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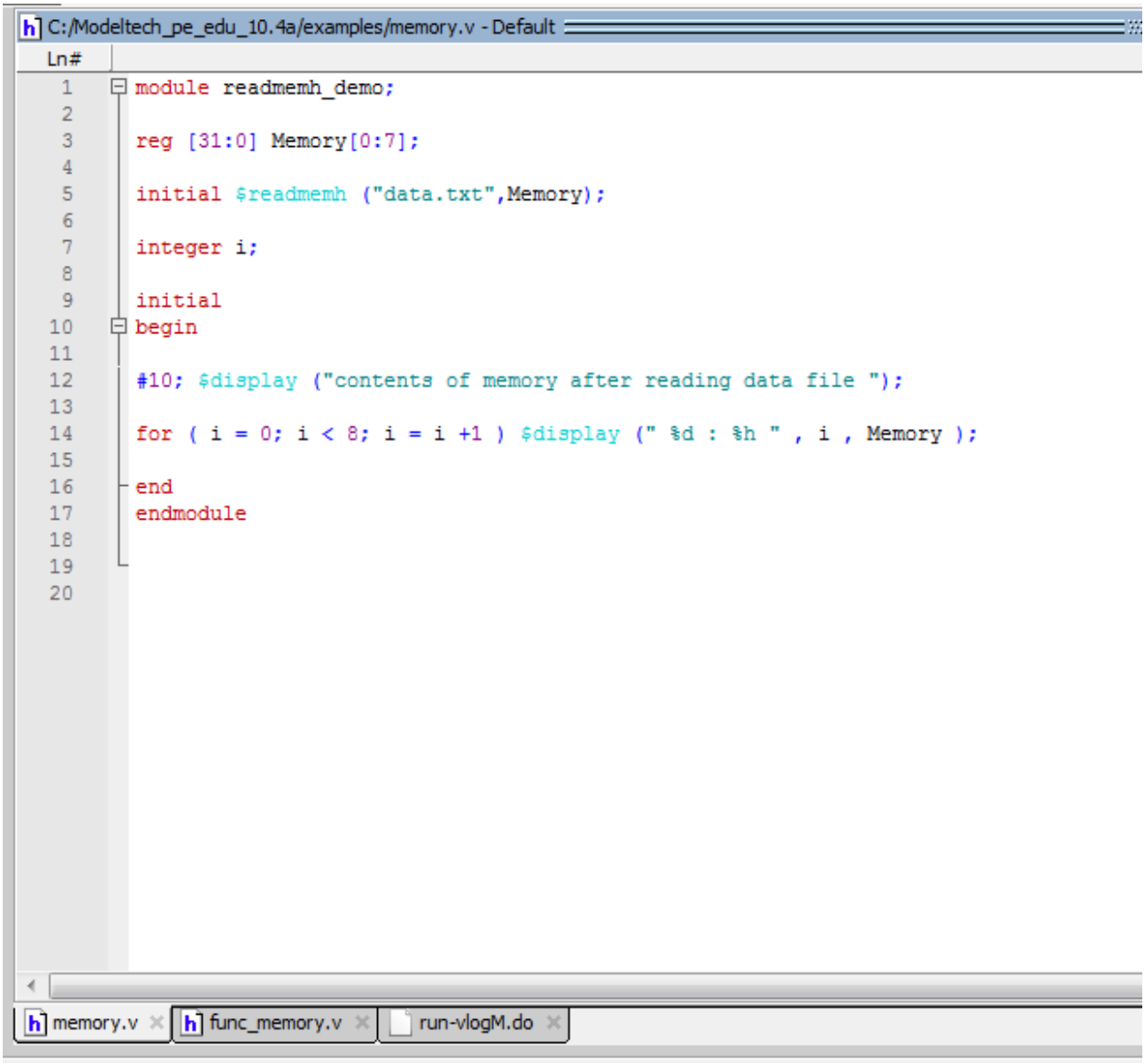
