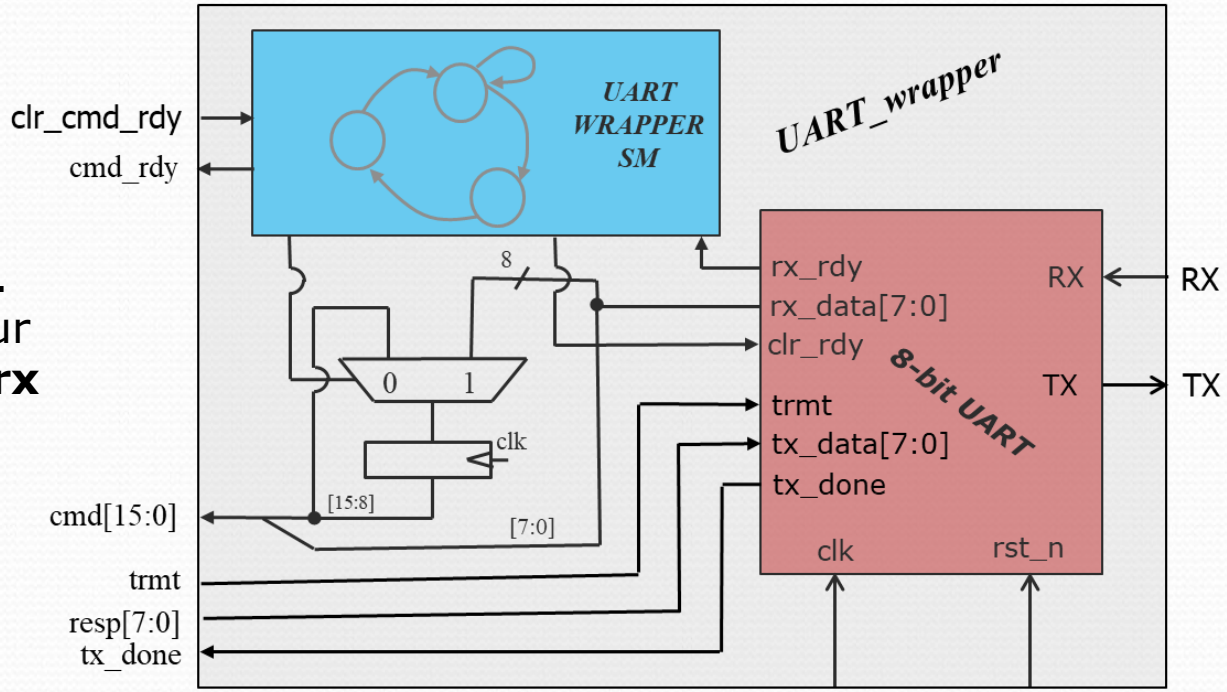
Exercise 15: UART Wrapper

- "The MazeRunner" receives a 16-bit commands that tells it the moves it will make via Bluetooth. The Bluetooth module sends this command via UART *(a byte based protocol).* You need to make a wrapper to package two bytes into a single 16-bit command.

