

Leap Year

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A leap year **is a year with 366 days**, not 365 days like a normal year. This extra day is added to the month of February, so February has 29 days.

The reason

The Earth does not orbit the Sun in exactly 365 days, but rather in approximately

365 days 5 hours 48 minute 46 seconds ≈ 365.2422 days.

If the calendar only counted 365 days, then every 4 years there would be a difference of almost 1 day. Therefore, **one day is added every 4 years** so that the calendar remains synchronized with the Earth's orbit.

Leap Year Theory

- If the year is **divisible by 4** \Rightarrow it is a leap year.
- If the year is **divisible by 100** \Rightarrow it is not a leap year.
- If the year is **divisible by 400** \Rightarrow it is still a leap year.

Flowchart

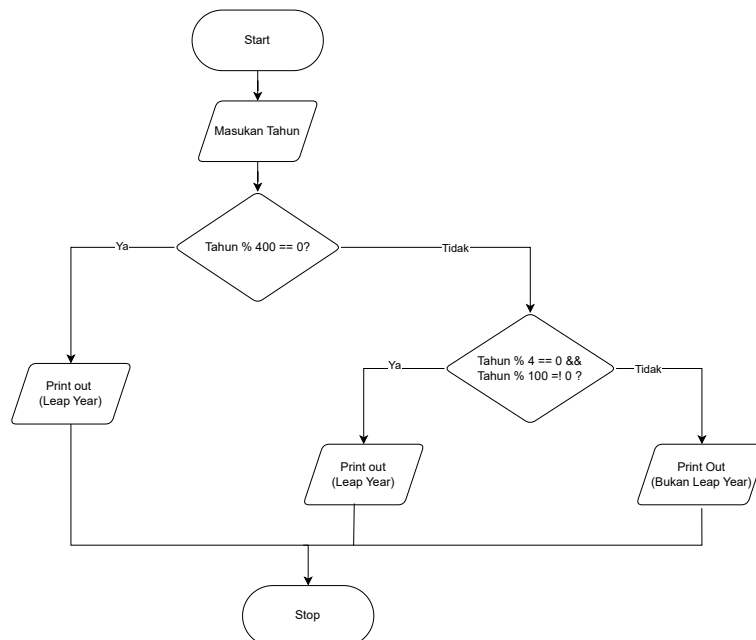


Figure 1: Flowchart program Leap Year Checker

Code

Listing 1: Code for Leap Chceker

```
1      tahun = app.MasukanTahunEditField.Value;
2
3      if mod(tahun, 4) == 0
4          if mod(tahun, 100) == 0
5              if mod(tahun, 400) == 0
6                  pesan = "Adalah Tahun Kabisat, karena habis dibagi 400.";
7              else
8                  pesan = "Bukan Tahun Kabisat, karena habis dibagi 100 tapi tidak habis dibagi
9                      400.";
10             end
11         else
12             pesan = "Adalah Tahun Kabisat, karena habis dibagi 4 tapi tidak habis dibagi
13                 100.";
14         end
15     else
16         pesan = "Bukan Tahun Kabisat, karena tidak habis dibagi 4.";
17     end
18
19 % Print Hasil dari chceker
20 app.HasilLabel.Text = pesan;
21 end
22 end
```

