EEE243 – Applied Computer Programming

Solution for the algorithm exercises

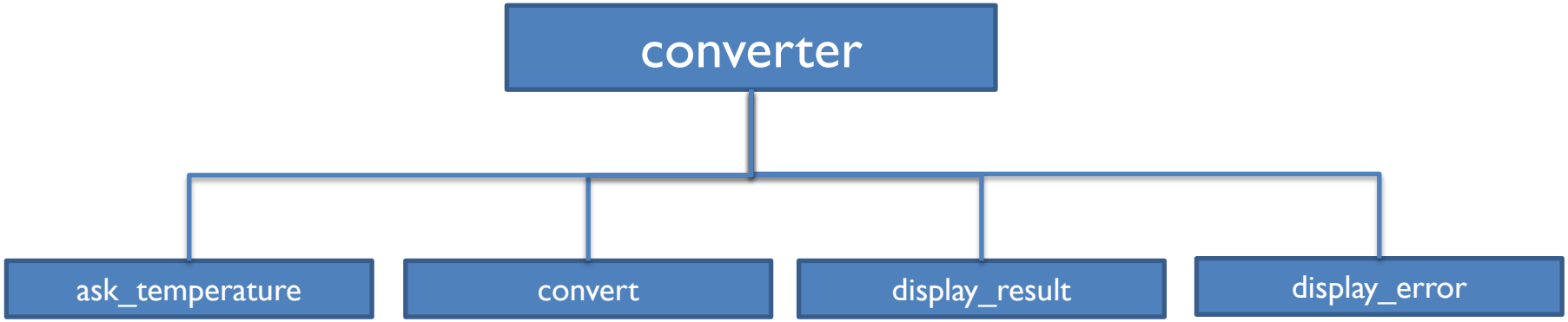
Problems

Write the algorithms to solve the following problems:

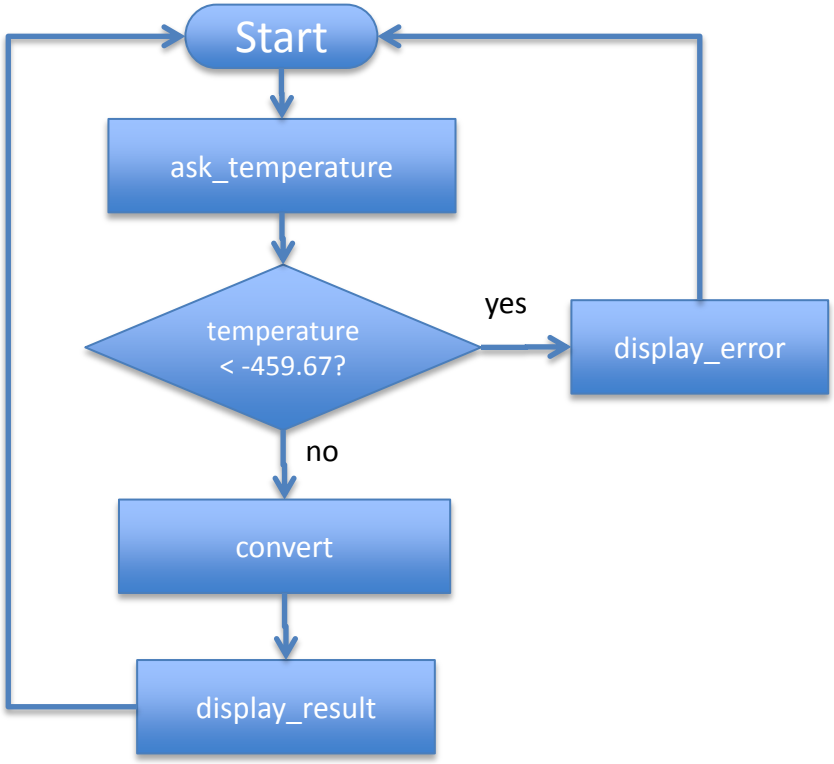
1. Converting temperatures in Fahrenheit to Celsius (0 C is 32 F and -40 C is -40 F)
2. Determining if a year is a leap year. Every year that is exactly divisible by four is a leap year, except for years that are exactly divisible by 100, but these centurial years are leap years if they are exactly divisible by 400. [2]

Your solution must include inputs and outputs.

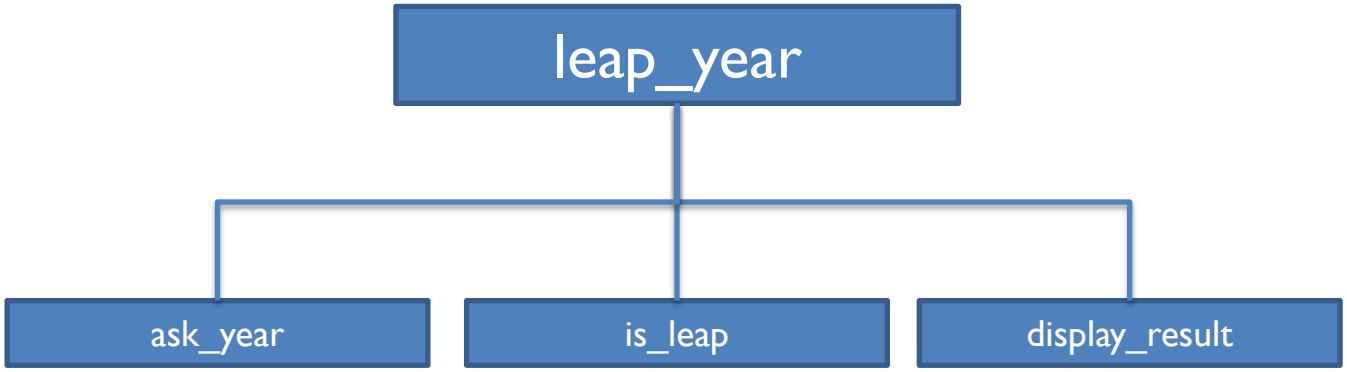
Structure Diagram (P. 1)



