

Calculo de c4-c9

1

c4 if(true):

c5 z ~ U[0,10]

c6 w=3

c7 else:

c8 skip

c9 empty

c

empty

skip

ert[c](f)

f

1+f

if(c1) else(c2) $1 + [c1] \cdot \text{ert}[c1](f) + [c2] \cdot \text{ert}[c2](f)$

$X: \sim \sum_i p_i \cdot a_i \quad 1 + \sum_i p_i \cdot f[X/a_i]$

$$\text{ert}[c8-c9](0) = \text{ert}[c8](\text{ert}[c9](0))$$

$$= \text{ert}[\text{skip}](\text{ert}[\text{empty}](0))$$

$$= \text{ert}[\text{skip}](0)$$

$$= 1 + 0$$

$$= 1$$

$$\text{ert}[c5-c6](0) = \text{ert}[c5](\text{ert}[c6](0))$$

$$= \text{ert}[z: \sim U[0,10]](\text{ert}[w=3](0))$$

$$= \text{ert}[z: \sim U[0,10]](1 + 0)$$

$$= \text{ert}[z: \sim U[0,10]](1)$$

$$= 1 + \sum_{i=0}^{10} \frac{1}{11} * 1[z/i]$$

$$= 1 + \sum_{i=0}^{10} \frac{1}{11} * 1$$

$$= 2$$

2

$$\text{ert}[(4-9)](0) = \text{ert}[\text{if}(\text{true})\{\dots\}\{\dots\}](0)$$

$$= 1 + [\text{true}].\text{ert}[z: \sim U_{[0,10]}; w=3](0) \\ + [\neg \text{true}].\text{ert}[\text{skip}; \text{empty}](0)$$

$$= 1 + \text{ert}[z: \sim U_{[0,10]}; w=3](0) \\ + 0 \cdot \text{ert}[\dots](0)$$

$$= 1 + 2 + 0$$

$$= 3$$

$$\begin{aligned} \text{ert}[\text{skip}t; \text{skip}t](0) &= \text{ert}[\text{skip}t](\text{ert}[\text{skip}t](0)) \\ &= \text{ert}[\text{skip}t](1+0) \\ &= \text{ert}[\text{skip}t](1) \\ &= 1+1 \\ &= 2 \end{aligned}$$

c0 if (X ≥ Y);

c1 skip

c2 skip

c3 else ;

⋮

cq end

c	ext[c](f)
skip	1 + f
if(ξ) {c1}	1 + [ξ] ext[c1](f)
else {c2}	+ [¬ξ] ext[c2](f)

$$\text{ext}[c_0 - (c_q)](0) = \text{ext}[\text{if}(X \geq Y) \{ \dots \} \{ \dots \}](0)$$

$$= 1 + [X \geq Y] \cdot \text{ext}[\text{skip}; \text{skip}](0) \\ + [\neg X \geq Y] \cdot \text{ext}[c_4 - (c_q)](0)$$

$$= 1 + [X \geq Y] \cdot 2 + [X < Y] \cdot 3$$

=

Nota:

la v.a. Uniforme, tiene soporte
en los naturales

Problema 1

```

c0      if (x ≥ y):
c1          skip
c2          skip
c3      else:
c4          if (true):
c5              z = U[0, 10]
c6              w = 3
c7      else:
c8          skip
c9          empty

```

$$ert[c_0 - c_9](0) = 1 + [x \geq y] \cdot 2 + [x < y] \cdot 3$$

Desarrollo en las siguientes páginas