

Introduction to Computer Programming

2.2 User input & nested conditionals - Demos



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Example

The volume control on a keyboard has a 'volume up' and 'volume down' button.

We will represent these buttons as inputs from a user:

- u : increase volume by 1
- d : decrease volume by 1

Write a program that shifts the current volume up or down depending on the input from the user.



```
In [7]: 1 volume = 6
        2
        3 control = input('volume control ')
        4
        5 if control == 'u':
        6     volume += 1
        7
        8 elif control == 'd':
        9     volume -= 1
       10
       11 print(volume)
```

```
volume control u
7
```

Example

Write a program that checks a number, x , and:

- prints "positive" if the number is positive
- prints "negative" if the number is negative

In [9]:

```
1 n = 100
2
3 if n > 0:
4     print('positive')
5
6 elif n < 0:
7     print('negative')
8
9
10
```

positive

If the number is positive the program should *also* print:

- "square" if x is a square number
(a number of the form $x = n^2$ where n is an integer)
- "not square" otherwise

In [10]:

```
1 n = 100
2
3 if n > 0:
4     print('positive')
5
6     if n**(1/2) == int(n**(1/2)):
7         print('square')
8
9     else:
10        print('not square')
11
12 elif n < 0:
13
14        print('negative')
15
```

positive
square

Example

How could we edit the volume control program in the previous example to prevent the volume from ever going outside of the range 0 to 10?

```
In [12]: 1 volume = 6
          2
          3 control = input('volume control ')
          4
          5 if control == 'u':
          6     if volume < 10:
          7         volume += 1
          8
          9 elif control == 'd':
         10     if volume > 0:
         11         volume -= 1
         12
         13 print(volume)
```

```
volume control d
5
```

```
In [13]: 1 volume = 6
          2
          3 control = input('volume control ')
          4
          5 if control == 'u' and volume < 10:
          6     volume += 1
          7
          8 elif control == 'd' and volume > 0:
          9     volume -= 1
         10
         11 print(volume)
```

```
volume control 3
6
```

```
In [ ]: 1
```