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1  package hyperDap.base.helpers;
2
3  import java.math.BigDecimal;
4  import java.math.BigInteger;
5  import java.time.LocalDate;
6  import java.time.LocalDateTime;
7  import java.time.LocalTime;
8  import java.time.MonthDay;
9  import java.time.OffsetDateTime;
10 import java.time.OffsetTime;
11 import java.time.Year;
12 import java.time.YearMonth;
13 import java.time.ZoneId;
14 import java.time.ZoneOffset;
15 import java.time.ZonedDateTime;
16 import java.util.HashMap;
17 import java.util.function.Function;
18
19 /**
20  * A class used to parse objects to the desired types. This may be achieved simply
21  * by casting
22  * correctly between different classes, ensuring that the final Object is otherwise
23  * as identical to
24  * the original as possible, or by parsing values to produce a desired type.
25  *
26  * @author soenk
27  */
28 public final class Parser {
29
30     private Parser() {}
31
32     /**
33      * A map of parseable classes to their correct parsing functions. Used by
34      * {@link #parse(String, Class)}.
35      */
36     private static HashMap<Class<?>, Function<String, ?>> parseMap = new HashMap<>();
37     static {
38         parseMap.put(boolean.class, Boolean::parseBoolean);
39         parseMap.put(byte.class, Byte::parseByte);
40         parseMap.put(short.class, Short::parseShort);
41         parseMap.put(int.class, Integer::parseInt);
42         parseMap.put(long.class, Long::parseLong);
43         parseMap.put(double.class, Double::parseDouble);
44         parseMap.put(float.class, Float::parseFloat);
45         parseMap.put(Boolean.class, Boolean::valueOf);
46         parseMap.put(Byte.class, Byte::valueOf);
47         parseMap.put(Short.class, Short::valueOf);
48         parseMap.put(Integer.class, Integer::valueOf);
49         parseMap.put(Long.class, Long::valueOf);
50         parseMap.put(Double.class, Double::valueOf);
51         parseMap.put(Float.class, Float::valueOf);
52         parseMap.put(String.class, String::valueOf);
53         parseMap.put(BigDecimal.class, BigDecimal::new);
54         parseMap.put(BigInteger.class, BigInteger::new);
55         parseMap.put(LocalDate.class, LocalDate::parse);
56         parseMap.put(LocalDateTime.class, LocalDateTime::parse);
57         parseMap.put(LocalTime.class, LocalTime::parse);
58         parseMap.put(MonthDay.class, MonthDay::parse);
59         parseMap.put(OffsetDateTime.class, OffsetDateTime::parse);
60         parseMap.put(OffsetTime.class, OffsetTime::parse);
61         parseMap.put(Year.class, Year::parse);
62         parseMap.put(YearMonth.class, YearMonth::parse);
63         parseMap.put(ZonedDateTime.class, ZonedDateTime::parse);
64         parseMap.put(ZoneId.class, ZoneId::of);
65         parseMap.put(ZoneOffset.class, ZoneOffset::of);
66     }
67
68     /**
69      * Take a String representation of the desired Object and parse it to the desired
70      * {@link Class}
71      * representation.

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71      * <p>
72      * Used as: {@code parse("123.45",Double.class)} and can be used on primitive types.
73      * <p>
74      * Taken from <a href="https://ideone.com/WtNDN2">this post</a> and referenced in
75      * <a href=
76      * "https://stackoverflow.com/questions/36368235/java-get-valueof-for-generic-subclass
77      * -of-java-lang-number-or-primitive">this
78      * Stackoverflow discussion</a>.
79      *
80      * @param stringRepresentation
81      * @param classReference
82      * @return
83      */
84      @SuppressWarnings({"rawtypes", "unchecked"})
85      public static Object parse(String stringRepresentation, Class classReference) {
86          Function<String, ?> function = parseMap.get(classReference);
87          if (function != null)
88              return function.apply(stringRepresentation);
89          if (classReference.isEnum())
90              return Enum.valueOf(classReference, stringRepresentation);
91          throw new UnsupportedOperationException(
92              String.format("Parsing String '%s' to class '%s' has failed",
93                  stringRepresentation,
94                  classReference.getName()));
95      }
96  }

```