

# Práctica 4

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- 1 Create the simplest **WHILE** program that computes the diverge function (with zero arguments) and compute the codification of its code.

diverger = (0, s)

s:

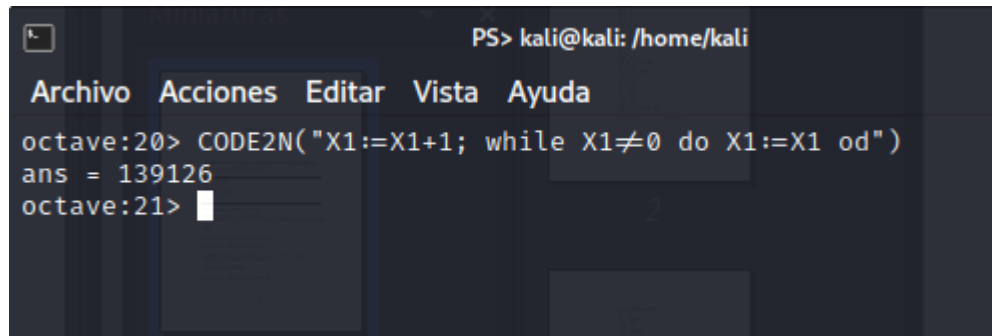
$X_1 := X_1 + 1;$

**while**  $X_1 \neq 0$  **do**

$X_1 := X_1;$

**od**

El bucle entra en divergencia y la codificación es menor.




The screenshot shows a terminal window with a dark background. At the top, the prompt is 'PS> kali@kali: /home/kali'. Below this is a menu bar with the items 'Archivo', 'Acciones', 'Editar', 'Vista', and 'Ayuda'. The terminal shows the following commands and output:

```
octave:20> CODE2N("X1:=X1+1; while X1≠0 do X1:=X1 od")
ans = 139126
octave:21> 
```

## 2 Create an Octave script that enumerates all the vectors.

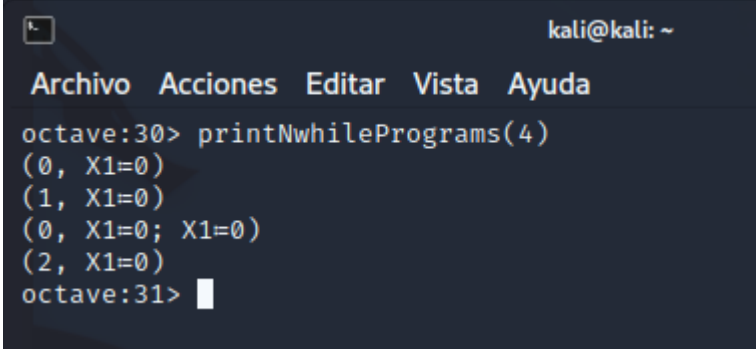
```
function printNvectors(N)
    for i=0:N-1
        disp([ ' ( ' num2str(godeldecoding(i)) ' ) ' ])
        i=i+1;
    end
end
```



The screenshot shows a terminal window with a dark background. At the top, there is a menu bar with the following items: Archivo, Acciones, Editar, Vista, Ayuda. Below the menu bar, the terminal shows the command `octave:12> printNvectors(4)` being executed. The output of the function is displayed as four lines of text: `( )`, `( 0 )`, `( 0 0 )`, and `( 1 )`. The prompt `octave:13>` is visible at the bottom of the terminal window, followed by a cursor.

### 3 Create an Octave script that enumerates all the WHILE programs.

```
{
function practica4.2()
    i=0;
    while(i ≥ 0)
        disp(N2WHILE(i))
        i=i+1;
    end
end
}
```

A screenshot of an Octave terminal window. The window has a dark background and a light-colored title bar. The title bar contains a small icon on the left and the text "kali@kali: ~" on the right. Below the title bar is a menu bar with the items "Archivo", "Acciones", "Editar", "Vista", and "Ayuda". The main area of the window shows the following text:

```
octave:30> printNwhilePrograms(4)
(0, X1=0)
(1, X1=0)
(0, X1=0; X1=0)
(2, X1=0)
octave:31> 
```