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016 \*/  
017package org.apache.commons.collections4.functors;  
018  
019import java.util.Collection;  
020  
021import org.apache.commons.collections4.Predicate;  
022  
023/\*\*  
024 \* Predicate implementation that returns true if only one of the  
025 \* predicates return true.  
026 \* If the array of predicates is empty, then this predicate returns false.  
027 \* <p>  
028 \* NOTE: In versions prior to 3.2 an array size of zero or one  
029 \* threw an exception.  
030 \* </p>  
031 \*  
032 \* @since 3.0  
033 \*/  
034public final class OnePredicate<T> extends AbstractQuantifierPredicate<T> {  
035  
036 /\*\* Serial version UID \*/  
037 private static final long serialVersionUID = -8125389089924745785L;  
038  
039 /\*\*  
040 \* Factory to create the predicate.  
041 \* <p>  
042 \* If the array is size zero, the predicate always returns false.  
043 \* If the array is size one, then that predicate is returned.  
044 \*  
045 \* @param <T> the type that the predicate queries  
046 \* @param predicates the predicates to check, cloned, not null  
047 \* @return the <code>any</code> predicate  
048 \* @throws NullPointerException if the predicates array is null  
049 \* @throws NullPointerException if any predicate in the array is null  
050 \*/  
051 @SuppressWarnings("unchecked")  
052 public static <T> Predicate<T> onePredicate(final Predicate<? super T>... predicates) {  
053 FunctorUtils.validate(predicates);  
054 if (predicates.length == 0) {  
055 return FalsePredicate.<T>falsePredicate();  
056 }  
057 if (predicates.length == 1) {  
058 return (Predicate<T>) predicates[0];  
059 }  
060 return new OnePredicate<>(FunctorUtils.copy(predicates));  
061 }  
062  
063 /\*\*  
064 \* Factory to create the predicate.  
065 \*  
066 \* @param <T> the type that the predicate queries  
067 \* @param predicates the predicates to check, cloned, not null  
068 \* @return the <code>one</code> predicate  
069 \* @throws NullPointerException if the predicates array is null  
070 \* @throws NullPointerException if any predicate in the array is null  
071 \*/  
072 public static <T> Predicate<T> onePredicate(final Collection<? extends Predicate<? super T>> predicates) {  
073 final Predicate<? super T>[] preds = FunctorUtils.validate(predicates);  
074 return new OnePredicate<>(preds);  
075 }  
076  
077 /\*\*  
078 \* Constructor that performs no validation.  
079 \* Use <code>onePredicate</code> if you want that.  
080 \*  
081 \* @param predicates the predicates to check, not cloned, not null  
082 \*/  
083 public OnePredicate(final Predicate<? super T>... predicates) {  
084 super(predicates);  
085 }  
086  
087 /\*\*  
088 \* Evaluates the predicate returning true if only one decorated predicate  
089 \* returns true.  
090 \*  
091 \* @param object the input object  
092 \* @return true if only one decorated predicate returns true  
093 \*/  
094 @Override  
095 public boolean evaluate(final T object) {  
096 boolean match = false;  
097 for (final Predicate<? super T> iPredicate : iPredicates) {  
098 if (iPredicate.evaluate(object)) {  
099 if (match) {  
100 return false;  
101 }  
102 match = true;  
103 }  
104 }  
105 return match;  
106 }  
107  
108}