Ejercicio 14

Correctitud

- $Pre \longrightarrow wp(\text{codigo previo a los ciclos}, P_c)$
- $P_c \longrightarrow wp(ciclo1; ciclo2, Q_c)$
- $Q_c \longrightarrow wp(\text{codigo posterior a los ciclos}, Post)$

Por monotonía sabemos que Pre $\longrightarrow$wp(programa completo, Post)

Demostración

Datos

- $Pre \equiv |r| = |a| + |b| \land r = R_0$
- $Post \equiv |r| = |R_0| \land ((\forall j : \mathbb{Z})\ 0 \leq j < |a| \ \longrightarrow_L r[j] = a[j]) \land ((\forall j : \mathbb{Z})\ 0 \leq j < |b| \ \longrightarrow_L r[j + |a|] = b[j])$
- $P_c \equiv |r| = |a| + |b| \land r = R_0 \land i := 0$
- $Q_c \equiv |r| = |R_0| \land ((\forall j : \mathbb{Z})\ 0 \leq j < |a| \ \longrightarrow_L r[j] = a[j]) \land ((\forall j : \mathbb{Z})\ 0 \leq j < |b| \ \longrightarrow_L r[j + |a|] = b[j])$

$Pre \longrightarrow wp(\textbf{codigo previo al ciclo}, P_c)$

$wp(i := 0, |r| = |a| + |b| \land r = R_0 \land i := 0) \equiv$
$|r| = |a| + |b| \land r = R_0$
$Pre \longrightarrow \text{true} \equiv$
$|r| = |a| + |b| \land r = R_0 \longrightarrow |r| = |a| + |b| \land r = R_0 \equiv \text{true}$

$Q_c \longrightarrow wp(\textbf{codigo posterior al ciclo}, Post)$

$Q_c \longrightarrow wp(\text{codigo posterior al ciclo}, Post) \equiv$

$|r| = |R_0| \land ((\forall j : \mathbb{Z})\ 0 \leq j < |a| \ \longrightarrow_L r[j] = a[j]) \land ((\forall j : \mathbb{Z})\ 0 \leq j < |b| \ \longrightarrow_L r[j + |a|] = b[j]) \longrightarrow$
$|r| = |R_0| \land ((\forall j : \mathbb{Z})\ 0 \leq j < |a| \ \longrightarrow_L r[j] = a[j]) \land ((\forall j : \mathbb{Z})\ 0 \leq j < |b| \ \longrightarrow_L r[j + |a|] = b[j]) \equiv \text{true}$

$P_c \longrightarrow wp(ciclo1; ciclo2, Q_c)$

ciclo1.pdf ciclo2.pdf