2 BIT COMPARATOR:

A Comparator is a combinational circuit that gives output in terms of A>B, A<B, and A=B. This is entirely expected from the name. A digital comparator's purpose is to compare numbers and represent their relationship with each other.

A comparator used to compare two binary numbers each of two bits is called a 2-bit comparator. It consists of TWO inputs and three outputs to generate less than, equal to, and greater than between two

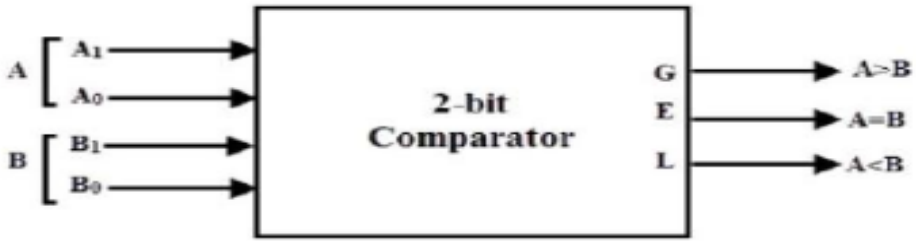

Figure No. 3: Block diagram of 2-Bit Comparator

RTL CODE:

```
module two_bit_comparator(input A, B,output G, e, L);
assign e = (A == B);
assign L = (A < B);
assign G = (A > B);
endmodule
```

TEST BENCH:

```
module testbench;
```

```
  reg A,B;
  wire G,e,L;
  two_bit_comparator C1 (A,B,G,e,L);
  initial
    begin
      $dumpfile(".vcd");
      $dumpvars(1);
    end
  initial
    begin
      A=0;B=0;
      #10 A=0;B=1;
      #10 A=1;B=0;
      #10 A=1;B=1;
    end
  initial
    begin
      #50 $finish();
    end
endmodule
```