Q: A function named **ones_count** has a single formal parameter that is an **std_logic_vector**. The function returns an **integer**. The integer specifies the number of elements that are 1's in the actual vector passed to the function. Write the function. Write a design description of a five-input majority voting circuit. The circuit uses the function **ones_count**. The five-input majority voting circuit has the following entity declaration. For this example, **if the number of 1's ≧ 3** then the output **maj = 1**.

```
library ieee;
use ieee.std_logic_1164.all;

entity majority is
port(voters : in std_logic_vector(4 downto 0);
      maj : out std_logic);
end majority;

architecture behavioral of majority is

function ones_count (slv : std_logic_vector) return integer is

      variable count: integer := 0;
      begin
         for i in range slv'range loop
            if(slv(i) = '1') then
               count := count + 1;
            end if;
         end loop;
      end;
      return count;




end ones_count;

begin - - architecture

process (voters)
begin

   maj <= '0';
   if(ones_count(voters) >= 3) then
      maj <= '1';
   end if;

end process ;

end behavioral;
```