

Task 1:

Suppose $A = \{\text{all students who attended the football game}\}$, $B = \{\text{all students who attended the basketball game}\}$, $C = \{\text{all students who attended the baseball game}\}$, $D = \{\text{all students}\}$, and $E = \{\text{everyone who attended the football game (both students \& faculty)}\}$.

Write set expressions (using either mathematical notation, such as $A \cap B$ or $C \cup A$, or Python notation, such as `a & b` or `b - a`.) to represent the following:

1. Non-students who attended the football game
2. Students who attended at least one sports game that wasn't baseball
3. Students who never attended any sports games

Note – you should not be writing Python code for this! The goal of this task is to translate English descriptions of what we're trying to accomplish into set operations.

Task 2 & 3:

These next two tasks share some common information:

Suppose we've got a list of cities and states, where each element in the list is a **string** that looks like the following:

Annapolis, Maryland
Augusta, Maine
Elizabeth City, North Carolina
Kansas City, Missouri
Baltimore, Maryland
Raleigh, North Carolina
Denver, Colorado

2)

Write a function, `all_states(states_list)` that prints out all states in the list. However, your function should never print out a state more than once.

From the previous data, we'd expect it to print:

Maryland

Maine

North Carolina

Missouri

Colorado

The signature of this function is `(list) ---> None`.

3)

Write a function, `unique_states(states_list)` that prints out all states that only show up in the list once.

From the previous file, we'd expect it to print:

Maine

Missouri

Colorado

The signature of this function is `(list) ---> None`.