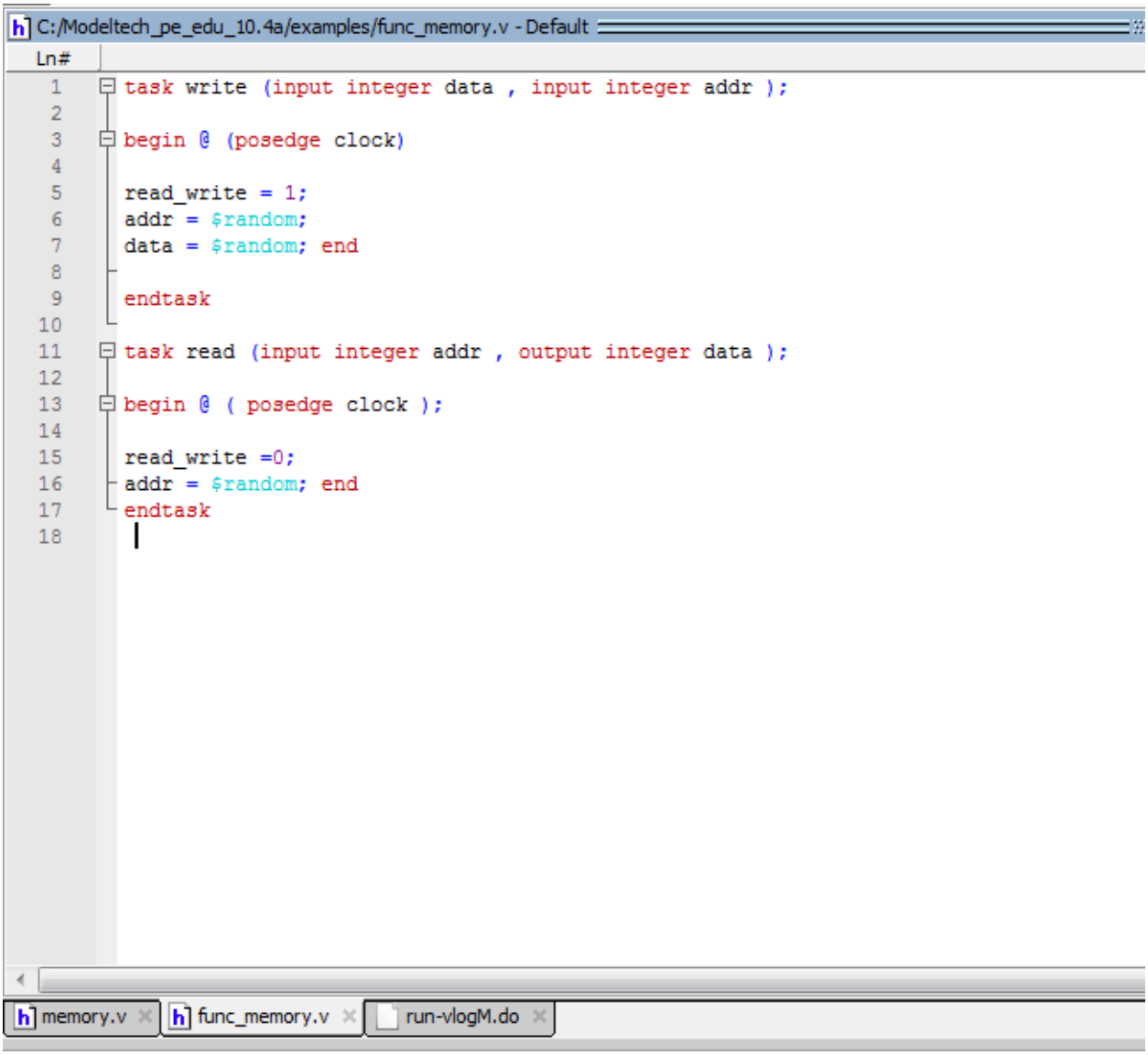
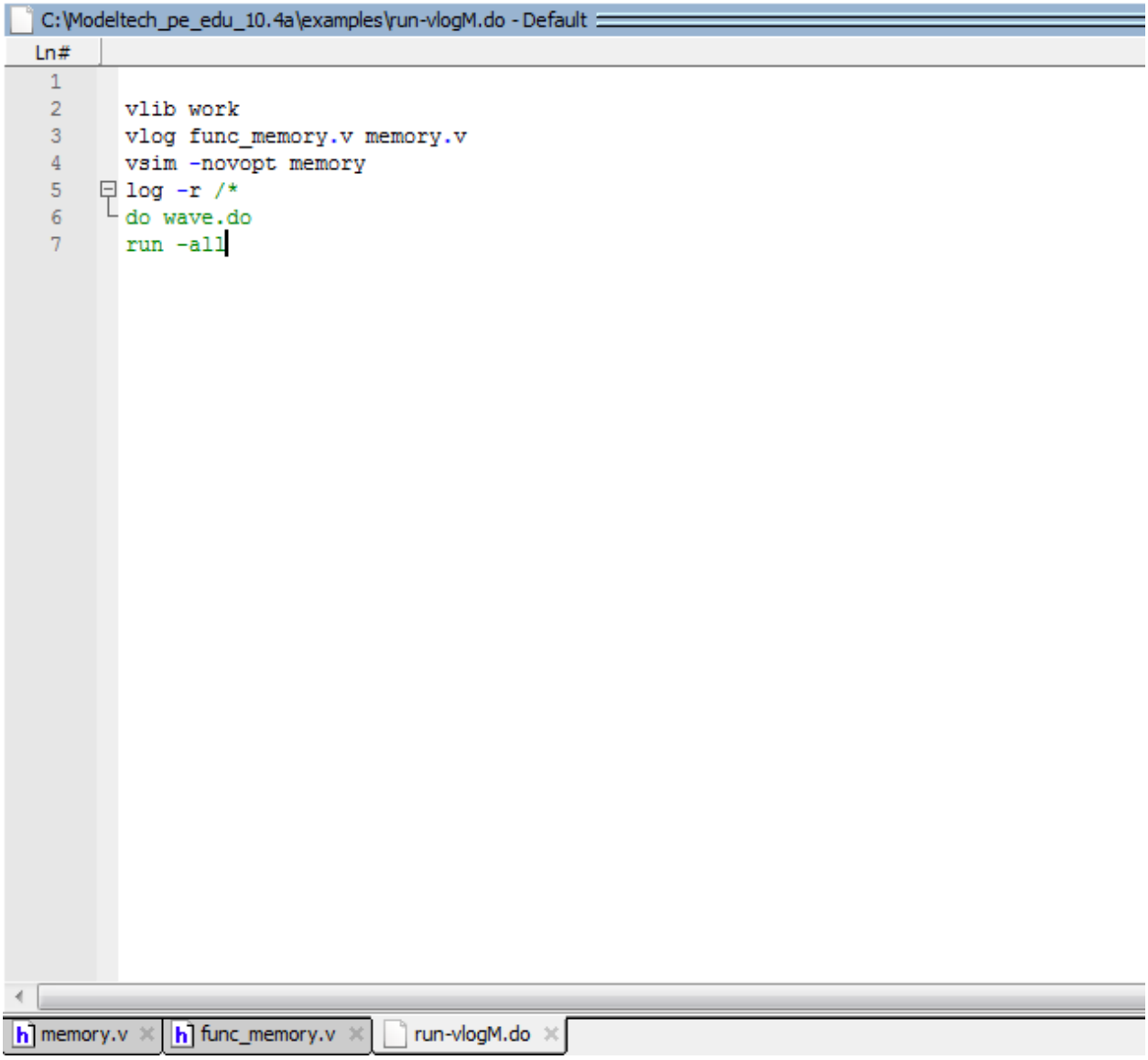
Answer 2

