separate (Dining_Philosophers)

task body Waiter is
  entry Wait(ID); -- used to requeue philosophers
  eating : array (ID) of Boolean; -- who is eating
  want  : array (ID) of Boolean; -- who wants to eat
  go    : array (ID) of Boolean; -- who can go now

begin
  for j in ID loop -- initialize the arrays
    eating(j) := False; want(j) := False;
  end loop;

  loop -- basic server loop
    select
      accept Pickup(i : in ID) do -- DP(i) needs forks
        if not(eating(left(i)) or eating(right(i))) then
          eating(i) := True;
        else
          want(i) := True; requeue Wait(i);
        end if;
      end;
    or
      accept Putdown(i : in ID) do -- DP(i) is done
        eating(i) := False;
      end;
      end if;
    or
      terminate; -- quit when philosophers have quit
    end select;
  end loop;
end Waiter;

Figure 8.19  Dining philosophers in Ada: Waiter task.

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