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/* *****
 *   BuyAgent.java
 *   Handles the buying of Derivatives.
 *   *****
package player.playeragent;

import java.util.PriorityQueue;

import player.*;
import edu.neu.ccs.demeterf.demfgen.lib.List;
import gen.*;

/** Class for buying a derivative */
public class BuyAgent implements PlayerI.BuyAgentI{

    /** Returns the profitable derivatives from those on sale */
    public List<Derivative> buyDerivatives(List<Derivative> forSale, double account){
        PriorityQueue<Profit> goodDeals = new PriorityQueue<Profit>();
        List<Derivative> result = List.create();
        for (Derivative d : forSale) {
            double profit = Util.breakEvenValue(d.type) - d.price.val;
            if (profit > 0) {
                goodDeals.add(new Profit(profit, d));
            }
        }
        // since this is a priority queue, we will iterate through the derivatives
        // in order from most to least profit
        while (!goodDeals.isEmpty()) {
            Derivative d = goodDeals.remove().getDerivative();
            if (d.price.val < account) {
                result = result.append(d);
                account -= d.price.val;
            }
        }
        return result;
    }

    private static class Profit implements Comparable {

        private final double profit;
        private final Derivative derivative;

        public Profit(final double profit, final Derivative derivative) {
            super();
            this.profit = profit;
            this.derivative = derivative;
        }

        public Derivative getDerivative() {
            return derivative;
        }

        public double getProfit() {
            return profit;
        }

        public int compareTo(Object other) {
            return Double.compare(((Profit) other).profit, profit);
        }
    }
}

```