



EECS 150 - Components and Design Techniques for Digital Systems

Lec 09 – Counters

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Review: Designing with FSM

- **FSMs are critical tool in your design toolbox**
 - **Adapters, Protocols, Datapath Controllers, ...**
- **They often interact with other FSMs**
- **Important to design each well and to make them work together well.**
- **Keep your verilog FSMs clean**
 - **Separate combinational part from state update**
- **Good state machine design is an iterative process**
 - **State encoding**
 - **Reduction**
 - **Assignment**



Outline

- **Review**
- **Registers**
- **Simple, important FSMs**
 - Ring counters
 - Binary Counters
- **Universal Shift Register**
- **Using Counters to build controllers**
 - Different approach to FSM design