43rd Day

Queue to array

```
module queue_to_array;

 int my_queue[$] = {10, 20, 30, 40, 50};

 int my_array[];

 initial begin

  my_array = new[my_queue.size()];

  // Copy elements from queue to array
  foreach (my_queue[i])
   begin
   my_array[i] = my_queue[i];
   end

  $display(" Queue  : %p", my_queue);
  $display("Array : %p", my_array);
 end

endmodule
```

Simulation

```
Chronologic VCS simulator copyright 1991-2023
Contains Synopsys proprietary information.
Compiler version U-2023.03-SP2_Full64; Runtime version U-2023.03-SP2_Full64;  May 11 12:26 2025
 Queue  : '{10, 20, 30, 40, 50}
Array : '{10, 20, 30, 40, 50}
          V C S   S i m u l a t i o n   R e p o r t
Time: 0 ns
CPU Time:      0.370 seconds;      Data structure size:   0.0Mb
Sun May 11 12:26:28 2025
Done
```

Array to Queue

```
module array_to_queue;


 int my_array[] ;
 int my_queue[$];


 initial
  begin


   my_array=new[5];


  foreach (my_array[i])
   my_array[i] = (i + 1) * 10; // {10, 20, 30, 40, 50}


  // Copy elements from array to queue
  foreach (my_array[i])
   my_queue.push_back(my_array[i]);
```

```
    $display("Array : %p", my_array);

    $display("Queue : %p", my_queue);

  end


endmodule
```

Simulation

Mailbox and Queue

```
module mailbox_vs_queue;

 mailbox #(int) mbox;
 int q[$];
 int value;

 initial

  begin

  mbox = new();

  q.push_back(10);
  q.push_back(20);
  q.push_back(30);

  mbox.put(13);
  mbox.put(6);
  mbox.put(7);

  $display("Queue Content: %p", q);

  repeat (3)
   begin
   mbox.get(value);
   $display("Mailbox received: %0d", value);
   end
```

```
    end


endmodule
```

Simulation

```
Contains Synopsys proprietary information.
Compiler version U-2023.03-SP2_Full64; Runtime version U-2023.03-SP2_Full64;  May 11 12:47 2025
Queue Content: '{10, 20, 30}
Mailbox received: 13
Mailbox received: 6
Mailbox received: 7
        V C S   S i m u l a t i o n   R e p o r t
Time: 0 ns
CPU Time:      0.340 seconds;      Data structure size:   0.0Mb
Sun May 11 12:47:11 2025
```