**Exercise 1 (10 points) – can be done individually or in pair**

- The first lines of all source files must be comment containing <u>names & IDs of all members</u>. Also create file <u>readme.txt</u> containing names & IDs of all members.

- Put all files (source, input, output) in folder Ex1_xxx where xxx = your full ID. That is, your source files must be in package Ex1_xxx and input/output files (if there is any) must be read from/write to this folder

- The group representative zips Ex1_xxx & submits it to Google Classroom. The other members submit only readme.txt. Email submission is not accepted.

- The exercise is graded only once, and after graded, members can't be added.

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1. Read hour digit and minute digit of start time from user.
2. Read hour digit and minute digit of end time from user.

   In (1) and (2), make sure that hour digit is 0-23 and minute digit is 0-59. Keep looping for new input if hour/minute digit is invalid.

3. Once you get valid start time and end time, calculate the duration between them and print output.
   - If end time is after start time, also print that it is on the same day or today.
   - If end time is before start time, also print that it is on the next day or tomorrow.

**Note**
- Since you will have get each digit twice, write methods such as
```
      public static int readHour() {
          // Your own code
      }
```

```
--- exec:3.1.0:exec (default-cli) @ solutions
=== Start time ===
Enter hour digit (0-23) =
14
Enter minute digit (0-59) =
05

=== End time ===
Enter hour digit (0-23) =
21
Enter minute digit (0-59) =
30

Start time = 14:05, End time = 21:30 (today)
Duration = 7 hours, 25 minutes
--------------------------------------------
BUILD SUCCESS
```

```
--- exec:3.1.0:exec (default-cl
=== Start time ===
Enter hour digit (0-23) =
-1
Enter hour digit (0-23) =
24
Enter hour digit (0-23) =
23
Enter minute digit (0-59) =
-1
Enter minute digit (0-59) =
60
Enter minute digit (0-59) =
59

=== End time ===
Enter hour digit (0-23) =
24
Enter hour digit (0-23) =
25
Enter hour digit (0-23) =
00
Enter minute digit (0-59) =
60
Enter minute digit (0-59) =
70
Enter minute digit (0-59) =
00

Start time = 23:59, End time = 00:00 (tomorrow)
Duration = 0 hours, 1 minutes
--------------------------------------------
BUILD SUCCESS
```

```
--- exec:3.1.0:exec (default-cli) @ solutions --
=== Start time ===
Enter hour digit (0-23) =
21
Enter minute digit (0-59) =
30

=== End time ===
Enter hour digit (0-23) =
14
Enter minute digit (0-59) =
05

Start time = 21:30, End time = 14:05 (tomorrow)
Duration = 16 hours, 35 minutes
--------------------------------------------
BUILD SUCCESS
```