

changeGraphDateToPatientAge

```

/**
 * This function replaces the x-values, given as milliseconds since 1970
 * into the age of the patient in years at that point in time.
 * It returns an array of Range objects, that defines the dimensions
 * of the changed graph.
 *
 * NEEDED FUNCTIONS:
 * - calculateAge
 *
 * @param patientBirthday:
 * The patients birthday as a java.util.Calendar
 *
 * @param diagrammToChange:
 * The diagram that contains the graph to change
 * (this is a component created by adding a diagram to the form editor).
 *
 * @param indexOfGraphToChange
 * The position of the graph in the diagram as int.
 *
 * @return
 * An array of org.jfree.data.Range objects, that define the dimensions
 * of this graph. They're supposed to be used for centering the chart
 * view on this graph. The range at position 0 defines the x-axis value,
 * the range at position 1 defines the y-axis value.
 */
function changeGraphDateToPatientAge (
    patientBirthday, diagramToChange, indexOfGraphToChange) {
    /* ===== */
    // IMPORTS:
    importPackage(java.lang);
    importPackage(java.util);
    importPackage(org.jfree.chart);
    importPackage(org.jfree.data.xy);
    importPackage(org.jfree.data);

    // prepare the necessary objects
    var plot = diagramToChange.getChart().getXYPlot();
    var dataset = plot.getDataset();
    var series = dataset.getSeries(indexOfGraphToChange);
    var tempList = new LinkedList();
    var creationDate = new GregorianCalendar();

    /* to center the view in the diagramm on the patients data,
     * we need to get the highest and lowest x- and y-values.
     */
    var highestX = 0;

```

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var highestY = 0;
var lowestX = Integer.MAX_VALUE;
var lowestY = Integer.MAX_VALUE;

// replace the creation date with the patient's age in every row
for (var iter = series.getItems().iterator(); iter.hasNext(); ) {
    /* ----- */
    var _item = iter.next();

    try {
        /* try to make a Date resp. Calendar out of the formatted String.
         * If it fails, ignore this item
         */
        var long_newXValue = new Double(_item.getXValue()).longValue();
        creationDate.setTimeInMillis(long_newXValue);
    } catch (err) {
        // maybe you want to see what's happening here
        println("changeGraphDateToPatientAge(): " + err);
        continue;
    }

    // get the right values and add them as item to the tempList
    var y = _item.getYValue();
    // calculate the age
    var age = calculateAge(patientBirthday, creationDate);
    tempList.add(new XYDataItem(age, y));

    // check, if this value is the lowest or highest x- or y-value
    if (age < lowestX) {
        lowestX = age;
    }
    if (age > highestX) {
        highestX = age;
    }
    if (y < lowestY) {
        lowestY = y;
    }
    if (y > highestY) {
        highestY = y;
    }
    /* ----- */
}

// put the changes values from the template list back into the series
series.clear();
for (var iter = tempList.iterator(); iter.hasNext(); ) {
    series.add(iter.next());
}
```

```
    if (lowestX > highestX
        || lowestY > highestY) {
        return null;
    } else {
        return new Array(new Range(lowestX, highestX), new Range(lowestY,
highestY));
    }
    /* ===== */
}
```

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