GUI

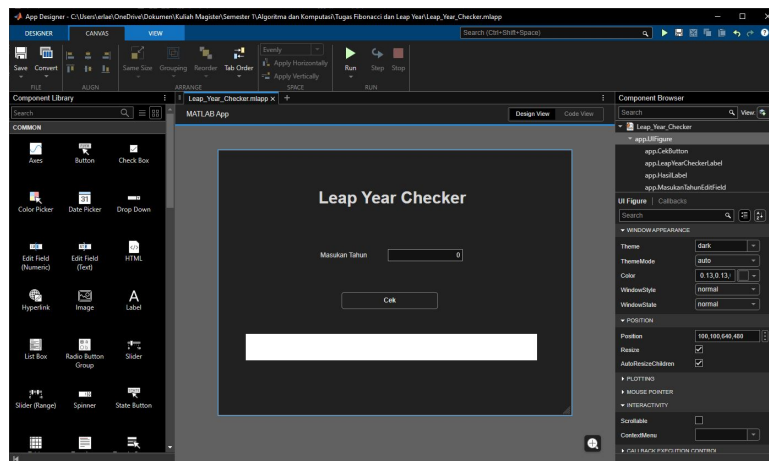


Figure 2: AppDesigner on Matlab

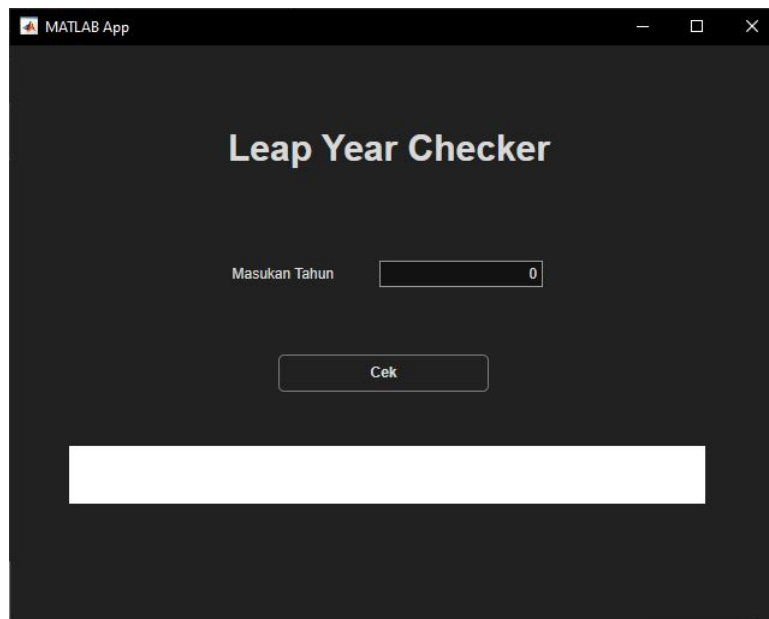


Figure 3: Leap Year Chceker GUI

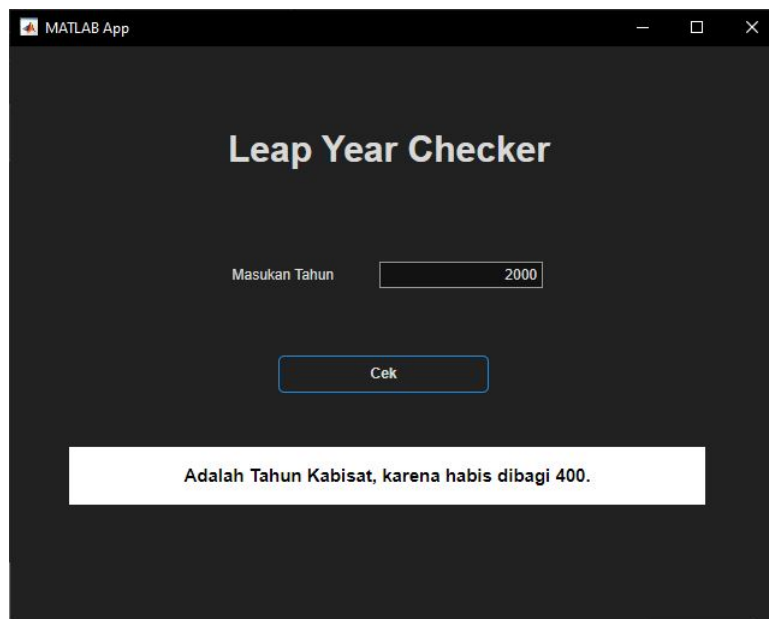


Figure 4: The Result on Leap Year Chceker

Link

Github : Silahkan mengunjungi Github