

Práctica 4 TALF

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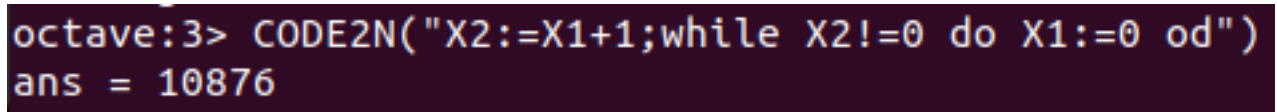
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1 Calculate the lower codification for the WHILE program "Diverge"

As a diverge program, you only need to enter a loop without making it possible to skip, and then it is necessary to do it with the simplest options available, as you want to get the least codification number. An example of that program is:

```
Diverge = (0, s)
s:
  x2:= x1+1;
  while x2!= 0 do
    X1:= 0
  od
```

To proceed with the codification we will use octave scripts. That give us:



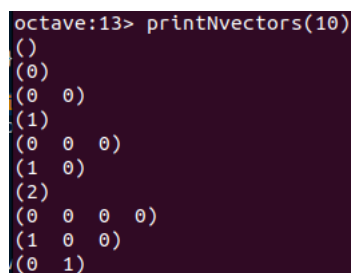
```
octave:3> CODE2N("X2:=X1+1;while X2!=0 do X1:=0 od")
ans = 10876
```

Figure 1: Codification using CODE2N in Octave

2 Octave script that prints all the vectors and an example of execution

Function that represents all the WHILE programs for an index N in Octave.

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



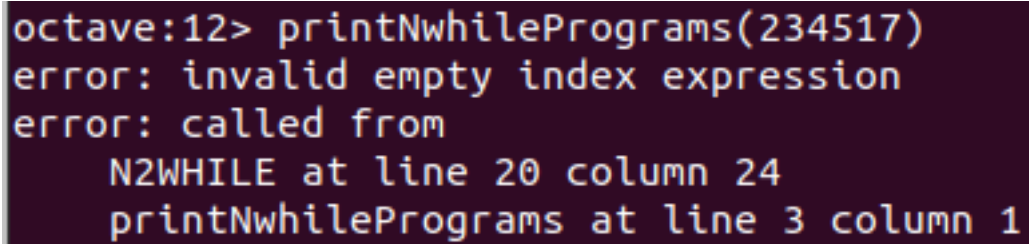
```
octave:13> printNvectors(10)
()
(0)
(0 0)
(1)
(0 0 0)
(1 0)
(2)
(0 0 0 0)
(1 0 0)
(0 1)
```

Figure 2: Example of execution in Octave

3 Octave script that prints all the WHILE programs and an example of execution

Function that represents all the WHILE programs for an index N in Octave.

```
function printNwhilePrograms(N)
for i=0:N-1
disp(N2WHILE(i))
end
end
```

A screenshot of the Octave command window with a dark background and light-colored text. The text shows a command being entered, followed by an error message and the call stack.

```
octave:12> printNwhilePrograms(234517)
error: invalid empty index expression
error: called from
      N2WHILE at line 20 column 24
      printNwhilePrograms at line 3 column 1
```

Figure 3: Example of execution in Octave