

Boolean Values

In Python, *any* expression can be interpreted as either **True** or **False**. Knowing this feature helps you avoid common programming mistakes.

Manager:

Recorder:

Presenter:

Reflector:

Content Learning Objectives

After completing this activity, students should be able to:

- Explain how using roles helps improve the team's success.
- Summarize what values Python considers to be true in a Boolean context.

Process Skill Goals

During the activity, students should make progress toward:

- Identifying logic patterns by running examples in a shell. (Information Processing)



Meta Activity: Team Disruptions

Common disruptions to learning in teams include: talking about topics that are off-task, teammates answering questions on their own, entire teams working alone, limited or no communication between teammates, arguing or being disrespectful, rushing to complete the activity, not being an active teammate, not coming to a consensus about an answer, writing incomplete answers or explanations, ignoring ideas from one or more teammates.

Questions (10 min)

Start time:

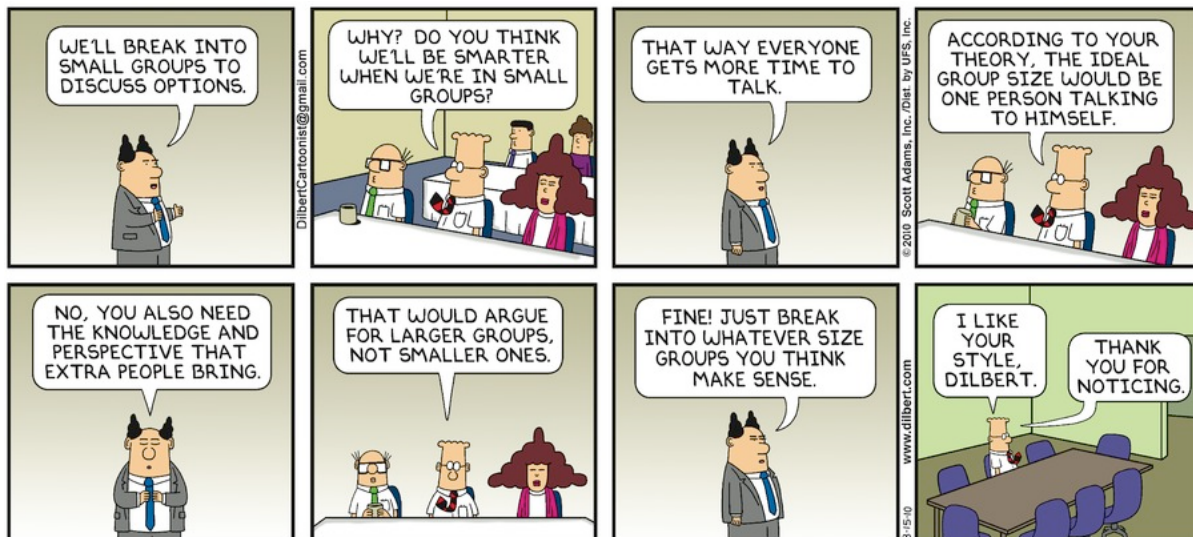
1. Pick four of the disruptions listed above. For each one, find something from the role cards that could help improve the team's success. Use a different role for each disruption.

a) Manager:

b) Presenter:

c) Recorder:

d) Reflector:



Model 1 Truthy or Falsy

In Python, most values are considered to be “true” when used as a Boolean. However, some values are considered to be “false.” **Read the first two questions before completing the table.**

Python value	Predicted output	Actual output
123		
0		
"abc"		
4.56		
""		
"0"		
True		
"True"		
False		
"False"		
0.0		
"0.0"		

Questions (15 min)

Start time:

2. Run the following code snippet, and use the output to complete the first row of the table.

```
value = 123
if value:
    print("Truthy")
else:
    print("Falsy")
```

3. As a team, predict the output (Truthy or Falsy) for the other values in the table. Then test each value using the code snippet from the previous question. Record your results in the table.

Manager: Spend no more than 5 minutes on this question.

4. Using complete sentences, summarize what kinds of values are considered to be **True** in Python (and what kinds of values are considered to be **False**).

5. Predict the value (True or False) of the following expressions. Then check your answers using a Python Shell.

Python value	Predicted output	Actual output
<code>bool(5)</code>		
<code>bool("")</code>		
<code>not 5</code>		
<code>not ""</code>		

6. Rewrite the following if statements without using == or != (or any other operator).

- a)

```
if value != 0:
    print("Not zero")
```
- b)

```
if happy == True:
    print("You know it!")
```
- c)

```
if absent == False:
    print("Good job")
```
- d)

```
if answer != "":
    print("Thank you")
```
- e)

```
if answer == "":
    print("Try again")
```