2. Write a verilog module that initializes memory from a file?

- **Read memory initialization data from a file**
- **Initializes the memory**
- **Write output from memory to a file**


C:/Modeltech_pe_edu_10.4a/examples/memory.v - Default
Ln#
1 module readmemh_demo;
2
3 reg [31:0] Memory[0:7];
4
5 initial $readmemh ("data.txt",Memory);
6
7 integer i;
8
9 initial
10 begin
11
12 #10; $display ("contents of memory after reading data file ");
13
14 for (i = 0; i < 8; i = i +1) $display (" %d : %h " , i , Memory);
15
16 end
17 endmodule
18
19
20
memory.v
func_memory.v
run-vlogM.do


C:/Modeltech_pe_edu_10.4a/examples/func_memory.v - Default
Ln#
1 task write (input integer data , input integer addr);
2
3 begin @ (posedge clock)
4
5 read_write = 1;
6 addr = $random;
7 data = $random; end
8
9 endtask
10
11 task read (input integer addr , output integer data);
12
13 begin @ (posedge clock);
14
15 read_write =0;
16 addr = $random; end
17 endtask
18
memory.v
func_memory.v
run-vlogM.do


C:\Modeltech_pe_edu_10.4a\examples\run-vlogM.do - Default
Ln#
1
2
3
4
5
6
7
vlib work
vlog func_memory.v memory.v
vsim -novopt memory
log -r /*
do wave.do
run -all
memory.v
func_memory.v
run-vlogM.do

