Esoteric Languages

An esoteric programming language is a programming language designed to test the boundaries of computer programming language design, as a proof of concept, as software art, as a hacking interface to another language, or as a joke.

This is the one of the most seen challenges in CTF.

Before we start the types I am going to suggest you the wonderful tool which has a ton of esoteric languages. :- https://tio.run/

JSfuck: -

 JSFuck is an esoteric subset of the JavaScript language that uses only six distinct characters in the source code. The characters are `+`, `!`, `(`, `)`, `[`, `]`.

This has many decoder one of my personal favorite is :- https://enkhee-osiris.github.io/Decoder-JSFuck/

Brainfuck: -

Brainfuck is an esoteric programming language created in 1993 by Urban Müller, and is notable for its extreme minimalism. The language consists of only eight simple commands and an instruction pointer. While it is fully Turing complete, it is not intended for practical use, but to challenge and amuse programmers.

This language is easily detectable by its huge use of plus signs, braces, and arrows. There are plenty of online interpreters, like this one: https://copy.sh/brainfuck/ Some example code:

```
++++++++++[>+>+++>+++++++>++++++++++<<<<-]>>>>++++++++++++++++++++++.----------.++++++.---------
-----.++++++++.+++++.-----------.+++++++++++.-----------------.+++++++++++++++.----------------
.++++++++.+++++.--------.+++++++++++++++.------------------.++++++++.
```

Pikalang language: -

Pikalang is a joke esoteric programming language created by Blake Grotewold. It is identical to Brainfuck, except that the instructions are changed into the sounds made by Pikachu from Pokémon. - Wikipedia

Tool used to decrypt :- https://www.dcode.fr/pikalang-language

Example: -

pi pi pi pi pi pi pi pi pi pi pika pipi pi pipi pi pi pi pipi pi pi pi pi pi pi pi pipi pi pi pi pi pi pi pi pi pi pichu pichu pichu pichu ka chu pipi pipi pipi pipi pi pi pi pi pi pi pi pi pi pi pi pi pikachu ka ka ka ka ka ka ka pikachu pi pi pikachu ka ka ka ka ka ka ka ka ka ka pikachu pi pi pi pi pi pi pi pi pi pi pi pikachu ka ka ka ka ka ka ka ka ka ka ka pikachu pi pi pi pi pi pi pi pi pi pi pi pi pikachu ka ka ka ka ka ka ka pikachu

COW: -

This language is easily identified by numerous "MOO" statements and random capitalization. It has an option on https://tio.run/.
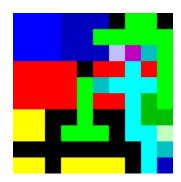
● Malboge

Malbolge is a public domain esoteric programming language invented by Ben Olmstead in 1998, named after the eighth circle of hell in Dante's Inferno, the Malebolge.: http://www.malbolge.doleczek.pl/

Example code: -

```
(=<`#9]~6ZY32Vx/4Rs+0No-&Jk)"Fh}|Bcy?`=*z]Kw%oG4UUS0/@-ejc(:'8dc
```

Piet: -

A graphical programming language. looks like large 8-bit pixels in a variety of colors. Can be interpreted with the tool npiet

- Ook!

   A joke language. Recognizable by . and ?, and !.

   Decoder used :- https://www.splitbrain.org/services/ook

```
Example:-
Ook. Ook? Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook.
Ook.Ook. Ook. Ook. Ook. Ook! Ook? Ook? Ook. Ook. Ook. Ook. Ook. Ook. Ook.
Ook.Ook.Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook? Ook! Ook! Ook? Ook!
Ook? Ook.Ook! Ook. Ook. Ook? Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook. Ook.
Ook. Ook. Ook.Ook. Ook. Ook! Ook? Ook? Ook. Ook. Ook. Ook. Ook. Ook. Ook.
Ook. Ook. Ook. Ook?Ook! Ook! Ook? Ook! Ook? Ook. Ook. Ook. Ook! Ook. Ook.
Ook. Ook. Ook. Ook. Ook
```

Rockstar: -

A language intended to look like song lyrics github link.

below is fizzbuzz in Rockstar:

```
Midnight takes your heart and your soul
While your heart is as high as your soul
Put your heart without your soul into your heart

Give back your heart


Desire is a lovestruck ladykiller
My world is nothing
Fire is ice
Hate is water
Until my world is Desire,
Build my world up
If Midnight taking my world, Fire is nothing and Midnight taking my world,
Hate is nothing
Shout "FizzBuzz!"
Take it to the top

If Midnight taking my world, Fire is nothing
Shout "Fizz!"
Take it to the top

If Midnight taking my world, Hate is nothing
Say "Buzz!"
Take it to the top

Whisper my world.
```

Baudot code: -

The Baudot code [bodo] is an early character encoding for telegraphy invented by Émile Baudot in the 1870s, It was the predecessor to the International Telegraph Alphabet No. 2, the most common teleprinter code in use until the advent of ASCII. It mostly looks like an binary code But, it's not.!

Tool used to decrypt:- https://cryptii.com/pipes/baudot

Example: -
10101 11000 00111 11010 11000 10000 11100 00001