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1  import java.io.Serializable;
2  import java.time.LocalDateTime;
3  import java.time.format.*;
4  import java.util.*;
5
6  public class Staff implements Serializable
7  {
8      private String eNum;
9      private String name;
10     private String position;
11     static DateTimeFormatter timeFormat = DateTimeFormatter.ofPattern("h:mm a");
12
13     public Staff(String eNum, String name, String position)
14     {
15         this.eNum = eNum;
16         this.name = name;
17         this.position = position;
18     }
19
20     protected boolean overlap(LocalTime start1, LocalTime end1,
21                               LocalTime start2, LocalTime end2)
22     {
23         return start1.isBefore(end2) && start2.isBefore(end1);
24     }
25
26     public void printTimetable(ArrayList<? extends Lesson> lessons)
27     {
28         System.out.println("Name: " + name);
29
30         // Get maximum length for each field
31         int courseIDMaxLen = "Course".length();
32         int activityMaxLen = "Activity".length(); // "Tutorial" or "Lecture"
33         int locationMaxLen = "Location".length();
34         int dayMaxLen = "Day".length();
35         int startTimeMaxLen = "Start Time".length(); // Always longer/equal to
36         int endTimeMaxLen = "End Time".length();     // any time
37         for(Lesson lesson : lessons)
38         {
39             Course course = lesson.getCourseOffering().getCourse();
40
41             // Check if the length of this 'Course' field is largest so far
42             if(course.getID().length() > courseIDMaxLen)
43             {
44                 courseIDMaxLen = course.getID().length();
45             }
46
47             // Check if the length of this 'Location' field is largest so far
48             if(lesson.getVenue().getLocation().length() > locationMaxLen)
49             {
50                 locationMaxLen = lesson.getVenue().getLocation().length();
51             }
52
53             // Check if the length of this 'Day' field is largest so far
54             if(lesson.getDay().getDisplayName(TextStyle.FULL,
55                                                Locale.getDefault()).length() > dayMaxLen)
56             {
57                 dayMaxLen = lesson.getDay().getDisplayName(TextStyle.FULL,
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58             Locale.getDefault()).length();
59         }
60     }
61     int totalLength = courseIDMaxLen + activityMaxLen + locationMaxLen
62         + dayMaxLen + startTimeMaxLen + endTimeMaxLen + 17;
63
64     // Print top of table
65     System.out.println(String.format("+%" + totalLength + "s+", ""))
66         .replace(' ', '-'));
67     // Print table headers
68     System.out.println(String.format("| %-" + courseIDMaxLen + "s | %-"
69         + activityMaxLen + "s | %-" + locationMaxLen + "s | %-"
70         + dayMaxLen + "s | %-" + startTimeMaxLen + "s | %-"
71         + endTimeMaxLen + "s |", "Course", "Activity", "Location",
72         "Day", "Start Time", "End Time"));
73     // Print header separator
74     System.out.println(String.format("| %-" + courseIDMaxLen + "s | %-"
75         + activityMaxLen + "s | %-" + locationMaxLen + "s | %-"
76         + dayMaxLen + "s | %-" + startTimeMaxLen + "s | %-"
77         + endTimeMaxLen + "s |", "", "", "", "", "", "", ""))
78         .replace(' ', '-'));
79
80     // Print each table row
81     for(Lesson lesson : lessons)
82     {
83         Course course = lesson.getCourseOffering().getCourse();
84
85         // Print lesson information
86         String s = "| ";
87         s += String.format("%-" + courseIDMaxLen + "s",
88             course.getID());
89         if(lesson instanceof Lecture)
90         {
91             s += String.format(" | %-" + activityMaxLen
92                 + "s |", "Lecture");
93         }
94         else if(lesson instanceof Tutorial)
95         {
96             s += String.format(" | %-" + activityMaxLen
97                 + "s |", "Tutorial");
98         }
99         s += String.format("%-" + locationMaxLen + "s",
100             lesson.getVenue().getLocation());
101         s += " | ";
102         s += String.format("%-" + dayMaxLen + "s", lesson.getDay()
103             .getDisplayName(TextStyle.FULL, Locale.getDefault()));
104         s += " | ";
105         s += String.format("%-" + startTimeMaxLen + "s",
106             String.format("%8s",
107                 timeFormat.format(lesson.getStart())));
108         s += " | ";
109         s += String.format("%-" + endTimeMaxLen + "s",
110             String.format("%8s", timeFormat.format(lesson.getEnd())));
111         s += " | ";
112         System.out.println(s);
113     }
114

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115         // Print bottom of table
116         System.out.println(String.format("%" + totalLength + "s+", ""))
117             .replace(' ', '-'));
118     }
119
120     public String getName()
121     {
122         return name;
123     }
124
125     public String getENo()
126     {
127         return eNum;
128     }
129
130     public String getPosition()
131     {
132         return position;
133     }
134
135     public String toString()
136     {
137         return "Staff ID: " + eNum + "\nName: " + name + "\nPosition: "
138             + position;
139     }
140 }
141
```