```vhdl
-------------------------------------------------------------------------------
--
--  Purpose:
--
--    Barrel Shifter
--
--  Discussion:
--
--
--  Licensing:
--
--    This code is distributed under the GNU LGPL license.
--
--  Modified:
--
--    2012.04.02
--
--  Author:
--
--    Young W. Lim
--
--  Parameters:
--
--    Input:
--
--    Output:
--------------------------------------------------------------------------------

library STD;
use STD.textio.all;

library IEEE;
use IEEE.std_logic_1164.all;
use IEEE.numeric_std.all;


entity bshift is
  generic (
    WD     : in natural := 32;
    SH     : in natural := 5 );

  port (
    di    : in  std_logic_vector (WD-1 downto 0) := (others=>'0');
    nbit   : in  std_logic_vector (SH-1 downto 0) := (others=>'0');
    dq   : out std_logic_vector (WD-1 downto 0) := (others=>'0'));

end bshift;

architecture rtl of bshift is

begin

  bshft: process (di, nbit)
    variable s      : std_logic := '0';
    variable diX   : std_logic_vector (2*WD-1 downto 0) := (others=>'0');
    variable offset : natural := 0;
    variable result : std_logic_vector (WD-1 downto 0) := (others=>'0');
  begin  -- process bshft

    s := di(WD-1);
    for i in 2*WD-1 downto WD loop
      diX(i) := s;
    end loop;  -- i
    diX := diX(2*WD-1 downto WD) & di (WD-1 downto 0);

    offset := to_integer(unsigned(nbit));

    result := diX(WD-1+offset  downto offset);

    dq <= result;
  end process;

end rtl;
```