Introduction à OCaml

OPTION INFORMATIQUE - TP nº 2.0 - Olivier Reynet

OCaml (suite.ml)

```
let next u = u - 1

let u_imp_for u0 n =
  let u = ref u0 in
  for i = 1 to n do
    u := next !u
  done;
  !u

let u_imp_while u0 n =
  let u = ref u0 and k = ref 0 in
  while !k < n do
    u := next !u;
    incr k
  done;
  !u

let rec u u0 n =
  if n = 0 then u0
  else u (next u0) (n - 1)

let () =
  for i = 0 to 10 do
    assert (u 30 i = u_imp_for 30 i);
    assert (u 30 i = u_imp_while 30 i)
  done
```

Python (suite.py)

```
def next(u):
    return u - 1

def u_imp_for(u0, n):
    terme = u0
    for i in range(1, n + 1):
        terme = next(terme)
    return terme

def u_imp_while(u0, n):
    terme = u0
    i = 0
    while i < n:
        terme = next(terme)
        i += 1
    return terme

def u(u0, n):
    if n == 0:
        return u0
    else:
        return u(u0, n - 1) - 1

for i in range(11):
    assert u(30, i) == u_imp_for(30, i
        )
    assert u(30, i) == u_imp_while(30,
         i)
```