Unit 3 – Lesson 3: Booleans

Try it:

```
n = int(input("a number: "))

if (n >= 0):
   if (n <= 100):
     print ("Grade is valid")
     print("No error detected\n")

print ("Done")
```

- What does it do?

Try it:

```
n = int(input("a number: "))

if (n >= 0 and n <= 100):
    print ("Grade is valid")
    print("No error detected\n")

print ("Done")
```

- What does it do?

and - *Both* conditions must be true

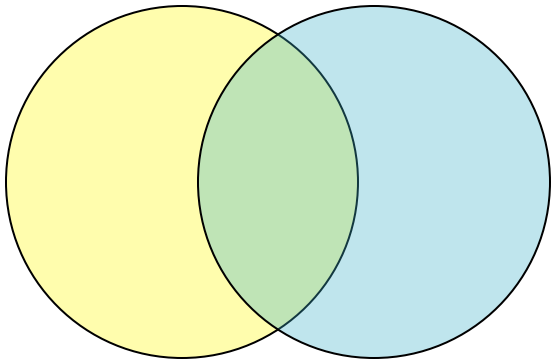
```
if (gr >=70 and gr <80):
  print "C"
```

What happens if:

gr = 80?

gr = 90?

gr = 70?

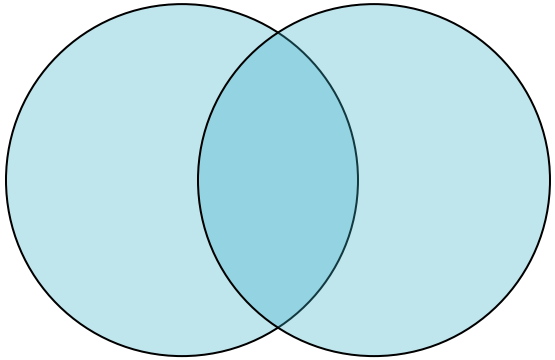


or – At least one must be true

```
if (gr < 0 or gr > 100):
    print ("Not a correct grade")
```

What if gr = 50?

gr = 110?



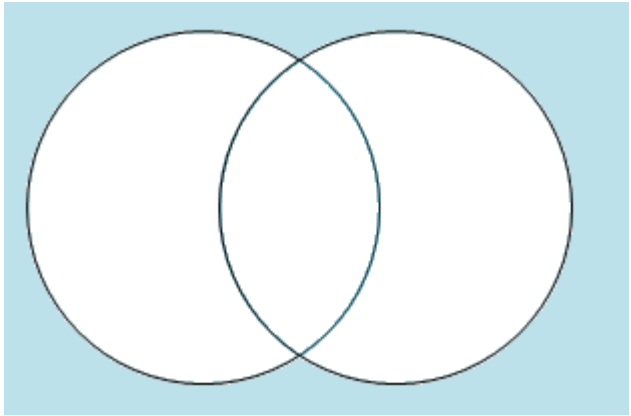
Is there a condition that makes BOTH true?

not – takes the opposite

```
if (not (grade >= 85)):
      print(str(grade)),
      print (" is not an A or B")
```

What if **x = 90**?

x = 77?



Why are they called Booleans?

George Boole

- Mathematician that lived in the 1800's
- Invented the logic now used in computer science

Vocabulary

and	Tests if both conditions are true.
Boolean	Keyword used to join test conditions in if-statements.
not	Takes the opposite.
or	Tests if at least one condition is true.