**Module: SV for Verification**

**Section:** Arrays **Task:** Associative Arrays

**Task**

Associative Arrays - [Link to EDA Project](https://www.edaplayground.com/x/B78u)

* **Processor Memory:**
  + **Code Snippet:**

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typedef bit[23:0] word; // Create a 24-bit word type

typedef bit[19:0] address; // Create a 20-bit address-space type

module tb;

address PC; // Declare PC that holds address

word mem[address]; // Declare memory for program

word ISR[address]; // Declare ISR

bit rst;

initial begin

if (rst) begin

// reset condition

PC = 0; // PC starts at 0x0

end

else begin

PC = 20'h400; // Set PC for main

mem[PC] = 24'h123456; // Fill memory at 0x400

PC = PC + 1; // Increment PC

mem[PC] = 24'h789ABC; // Fill memory at 0x401

PC = 20'hFFFFF; // Set PC for ISR

mem[PC] = 24'h0F1E2D; // ISR = return from Interrupt

// Diplay Elements

foreach (mem[i]) $display("Array Elements: mem[%0x] = %0x", i, mem[i]);

// Diplay Number of Elements

$display("Number of Elements: %0d", mem.size());

end

end

initial begin

rst = 1;

#30 rst = 0;

end

endmodule

* **Output:**

