
MERGESORT SHARED RESOURCE

CADT MergeSortComp

OPERATIONS

ACTION SetLeft: $ANY[i]$

ACTION SetRight: $ANY[i]$

ACTION GetResult: $ANY[o]$

SEMANTICS

DOMAIN:

STATE: $MergeSortComp = (right : ANY \times left : ANY)$

TYPE: $EOD \in ANY$

INVARIANT: $EOD \neq nil \wedge (\forall o \in ANT \bullet EOD > o)$

INITIAL: $self.left = nil \wedge self.right = nil$

PRE: $(obj \neq nil)$

CPRE: $(self.left = nil)$

SetLeft(obj)

POST: $self.left = obj \wedge self.right = self^{in}.right$

PRE: $(obj \neq nil)$

CPRE: $(self.right = nil)$

SetRight(obj)

POST: $self.right = obj \wedge self.left = self^{in}.left$

PRE: true

CPRE: $self.right \neq nil \wedge self.left \neq nil$

getResult(res)

POST: $(res = self.left \wedge self.left \leq self.right) \vee (res = self.right \wedge self.right < self.left) \wedge self.left = self^{in}.left \wedge self.right = self^{in}.right$