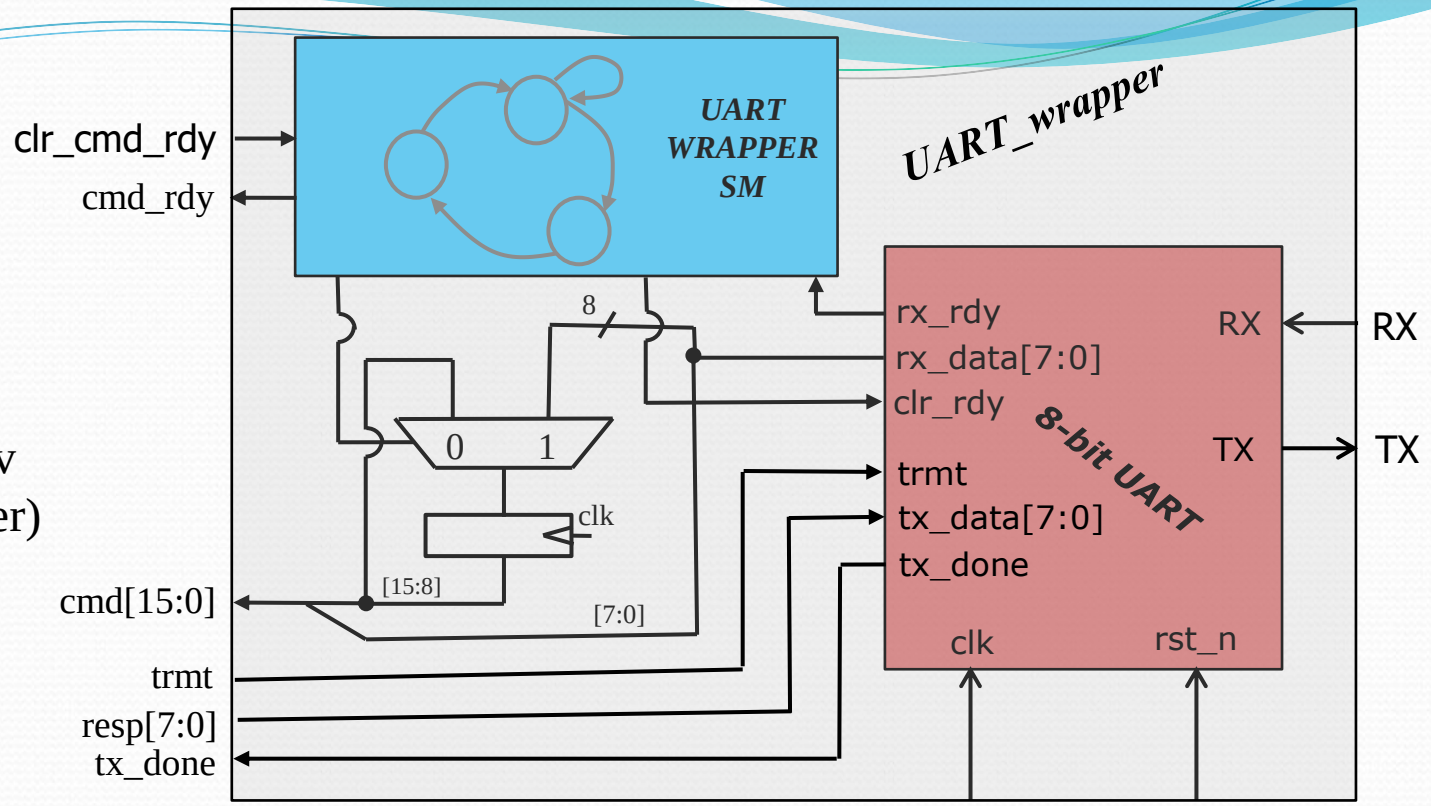
- A file **UART.sv** is available for download. It simply combines your **UART_tx** and **UART_rx** together in a single module.



- Create **UART_wrapper.sv** (according to the diagram above). Instantiate the downloaded **UART.sv** and then add the simple datapath and control SM around it. We will work on testing it next Weds during Exercise16.

Exercise 15: UART Wrapper

Submit:
UART_Wrapper.sv
(testing occurs later)



Signal:	Dir:	Description:
clk, rst_n	in	50MHz clock & asynch active low reset
RX	in	Receive line from Bluetooth module (19200 baud)
cmd_rdy, cmd[15:0]	out	When **cmd_rdy** is asserted **cmd** is 16-bit command received
clr_cmd_rdy	out	Used to knock down cmd_rdy. Bookkeeping for consumer.
trmt & resp[7:0]	in	**resp** is sent to Bluetooth module upon a pulse on **trmt**
tx_done	out	Asserted when **resp** has been sent
TX	out	Transmit line to Bluetooth module (19200 baud)