82-CRIPT-cesar

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```
In [5]: alfb = "ABCDEFGHIJKLMNOPQRSTUVWXYZ"
```

```
In [6]: texto = "Through the use of abstraction and logical reasoning, mathematics developed fr
```

```
In [7]: print map(ord,[x for x in alfb])
```

```
[65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88
```

```
In [8]: print map(chr,map(ord,[x for x in alfb]))
```

```
['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S'
```

```
In [10]: from string import *
         def limpiar(texto,alfb):
             L = map(ord,[x.capitalize() for x in list(texto)])
             L1 = [item for item in L if item in map(ord,[x for x in alfb])]
             C1 = join(map(chr,L1),sep = "")
             return C1
```

```
In [11]: limpiar(texto,alfb)
```

```
Out[11]: 'THROUGHTHEUSEOFABSTRACTIONANDLOGICALREASONINGMATHEMATICSDEVELOPEDFROMCOUNTINGCALCULAT
```

Cifra de César

```
In [12]: def encriptar_cesar(C,k):
             L = list(C)
             L1 = map(ord,L)
             L2 = [(item+k)%256 for item in L1]
             print L2
             C1 = join(map(chr,L2),sep = "")
             return C1
```

```
In [13]: encriptar_cesar(texto,5)
```

```
[89, 109, 119, 116, 122, 108, 109, 37, 121, 109, 106, 37, 122, 120, 106, 37, 116, 107, 37, 102
```

```
Out[13]: 'Ymwtzlm%ymj%zxj%tk%fgxywfhynts%fsi%qtlnhfq%wjfxtsnsl1%rfymjrfynhx%ij{jqtuji%kwtr%htzs
```

```
In [9]: encriptar_cesar(encriptar_cesar(texto,5),251)
```

```
Out[9]: "Through the use of abstraction and logical reasoning, mathematics developed from coun
```

```
In [10]: encriptar_cesar(limpiar(texto,alfb),5)
```

```
Out[10]: 'YMWTZLMYMYJZXJTKFGXYWFHYNTSFSIQTLNHFQWJFXTSNSLRFYMJRFYNHXIJ[JQTUJIKWTRHTZSYNSLHFQHZQF
```

```
In [11]: encriptar_cesar(encriptar_cesar(limpiar(texto,alfb),5),251)
```

```
Out[11]: 'THROUGHTHEUSEOFABSTRACTIONANDLOGICALREASONINGMATHEMATICSDEVELOPEDFROMCOUNTINGCALCULA
```

Análisis de frecuencias

```
In [12]: def analisis_frec(T):
             frecuencias = {}
             N = len(T)
             for letra in T:
                 if letra in frecuencias:
                     frecuencias[letra] += (1/N).n()
                 else:
                     frecuencias[letra]=(1/N).n()
             return frecuencias
```

```
In [13]: dicc = analisis_frec(encriptar_cesar(limpiar(texto,alfb),5));dicc
```

```
Out[13]: {'F': 0.107212475633528,
          'G': 0.00974658869395711,
          'H': 0.0565302144249513,
          'I': 0.0311890838206628,
          'J': 0.115009746588694,
          'K': 0.0175438596491228,
          'L': 0.0155945419103314,
          'M': 0.0409356725146199,
          'N': 0.0818713450292398,
          'O': 0.00194931773879142,
          'P': 0.00389863547758285,
          'Q': 0.0350877192982456,
          'R': 0.0409356725146199,
          'S': 0.0682261208576998,
          'T': 0.0584795321637427,
          'U': 0.0194931773879142,
          'W': 0.0506822612085770,
          'X': 0.0740740740740741,
          'Y': 0.107212475633528,
          'Z': 0.0233918128654971,
          '[': 0.0136452241715400,
          '\\': 0.00974658869395711,
          ']': 0.00194931773879142,
          '^': 0.0155945419103314}
```

```
In [14]: def invertir(dicc):
             dict_inv = {}
             for key in dicc:
                 dict_inv[dicc[key]] = ord(key)
             return dict_inv

In [15]: dicc2 = invertir(dicc);dicc2

Out[15]: {0.00194931773879142: 93,
          0.00389863547758285: 80,
          0.00974658869395711: 92,
          0.0136452241715400: 91,
          0.0155945419103314: 94,
          0.0175438596491228: 75,
          0.0194931773879142: 85,
          0.0233918128654971: 90,
          0.0311890838206628: 73,
          0.0350877192982456: 81,
          0.0409356725146199: 82,
          0.0506822612085770: 87,
          0.0565302144249513: 72,
          0.0584795321637427: 84,
          0.0682261208576998: 83,
          0.0740740740740741: 88,
          0.0818713450292398: 78,
          0.107212475633528: 89,
          0.115009746588694: 74}

In [16]: L = dicc2.items();L

Out[16]: [(0.0155945419103314, 94),
          (0.0682261208576998, 83),
          (0.00194931773879142, 93),
          (0.115009746588694, 74),
          (0.0350877192982456, 81),
          (0.0136452241715400, 91),
          (0.0740740740740741, 88),
          (0.0506822612085770, 87),
          (0.0311890838206628, 73),
          (0.0565302144249513, 72),
          (0.107212475633528, 89),
          (0.0584795321637427, 84),
          (0.0233918128654971, 90),
          (0.0409356725146199, 82),
          (0.00974658869395711, 92),
          (0.0175438596491228, 75),
          (0.0194931773879142, 85),
          (0.00389863547758285, 80),
          (0.0818713450292398, 78)]
```

3

```
In [17]: L.sort(reverse = True);L

Out[17]: [(0.115009746588694, 74),
          (0.107212475633528, 89),
          (0.0818713450292398, 78),
          (0.0740740740740741, 88),
          (0.0682261208576998, 83),
          (0.0584795321637427, 84),
          (0.0565302144249513, 72),
          (0.0506822612085770, 87),
          (0.0409356725146199, 82),
          (0.0350877192982456, 81),
          (0.0311890838206628, 73),
          (0.0233918128654971, 90),
          (0.0194931773879142, 85),
          (0.0175438596491228, 75),
          (0.0155945419103314, 94),
          (0.0136452241715400, 91),
          (0.00974658869395711, 92),
          (0.00389863547758285, 80),
          (0.00194931773879142, 93)]

In [1]: ord('E')

Out[1]: 69
```

La letra m'as frecuente en inglés es la "E", que tiene el número 69 y le correponde depués de encriptada el número 74. Entonces la clave es el 5.

Puedes leer sobre las frecuencias de las letras en inglés en Frecuencias.

```
In [2]: ord?
```