

1. Boolean Comparators

< > == <= >= !=

2. Compound Boolean Operators

and or not

3. Basic **if** statement

```
if <boolean expression>:  
    <statement>  
    <statement>
```

or

```
if <boolean expression>: <single statement>
```

4. Basic **if-else** statement to do one of two alternatives

```
if <boolean expression>:  
    <statement>  
else:  
    <statement>  
    <statement>
```

5. "Switch-style" **if-else** statements to perform instructions based on a range of values in a single variable

```
if <boolean expression1>:  
    <statement>  
elif <boolean expression2>:  
    <statement>  
    <statement>  
elif <boolean expression3>:  
    <statement>  
    <statement>  
else:  
    <statement>  
    <statement>
```

6. Nested **if-else** statements to perform multi-step decision-making

```
if <boolean expression1>:
    <statement>
    if <boolean expression2>:
        <statement>
        <statement>
    else:
        <statement>
        <statement>
    <statement>
else:
    <statement>
    if <boolean expression3>:
        <statement>
        <statement>
    else:
        <statement>
        <statement>
    <statement>
```

EXERCISES

1. In a program, the number of days in a calendar year is already initialized as 365 in the variable `days_in_year`. Write a simple **if** statement that modifies that number appropriately if the boolean variable `leap_year` is true.
2. Write an **if-else** statement to print out the square root of `a_number`, or print out a message that the square root is imaginary if the value of `a_number` is negative.
3. Write an **if-else** statement that takes the variables `a` and `b` and prints out the answer to `a / b`, but only if `b` is not 0. Otherwise, the statement should print an error message.
4. Write a series of appropriate **if-elif-else** statements (a “switch-style” statement) to **print** an appropriate comment on the weather based on the temperature as given by the variable `degrees_Fahrenheit`. Include at least 4 comments in your solution.
5. A program stores the lengths of the three sides of a triangle in the variables `a`, `b`, and `c`. Write **if-else** statements to print the type of the triangle: *equilateral*, *isosceles*, or *scalene*.
6. You’re trying to decide what to do this weekend. If you’re **alone** and you **have_money** (both boolean variables), you’ll go to the movies, but if you’re broke, you’ll stay home and read. If you’re *not* alone though, and you have money, you’ll take your friends out to dinner, but if you don’t have money, you’ll all hang out and play video games. Write a set of **if-else** statements to print out your weekend options based on the boolean variables `alone` and `have_money`.