47th day

Casting

```
module casting_example;

 int    i;
 real   r;
 byte   b;
 shortint s;
 logic success;

 initial
  begin
  $display("---- Static Casting ----");

  r = 3.2;
  i = int'(r);
    $display("real r = %0f, casted to int = %0d", r, i);

  i = 260;
  b = byte'(i);   // Static cast from int to byte (will truncate)
    $display("int i = %0d, casted to byte = %0d", i, b);  // Output: 4 (because 260
= 0x104, byte keeps only 0x04 msb is truncated)


  s = shortint'(i);  // Cast to 16-bit shortint
  $display("int i = %0d, casted to shortint = %0d", i, s);  // Output: 260
```

```systemverilog
    $display("\n---- Dynamic Casting with $cast ----");


   success = $cast(i, r);   // r is 3.75, cast to int
   if (success)
    $display("Dynamic cast successful: real %0.2f to int %0d", r, i);
   else
    $display("Dynamic cast failed");


   success = $cast(r, "hello"); // invalid cast from string to real
   if (success)
    $display("Dynamic cast success real=%s",r);

  end

endmodule
```

Simulation

```
Compiler version U-2023.03-SP2_Full64; Runtime version U-2023.03-SP2_Full64;   Jun 10 04:45 2025
---- Static Casting ----
real r = 3.200000, casted to int = 3
int i = 260, casted to byte = 4
int i = 260, casted to shortint = 260

---- Dynamic Casting with $cast ----
Dynamic cast successful: real 3.20 to int 3
Dynamic cast success real=   hello
          V C S   S i m u l a t i o n   R e p o r t
Time: 0 ns
CPU Time:      0.460 seconds;      Data structure size:   0.0Mb
Tue Jun 10 04:45:52 2025
```