Intro to Python – Lesson 16

Validations can become a bit more complex when you want to look at allowing only certain characters for an input. For example a name can include upper and lowercase letters along with an ‘ or a -, especially in a last name like “O’Connor-Smith”. Just to spice it up I recently saw a last name of Lee6 – so numbers may be included!!

This is set up using an allowable set of characters and testing to ensure the values are in the set. The first is a customer last name, the second is a phone number.

Many times names are entered as separate inputs for the first name and last name.

```
while True:

        allowed_char = set("ABCDEFGHIJKLMONPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz-'")
        # if the value allows spaces, I usually add it between the upper and lowercase characters.

        # Since this is a string value the Try/Except is not necessary
        CustLastName = input("Customer Last Name: ")

        # Now check the name and make sure it is valid.
        if CustLastName == "":
                print("Customer Name must not be blank. Please re-enter.")
        elif set(CustLastName).issubset(allowed_char) == False:
                print(“Customer Name contains invalid characters. Please re-enter.”)
        else:
                break



while True:

        PhoneNum = input("Enter the customer phone number (999999999): ")

        if PhoneNum == "":
                print("Phone number cannot be blank - Please re-enter.")
        elif len(PhoneNum) != 10:
                print("Phone number must contain 10 digits - Please re-enter.")
        elif PhoneNum.isdigit() == False:  # Rather than a set I used isdigit() to check for numbers.
                print("Phone number must contain numbers only - Please re-enter.")
        else:
                break
```

Here is a program that you can use to practice loops and validations – and a bunch of other things that we have learned along the way.

Computers R Us needs a program to evaluate retail staff on a weekly basis and compare their totals at a regional level.

Input the region name (Must be entered), the salesperson first name and last name separately (Must be entered), their sales for the week (Must be a valid number – cannot exceed 30000.00), and the number of hours they worked during the week (Must be between 10 and 60).

Calculate the gross pay for that employee based on the hourly gross pay and a commission - use a rate of $26.00 per hour, and a commission of 1% on sales. If the commission is less than $250.00, subtract the amount under $250.00 from the gross pay.

Determine a status message that reads “Above Average” if the salesperson sales are greater than 20000.00, “OK” if they are between 10000.00 and 20000.00, and “Below Average” otherwise.

Set up a loop to process increases in sales from 2 to 20% in increments of 2%. Recalculate the commission based on the new percentages and the new gross pay.

```
         1         2         3         4         5
  12345678901234567890123456789012345678901234567890123456
1  Computers R US – Regional Sales Analysis
2
3  Salesperson name: XXXXXXXXXXXXXXXXX Region: XXXXXXXXXXXX
4
5  Salesperson sales: $9,999.99      Gross pay:    $9,999.99
6                                    Commission:     $999.99
7                                    ----------------------
8  Status:        XXXXXXXXXXXXX      Gross pay:    $9,999.99
9
10 Sales increases from 2 to 20%:
11
12      Increase      Commission       Gross Pay
13      ---------------------------------------
14         ##%         $9,999.99       $9,999.99
15                         :
16         ##%         $9,999.99       $9,999.99
17
18 Do you want to process another employee (Y/N): X
```