

# D-Flip-Flop in VHDL

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

entity dFF_simple is
port (
    res_n      : in  std_logic;
    clk_i      : in  std_logic;
    enable_i   : in  std_logic;
    d_i        : in  std_logic;
    q_o        : out std_logic
);
end entity;

architecture rtl of dFF_simple is
begin

dFF_p: process(res_n, clk_i)
begin
    if (res_n = '0') then
        q_o <= '0';
    elsif (clk_i'event and clk_i = '1') then
        if (enable_i = '1') then
            q_o <= d_i;
        end if;
    end if;
end process;
end rtl;

configuration dFF_simple_conf of dFF_simple is
    for rtl
    end for;
end dFF_simple_conf;
```

