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--
-- VHDL Architecture Bachelor.MAIN_MUX.STUDENT
--
-- Created:
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--          at - 13:08:20 31.05.2023
--
-- using Mentor Graphics HDL Designer(TM) 2019.2 (Build 5)
--
ARCHITECTURE STUDENT OF MAIN_MUX IS
BEGIN
    mux: process(FW_NCS_F,AF_CLOCK,AF_CLOCK_ADC,FW_CLOCK,AW_CLOCK,
                                    AW_NCS_A,AF_NCS_A,M,AF_MISO)
    -- WARNING IF ERROR IN PHYSIC -> SWITCH CASE METHODE ALEX
    begin
        case M is
            -- init
            when "0000" =>
                ADC_CLOCK <=  '1';
                FR_CLOCK <= (others => '1');
                ADC_NCS <= '1';
                FR_NCS <= (others => '1');
                FRAM_SDI <= (others => '0');
                MISO <= '1';
            -- Read/Write ADC
            when "0010" =>
                ADC_CLOCK <= AW_CLOCK;
                FR_CLOCK <= (others => '1');
                ADC_NCS <= AW_NCS_A;
                --FR_NCS <= (others => '1');
                --FRAM_SDI <= (others => '0');
                MISO <= '1';

            -- ADC to FRAM
            when "1010" =>
                ADC_CLOCK <= AF_CLOCK_ADC;
                FR_CLOCK <= AF_CLOCK;
                ADC_NCS <= AF_NCS_A;
                FR_NCS <= AF_NCS_F;
                FRAM_SDI <= AF_FRAM_SDI;
                MISO <= '1';

            -- ADC to FRAM
            when "1011" =>
                ADC_CLOCK <= '1';
                FR_CLOCK <= (others => '1');
                ADC_NCS <= '1';
                FR_NCS <= (others => '1');
                FRAM_SDI <= (others => '0');
                MISO <= AF_MISO;

            -- read/write FRAM
            when others =>
                MISO <= '1';
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                if M <= "1000" and M >="0100" then
                    --ADC_CLOCK <= '0';
                    FR_CLOCK <= FW_CLOCK;
                    ADC_NCS <= '1';
                    FR_NCS <= FW_NCS_F;
                    FRAM_SDI <= FW_FRAM_SDI;
                else
                    --FR_NCS <= (others => '1');
                    ADC_NCS <= '1';
                    ADC_CLOCK <=  '1';
                    --FR_CLOCK <= (others => '1');
                    FR_CLOCK <= (others => '1');
                    FRAM_SDI <= (others => '0');
                end if;
            end case;
    end process mux;
    --MISO <= '1';
END ARCHITECTURE STUDENT;
```