

# Project: Calendars

## Mathematical Programming with Python

MATH 2604: Advanced Scientific Computing 4

Spring 2025

Monday/Wednesday/Friday, 1:00-1:50pm

Room A202 Langley Hall

[https://people.sc.fsu.edu/~jburkardt/classes/python\\_2025/calendar/calendar.pdf](https://people.sc.fsu.edu/~jburkardt/classes/python_2025/calendar/calendar.pdf)



*October 1582 did not have 31 days!*

A calendar allows us to index the days of the past, assigning a unique identifier to every day. The simplest calendar would simply be a number that increases by 1 every day, starting at 0 or 1 on some long ago date. But instead, we rearrange our calendar to give us additional information about the phases of the moon, the seasons, and the yearly cycle. It turns out that our complicated calendars make it hard to answer some simple questions.

In this project, you should write programs to answer (only some of) the following questions. Pick a few questions that interest you, find out more about the corresponding calendar, and work out a solution:

- How many days was Jimmy Carter alive, that is, 1 October 1924 to 29 December 2024?
- What day of the week was 18 September 1783?
- In the Hebrew calendar, a particular day was 22 Tammuz 5727. What day is that in our common calendar?
- What is the Julian Day number for 1 January 2025?
- How can the Julian Day number be used to convert from one calendar to another?

- What would a calendar page for the month of May look like, using the ancient Roman system, including Roman numerals?
- What is today's date using the Hindu calendar? (There are several to choose from.)
- What is today's date using the Islamic calendar?
- What is today's date using the Chinese calendar?
- In the Mayan Long Count calendar, a particular day is 12/19/6/15/2 (baktun/katun/tun/winal/kin). What day is this in our calendar?

Note that there are already libraries and functions for answering some of these questions. But I want you to try to come up with your own approach. You are welcome to look up references and guidelines, but the coding should be your own, as much as possible, and you should be able to explain to the class how you did it.

The questions above often mention specific dates. The program you write should be able to handle other dates as well.