

If-Elif-Else Lab

1. Create a program that will compute the area of various shapes (you can start with your previous shape program). The user will enter what shape they want to compute the area of, choosing between circle, square, and triangle. Use an if-elif-else statement to accomplish this. Print an error message if the user enters an invalid shape name. Hint: Your if-elif-else will need four parts: an if, two elifs, and an else.
2. Create a program that asks the user when their birthday is (month and day as integers). Print a message to the user specifying whether their birthday has passed for the year, has yet to come for the year, or is today. You should “hard-code” today’s date (that is, don’t try to have Python figure out what day today is, just encode it directly into your Python program with literals or variables.)
3. You are writing a program to help people choose an outdoor hobby. Ask the user what kind of weather they prefer: hot, mild, or cold. The user should be able to answer either with a word, or just the first letter (h, m, or c).
 - If they choose hot weather, ask the user if they like the water. If they say yes, tell the user they should take up swimming. If they say no, tell them they should take up beach volleyball.
 - If the user originally chose mild weather, ask the user if they like to run. If they say yes, tell them they should take up soccer. If they say no, tell them to take up golf.
 - If the user originally chose cold weather, ask them if they are afraid of heights. If they say yes, tell them to take up ice-skating. If they say no, tell them to take up downhill skiing.

For each of the secondary yes/no questions, the user should be able to type in the entire word or just the first letter (y/n).
4. Write a program to determine whether or not a year is a leap year. A leap year is any year that is divisible by 4, unless the year is also divisible by 100. If the year is divisible by 100, it must also be divisible by 400 to be a leap year. In other words, 1900 was not a leap year, but 2000 was.

Hint: The % operator calculates remainders. Use it just like +, -, *, or /, in that asking Python to calculate $x \% y$ gives you back the remainder when x is divided by y . For instance, $11 \% 3$ gives you back 2 (because when you divide 8 by 3, you get 3 with a remainder of 2). The remainder operator can be used to test for divisibility. Figure out how.