Answer 1

1. Write a Verilog module that performs file I/O operation?

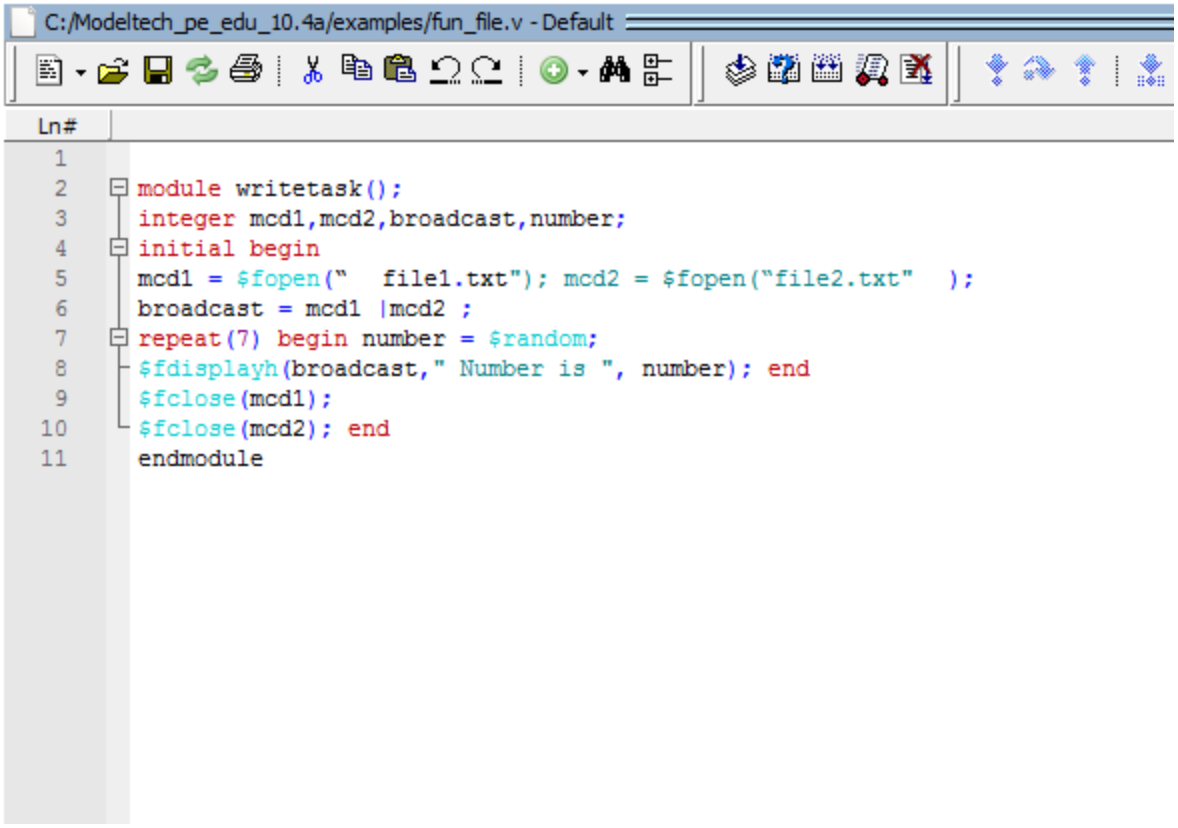
- **opens a file**
- **Write data to the file**
- **Close the file**

C:/Modeltech_pe_edu_10.4a/examples/fopen.v - Default

```
Ln#
 1  module fopen_close();
 2
 3  integer mcd,number;
 4
 5  initial
 6  begin
 7
 8
 9  begin $display("value of mcd before file opening %b " , mcd);
10  mcd = $fopen("   myfile.txt"); // opening the file myfile.txt
11  $display("value of mcd after opening the file %b " , mcd);
12  repeat(7) begin
13  number = $random ;
14  $fdisplay(mcd, " Number is ", number); end
15  $fclose(mcd);
16
17  end endmodule
18
```

C:/Modeltech_pe_edu_10.4a/examples/written_file.v - Default

```
Ln#
 1  module write_task();
 2  integer mcd1,mcd2,number,pointer;
 3  initial begin
 4  $display("value of mcd1 before opening the file %b " , mcd1);
 5  $display("value of mcd2 before opening the file %b " , mcd2);
 6  mcd1 = $fopen("  abc.txt"); mcd2 = $fopen("ptr.txt");
 7  $display("value of mcd1 after opening the file %b " , mcd1);
 8  $display("value of mcd2 after opening the file %b " , mcd2);
 9  repeat(7) begin
10  pointer = $random; number = $random % 10;
11  $fwriteo(mcd1, " Number is ", number);
12  $fwriteh(mcd2, " Pointer is ", pointer); end
13  $fclose(mcd1);
14  $fclose(mcd2); end
15  endmodule
```


C:/Modeltech_pe_edu_10.4a/examples/fun_file.v - Default
Ln#
1
2 module writetask();
3 integer mcd1,mcd2,broadcast,number;
4 initial begin
5 mcd1 = $fopen(" file1.txt"); mcd2 = $fopen("file2.txt");
6 broadcast = mcd1 |mcd2 ;
7 repeat(7) begin number = $random;
8 $fdisplayh(broadcast," Number is ", number); end
9 $fclose(mcd1);
10 $fclose(mcd2); end
11 endmodule