Python: Some Basics (contd)
Logical Operators

- Let $a$ and $b$ are two boolean variables
- $\text{not } a$:
  - True if $a$ is false
  - False if $a$ is true
- $a \text{ and } b$
  - True if both are true
- $a \text{ or } b$
  - True if either or both are true
Strings

- letters, special characters, spaces, digits
- enclose in quotation marks or single quotes
  
  ```
  hi = "hello there"
  
  ```

- concatenate strings
  ```
  name = "ana"
  
  greet = hi + name
  
  greeting = hi + " " + name
  ```

Conditional (revisit)

```
if <condition>:
    <expression>
    <expression>
    ...

if <condition>:
    <expression>
    <expression>
    ...
else:
    <expression>
    <expression>
    ...

if <condition>:
    <expression>
    <expression>
    ...
elif <condition>:
    <expression>
    <expression>
    ...
else:
    <expression>
    <expression>
    ...
```

Control Flow: While Loop

```
while <condition>:
    <expression>
    <expression>
    ...

- <condition> evaluates to a Boolean
- if <condition> is True, do all the steps inside the while code block
- check <condition> again
- repeat until <condition> is False
```
Control Flow: For Loop

```
for <variable> in range(<some_num>):
    <expression>
    <expression>
    ...
```

- each time through the loop, `<variable>` takes a value
- first time, `<variable>` starts at the smallest value
- next time, `<variable>` gets the prev value + 1
- etc.

Control Flow: For Loop

range(start, stop, step)

- default values are start = 0 and step = 1 and optional
- loop until value is stop - 1

```python
mysum = 0
for i in range(7, 10):
    mysum += i
print(mysum)

mysum = 0
for i in range(5, 11, 2):
    mysum += i
print(mysum)
```

Break Statement

- immediately exits whatever loop it is in
- skips remaining expressions in code block
- exits only innermost loop!

```python
while <condition_1>:
    while <condition_2>:
        <expression_a>
        break
        <expression_b>
    <expression_c>
```

Comment Statement

Improves readability of the program.
# indicates that the following text is comment
# statement(s).

# This computes percentage of marks, where max
# marks is 50

percent=marks*100/50  # percent is a float value