Practical 2 Part A SISO

Code

```
process(clk,m,load,clear)
variable temp,p:std_logic_vector(3 downto 0);
variable c:integer:=0;
begin
if clear='1'then
q<="0000";
 elsif clk'event and clk='1' then
 c:=c+1;
 if c=2 then
 c:=0;
 case m is
 when "00" => --PIPO
 q<=d;

when "01" => --SIPO
if(load='1') then
temp:=d;

q<="0000";

else
q<="000"&temp(0) ;
temp:='0'&temp(3 downto 1);
end if;
when "10"=> -- SISO
 if (load='1' )
 then temp:="0000";
 q<="0000";
```

```
p:=d;
else
temp:=p(0)&temp(3 downto 1);
q<="000"&temp(0) ;
end if;
when others=>
if(load='1')then
temp:="0000";
q<="0000";
p :=d;
else
temp:=p(0)&temp(3 downto 1);
end if;

end case;

end if;
end if;
end process;
end behavioral;
```

Test Bench Code

```
clear<='1';
        wait for 100 ns;
        clear<='0';
        m<="00";
        d<="1011";
        wait for 100 ns;
        m<="01";
        load<='1';
        wait for 100 ns;
        load<='0';
```

```
        wait for 100 ns;
        m<="10";
        load<='1';
wait for 100 ns;
        load<='0';
        wait for 100 ns;
        m<="11";
        load<='1';
        wait for 100 ns;
        load<='0';
        wait for 100 ns;
```