```
-- 8-Bit Test

-- IN OUT
ram(0) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(1) <= "0000" & "0000" & "10000001";    -- OUT <= ACC
ram(2) <= "0000" & "0000" & "11100000";    -- J

-- IN STORE IN LOAD OUT
ram(0) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(1) <= "0000" & "0000" & "00111111";    -- ram(31) <= ACC
ram(2) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(3) <= "0000" & "0000" & "00011111";    -- ACC <= ram(31)
ram(4) <= "0000" & "0000" & "10000001";    -- OUT <= ACC
-ram(5) <= "0000" & "0000" & "11100000";   -- J 0

-- IN STORE IN ADD OUT
ram(0) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(1) <= "0000" & "0000" & "00111111";    -- ram(31) <= ACC
ram(2) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(3) <= "0000" & "0000" & "01011111";    -- ACC <= ram(31) + ACC
ram(4) <= "0000" & "0000" & "10000001";    -- OUT <= ACC
ram(5) <= "0000" & "0000" & "11100000";    -- J 0

-- IN STORE IN SUB OUT
ram(0) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(1) <= "0000" & "0000" & "00111111";    -- ram(31) <= ACC
ram(2) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(3) <= "0000" & "0000" & "01111111";    -- ACC <= ACC - ram(31)
ram(4) <= "0000" & "0000" & "10000001";    -- OUT <= ACC
ram(5) <= "0000" & "0000" & "11100000";    -- J 0

-- IN STORE IN NAND OUT
ram(0) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(1) <= "0000" & "0000" & "00111111";    -- ram(31) <= ACC
ram(2) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(3) <= "0000" & "0000" & "10011111";    -- ACC <= not ACC and ram(31)
ram(4) <= "0000" & "0000" & "10000001";    -- OUT <= ACC
ram(5) <= "0000" & "0000" & "11100000";    -- J 0
```

```
-- IN JZ JPOS OUT
ram(0) <= "0000" & "0000" & "10000000";    -- ACC <= IN
ram(1) <= "0000" & "0000" & "10100111";    -- JZ -> ram(7)
ram(2) <= "0000" & "0000" & "11001010";    -- JPOS -> ram(10)
ram(3) <= "0000" & "0000" & "00011111";    -- ACC <= ram(31)
ram(4) <= "0000" & "0000" & "10000001";    -- OUT <= ACC
ram(5) <= "0000" & "0000" & "11100000";    -- J 0
ram(7) <= "0000" & "0000" & "00011110";    -- ACC <= ram(30)
ram(8) <= "0000" & "0000" & "10000001";    -- OUT <= ACC
ram(9) <= "0000" & "0000" & "11100000";    -- J 0
ram(10) <= "0000" & "0000" & "00011101";   -- ACC <= ram(29)
ram(11) <= "0000" & "0000" & "10000001";   -- OUT <= ACC
ram(12) <= "0000" & "0000" & "11100000";   -- J 0
ram(29) <= "0000" & "0000" & "00000110";   --ram(29) <= 6
ram(30) <= "0000" & "0000" & "00000100";   --ram(30) <= 4
ram(31) <= "0000" & "0000" & "00000001";   --ram(31) <= 1
```

16-Bit Test

```
-- IN OUT

ram(0) <= "0110" & "000000000000";         -- ACC <= IN
ram(1) <= "0110" & "000000000001";         -- OUT <= ACC
ram(2) <= "1001" & "000000000000";         -- J

-- IN STORE IN LOAD OUT
ram(0) <=”0110” & “000000000000”;          --IN
ram(1) <=”0010” & “000000001111”;          --STORE M[31]
ram(2) <=”0110” & “000000000000”;          --IN
ram(3) <=”0001” & “000000001111”;          --LOAD M[31]
ram(4) <=”0110” & “000000000001”;          --OUT
ram(5) <=”1001” &”000000000001”;           --JUMP M[0]
```