Python 101

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October 12, 2015

MAIN MENU - PROGRAM CODE

```
c=5112
a=5112
b=2
e=0
ans=""
while c>(b**e):
    m=a%(b**(e+1))
    n=m/(b**e)
    ans=str(n)+ans
    a=a-m
    e=e+1
print ans

c="3111"
l=len(c)
b=4
e=0
ans=0
while e<l:
    ans=ans+int(c[l-1-e])*(b**e)
    e=e+1
print ans
```

First code changes your number from base 4 to base 2

we have to give a definition to the factors that we use in this, c for number, b for base, and etc.

First, we write that our number has to be bigger than a converted base

After, step by step, we are giving a definition to a new factors that at the end will show us a new number in the base that we chose to convert

But in the line ans=str(n)+ans we want our answer to be a string

At the end we need a basic command print ans to show us our answer, therefore our converted number from Base 4 to Base 2

Second code is used to convert numbers from Base 4 to Base 10

Actually, this code is pretty same than one that we had before, but here we give a definition L with command len() that means we return the length (the number of items)

To find the answer we have to take our number as an integer

And after we right a formula for our exponent

The easiest and the last step is to print ans

And work is done

```
Enter base:  4
Enter Number to convert:  "3111"
3111 becomes 213
```