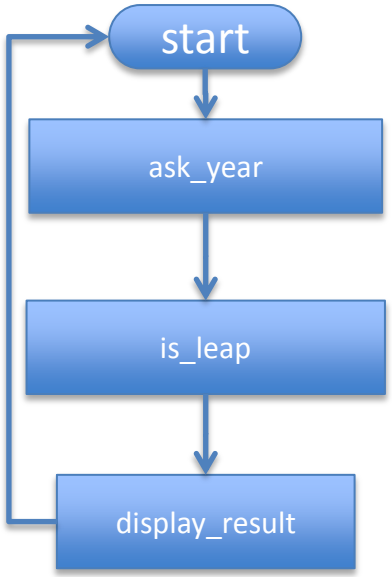
Flowchart (P. 1)



Structure Diagram (P. 2)

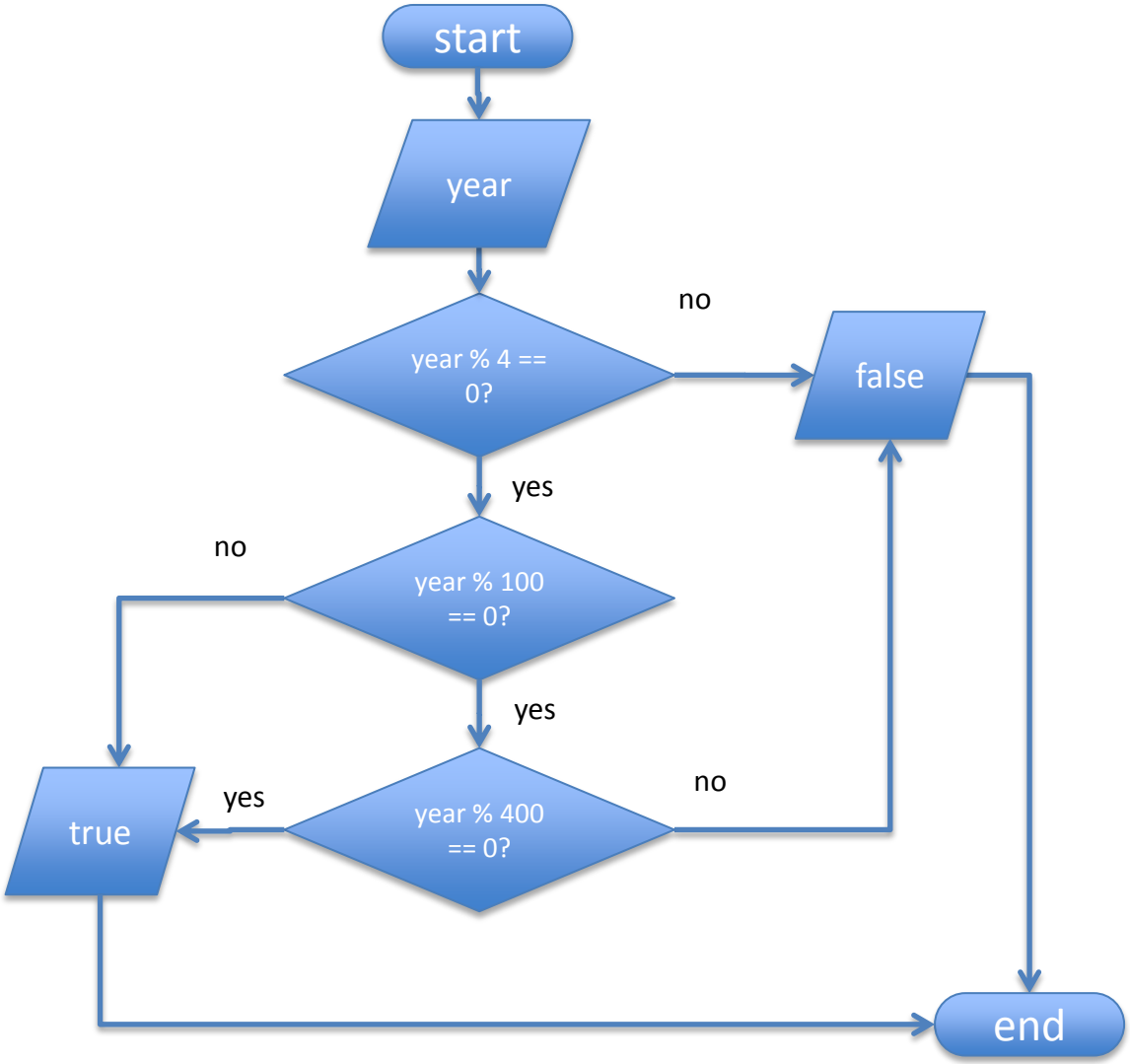


Flowchart (P. 2)



Flowchart (P. 2)

is_leap



Some issues

- The leap year algorithm has changed over time
- Before the Gregorian calendar was adopted (in 1582), there were no distinction between end of century years. So, 1900 would have been leap in the Julian calendar.
- Leap years do not mean much for years prior to the Christian era (B.C.)