Web Mining (CSE3024)

Lab Assignment 4

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<u>Question:</u>

Write a python program to perform the following encoding for the ODD numbers between 1 – 30
i) Elias Gamma
ii) Elias Delta
iii) Golomb (b = 10)

Code:

```python
#!/usr/bin/python
from math import log,ceil
log2 = lambda x: log(x,2)
def binary(x,l=1):
    fmt = '{0:0%db}' % l
    return fmt.format(x)
def unary(x):
    return x*'1'+'0'
def elias_generic(lencoding, x):
    if x == 0: return '0'
    l = 1+int(log2(x))
    a = x - 2**(int(log2(x)))
    k = int(log2(x))
    return lencoding(l) + binary(a,k)
def golomb(b, x):
    q = int((x) / b)
    r = int((x) % b)
    l = int(ceil(log2(b)))
    #print q,r,l
    return unary(q) + binary(r, l)
def elias_gamma(x):
```

```python
    return elias_generic(unary, x)
def elias_delta(x):
    return elias_generic(elias_gamma,x)
print("     i: Elias Gamma: Elias Delta: Golomb")
for i in range(31):
    if(i%2!=0):
        print("%5d: %-10s : %-10s : %-10s" %(i,
elias_gamma(i),elias_delta(i), golomb(10,i)))
```


Output:

```
>>>
 RESTART: C:/Users/Kritika Mishra/Desktop/5th Semester/Web Mining/Lab/encoding1.
py
     i: Elias Gamma: Elias Delta: Golomb
    1: 100        : 1000       : 00001
    3: 1101       : 11001      : 00011
    5: 111001     : 110101     : 00101
    7: 111011     : 110111     : 00111
    9: 11110001   : 111000001  : 01001
   11: 11110011   : 111000011  : 100001
   13: 11110101   : 111000101  : 100011
   15: 11110111   : 111000111  : 100101
   17: 1111100001 : 1110010001 : 100111
   19: 1111100011 : 1110010011 : 101001
   21: 1111100101 : 1110010101 : 1100001
   23: 1111100111 : 1110010111 : 1100011
   25: 1111101001 : 1110011001 : 1100101
   27: 1111101011 : 1110011011 : 1100111
   29: 1111101101 : 1110011101 : 1101001
 >>>
```