

Ejercicio 2

a) pred esDescompresion (cod:Codigo, pal:Palabra) {
 $|pal| = \text{sumaCaracteresAnteriores}(\text{cod}, |\text{cod}|) \wedge$
 $(\forall k: \mathbb{Z}) (0 \leq k < |\text{cod}| \rightarrow_L$
 $(\forall j: \mathbb{Z}) (0 \leq j < |\text{cod}[k]_0| \rightarrow_L$
 $(\forall rep: \mathbb{Z}) (0 \leq rep < \text{cod}[k]_1 \rightarrow_L$
 $\text{cod}[k]_0[j] = \text{pal}[\text{sumaCaracteresAnteriores}(\text{cod}, k)$
 $+ j + (rep * |\text{cod}[k]_0[j]|)]$
 $)))$
 $}$

aux sumaCaracteresAnteriores (cod, i): $\mathbb{Z} =$

$$\sum_{k=0}^{i-1} |\text{cod}[k]_0| * \text{cod}[k]_1$$

b) procu comprimir (in pal: Palabra, out cod: Codigo) {
 Pre {true}
 Post { esDescompresion (cod, pal) \wedge noHayFragmentosVacuos(cod)
 \wedge noHayRepeticionesNulas (cod) }
 $}$

pred noHayFragmentosVacuos (cod: Codigo) {
 $(\forall k: \mathbb{Z}) (0 \leq k < |\text{cod}| \rightarrow_L |\text{cod}[k]_0| > 0)$
 $}$

pred noHayRepeticionesNulas (cod: Codigo) {
 $(\forall k: \mathbb{Z}) (0 \leq k < |\text{cod}| \rightarrow_L \text{cod}[k]_1 > 0$
 $}$

c)

~~proc optimizerCodigo (inout: Cód~~

proc optimizerCodigo (inout cod: Codigo) {

Pre { cod = CODo }

Post { $(\exists \text{pal: Palabra}) (\text{esDescompresion}(\text{pal}, \text{CODo}) \wedge$

$\text{esDescompresion}(\text{pal}, \text{cod})) \wedge$

$\text{costo}(\text{cod}) \leq \text{costo}(\text{CODo})$

}

}