMovement)  horizontalMovement – gets added to xDif |

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| **moveRelativeVertical** |
| public void moveRelativeVertical(double yDif, double verticalMovement)  Move the Object for yDif, relative to the given vertical-movement. That means, that the verticalMovement and yDif gets added, before the normal moveVertical(double yDif) method gets called with this combined value.  **Parameters:**  yDif – value, which gets added to x (combined with verticalMovement)  verticalMovement – gets added to yDif |

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| **moveTo** |
| public void moveTo(double x, double y)  Sets the x and y coordinate of the Object to the given values.  **Parameters:**  x – new x-value  y – new y-value |

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| **moveVertical** |
| public void moveHorizontal(double yDif)  Move the Object for yDif horizontal, add yDif to y.  **Parameters:**  yDif – value, which gets added to y |

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| **setImage** |
| public void setImage(java.awt.Image image)  Change the image of the object to the given image and update the Dimensions.  **Parameters:**  image – new image |

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| **setImage** |
| public void setImage(String imagePath)  Creates a ImageIcon and extracts an Image. The image of the object now gets changed to the new image. Finally the Dimensions get updated.  **Parameters:**  imagePath – Path to the image-file |

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| **show** |
| public void show()  Sets visible always to true. |

**Private Functions:**

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| **initVars** |
| public void initVars(double x, double y, boolean visible)  Assign the passed values to the instance values (called by constructor) |

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| **updateDimensions** |
| public void updateDimensions()  Called if image changed. Sets width and height to the width and height of the new image. |