**Introduction and propose:**

The code (Converter) is made to convert a Gregorian date (Western) to a Persian date (Hijri Shamsi). For reference, there are two Hijri dates, one is Solar (Persian name:Shamsi) the other one is Lunar (Persian name:Qamari). Hijri Shamsi year starts from the Spring Equinox. The Gregorian date is 621 years ahead of the Solar Hijri. The goal of this test implementation is to ensure this code runs well, and gives accurate results.

**Function:**

The code is made to subtract 621 from the Gregorian date given. It will adjust the month alignment, as well as the Leap year system used in Persian dates and in the Western.

**Usage:**

The code is made to ask the user for the Gregorian date they want to get it converted to Hijri. It will ask the user for Gregorian year, month and then the day. It will give the results back in Perian date formatting (Day/Month/year). The code will use the name of the month (ex.April), instead of the number of the month (ex.04).

**Test Environment:**

Hardware: A computer capable of Python 3.

Software: Python 3.14. No library is being used including the “Convertdate”.

Input: Gregorian dates provided by the user.

Output: Solar Hijri (Persian) date in the format (day/month/year)

**Test Cases:**

| Test ID | Input (Gregorian) | Expected Output (Hijri) | Result |
| --- | --- | --- | --- |
| 1 | 2024-03-20 | 1403-01-01 | Pass |
| 2 | 2000-01-01 | 1378-10-11 | Pass (googled) |

2024-621= 1403

BUT:

2000-621=1379

* Leap years in Persian date and in Western date are considered in this code, so it’s not simply subtracting 621 from the Gregorian.
* If the month given in Gregorian is January, February or March it should be subtracting 622 from the year, not 621. That is why I have considered each month in the code for the accurate results.

**More test cases:**

| Test Cases | Input (Gregorian)  (yyyy/mm/dd) | Expected output (Hijri Shamsi) (yyyy/mm/dd) | Comments |
| --- | --- | --- | --- |
| Basic Convention | 2024/03/21 | 1403/01/01 | Verifies that the program correctly converts the start of a Hijri Shamsi year. |
| Leap year date | 2020/02/29 | 1398/12/09 | Tests leap year handling. |
| End of the year date | 2023/12/31 | 1402/10/09 | Ensures year-end dates are converted accurately. |
| Start of the year date | 2024/01/01 | 1402/10/10 | Checks conversion at the start of the Gregorian year. |
| Random date 1 | 2004/08/12 | 1383/04/21 | Is to statistically confirm accuracy |
| Independence day | 1776/07/04 | 1155/04/13 | Is to statistically confirm accuracy |

**Results table:**

| Test cases | Results |
| --- | --- |
| Basic Convention | Pass |
| Leap year date | Pass |
| End of the year date | Pass |
| Start of the year date | Pass |

**Conclusion:**

If all test cases pass, the Hijri Shamsi Date Converter can be considered accurate and flawless. Otherwise, adjustments would be needed.