Python 101

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MAIN MENU - PROGRAM CODE

```
while True:
    a = [ ]
    print ""
    print "Enter base: ",
    b = raw_input()
    print "Enter Number to convert: ",
    num = raw_input()
    b = int(b)
    num = int(num)
    def base(y, k):
        i = 0
        con = True
        while con:
            x = y%(k**(i+1))
            y = y - x
            x = x/(k**i)
            a.append(x)
            i = i + 1
            if y == 0:
                con = False


    base(num, b)
    print str(num) + " becomes ",
    for item in a[::-1]:
        print item,
```

These lines of code create a program that converts normal base 10 numbers to numbers in any other base.

In the first line I create a while loop. This while loop is used to keep the program always running.

I then create an empty array named a. This array will be used later on...

I print an empty line just to space out.

Then I ask the base that the user wants to convert to, and the number they want to convert. To do this I use the raw_input() function.

Then I convert the user inputs to integers using the int() function.

After that I define a function that will convert the numbers. To do that I use def base(x, k). What this means is that x and k are two variable used within the base function.

I then set a variable called i to 0, and I create a boolean called con and I set it to true.

After that I create a while loop that will run while the boolean con is true.

Every time the while loop runs it will check for the mod of the number then user inputed divided by the base the user inputed to the power of what ever i+1 is equal to.

I then set the number the user inputed to it minus the remainder of the previous operation.

After that I divide the remainder by the base the user inputed to the power of whatever i+1 is.

Then I append that number to the array a.

Then i add 1 to i.

Lastly in the function I check if the resultant of me subtracting the remainder out of the number is 0. If it is I then end the while loop, hence ending the function.

Then I run the function using the number inputed and the base inputed; I print the number and what it becomes. To do that I print the array a in reverse using a[::-1]

```
Enter base:  4
Enter Number to convert:  135
135 becomes  2 0 1 3
```

This is the output of the lines of code above.