

You are allowed to use internet resources but you're not allowed to see other participants' code.
The evaluation has a duration of 2 hours and it is ungraded.

Exercise

Matilda's online magazine wants to display on their website the countdown for the next summer and winter solstices depending on the moment that their readers open their page. They hire Derek's software company to provide a backend service to provide this information on demand.

- Develop the *Solstices* class that has to methods. The *getSummerSolsticeCountdown* and the *getWinterSolsticeCountdown* methods both receive a *LocalDate* representing the current date and return a *String* with the countdown message that the website has to display on the page.
- Develop the unit tests to ensure that both date calculations for summer and winter solstice are correct, as well as also unit tests for the countdown messages obtained.

Hints:

- Check the Solstice information to figure out the pattern for your algorithm
- The leap year information could be of much relevance
- It's better to have three test classes: one for summer dates, one for winter dates and one for solstice countdown messages

Summer and winter Solstice information

When is ...?	Date	Day of the week	When is ...?	Date	Day of the week
Summer Solstice 2014	June 21, 2014	Saturday	Winter Solstice 2014	December 21, 2014	Sunday
Summer Solstice 2015	June 21, 2015	Sunday	Winter Solstice 2015	December 22, 2015	Tuesday
Summer Solstice 2016	June 20, 2016	Monday	Winter Solstice 2016	December 21, 2016	Wednesday
Summer Solstice 2017	June 21, 2017	Wednesday	Winter Solstice 2017	December 21, 2017	Thursday
Summer Solstice 2018	June 21, 2018	Thursday	Winter Solstice 2018	December 21, 2018	Friday
Summer Solstice 2019	June 21, 2019	Friday	Winter Solstice 2019	December 22, 2019	Sunday
Summer Solstice 2020	June 20, 2020	Saturday	Winter Solstice 2020	December 21, 2020	Monday
Summer Solstice 2021	June 21, 2021	Monday	Winter Solstice 2021	December 21, 2021	Tuesday
Summer Solstice 2022	June 21, 2022	Tuesday	Winter Solstice 2022	December 21, 2022	Wednesday
Summer Solstice 2023	June 21, 2023	Wednesday	Winter Solstice 2023	December 22, 2023	Friday
Summer Solstice 2024	June 20, 2024	Thursday	Winter Solstice 2024	December 21, 2024	Saturday

Solstice calculation test values

Summer values	Winter values
Input: 2019-02-01 Output: 2019-06-21	Input: 2019-02-01 Output: 2019-12-22
Input: 2019-10-01 Output: 2020-06-20	Input: 2019-12-23 Output: 2020-12-21
Input: 2022-02-01 Output: 2022-06-21	Input: 2022-02-01 Output: 2022-12-21
Input: 2023-02-01 Output: 2023-06-21	Input: 2023-02-01 Output: 2023-12-22

Countdown message test values

Summer value
Input: 2019-02-01

Output: The Summer Solstice 2019 is on FRIDAY, JUNE 21, 2019 (in 144 days).

Winter value

Input: 2019-02-01

Output: The Winter Solstice 2019 is on SUNDAY, DECEMBER 22, 2019 (in 328 days).