MACHINE *scheduler*
SETS
$PID = \{process1, process2, process3, process4, process5\}$
VARIABLES
$active, ready, waiting$
INVARIANT
$active \subseteq PID$
$\wedge\ ready \subseteq PID$
$\wedge\ waiting \subseteq PID$
$\wedge\ (ready \cap waiting) = \emptyset$
$\wedge\ active \cap (ready \cup waiting) = \emptyset$
$\wedge\ \mathbf{card}(active) \leq 1$
$\wedge\ ((active = \emptyset\ ) \Rightarrow (ready = \emptyset\ ))$
INITIALISATION
$active := \emptyset\ ||\ ready := \emptyset\ ||\ waiting := \emptyset$
OPERATIONS
new(pp) =
PRE
$pp : (PID - (active \cup (ready \cup waiting)))$
THEN
$waiting := waiting \cup \{pp\}$
END;
delete(pp) =
PRE $pp \in waiting$ **THEN**
$waiting := waiting - \{pp\}$
END;
activate(rr) =
PRE $rr \in waiting$ **THEN**
$waiting := waiting - \{rr\}\ ||$
IF $(active = \emptyset\ )$ **THEN**
$active := \{rr\}$
ELSE
$ready := ready \cup \{rr\}$
END
END;
swap(rr) =
PRE $active \neq \emptyset \wedge rr \in ready$ **THEN**
$waiting := waiting \cup active\ ||$
$ready := ready - \{rr\}\ ||$
$active := \{rr\}$
END ;
deactivate =
PRE $active \neq \emptyset$ **THEN**
IF $(ready = \emptyset\ )$ **THEN**
$active := \emptyset$
ELSE
ANY pp **WHERE** $pp \in ready$ **THEN**

$active := \{pp\}$ ||
$ready := ready - \{pp\}$

END

END

END

END