This is a general outline of what Mr. Galipeau expects to see in your video project report. There are more details in the project manual about common mistakes, as well as hints in the PowerPoint template.

You must evenly split this 50/50 between you and your lab partner. I am leaving the specifics up to you.

Introduction (1 minute; 5 points)

Describe the description of the device you are going to be building (rotten tomato vending machine), the inputs to the device, and the outputs. Describe, at a high level, the finite state machine implementation. Describe the implementation details on the FPGA. One sentence takeaway on the outcomes of your project/design.

Video: this should be of you and your lab partner talking.

Theory (2.5 minutes; 12 points)

Fully describe the operation of the machine. How will it work, and how will it be implemented? Start with the top-level diagram of your machine (**do not use mine, make your own or edit the one I provided you**). Explain what the inputs and outputs to the machine are, **define them as variables.** Mention the high-level operation, theoretically, of the machine. Discuss the need for each of your modules. Be sure to point out the Moore FSM design.

Video: talk over the top-level diagram slide in your PowerPoint

Theory of each module

Go through and describe the theoretical operation of each module. What are the inputs? Outputs? Define these variables. In this section, you do not need to derive any equations. **You must have defined the encoder and encoded inputs in this section for your procedure to make sense.**

Video: showcase each module slide from your PowerPoint

Procedure (2 minutes; 6 points)

Start with your state transition diagram and discussion of deriving your next state logic and output equations. Have a slide for each next state logic equation with the associated K-map. Do the same for your output equations. You can assume that the audience knows the equations for the encoder and 7-segment decoder.

Video: this should be over your PowerPoint slides

Results and Analysis (3.5 minutes; 12 points)

Discuss how you implemented the equations using SystemVerilog. **Discuss how you mapped all of your inputs and outputs to the DE10-Lite board.** Put a table with inputs, and a table with outputs. **Do not screencap Mr. Galipeau's table.**

Video: this discussion should be over the PowerPoint slides (with a transition to point out the I/O on the board)

Go over a testing procedure (“results”) and describe the operation working on your DE-10 Lite board.

Video: this should be a voice-over recording of you demonstrating the operation on the DE-10 Lite board.

Conclusions (1 minute; 5 points)

Go over general concluding remarks talking about what you did and what the audience should have learned [main takeaways] from your video. Discuss what **you learned, mistakes you made, and improvements you would make next time.**

Video: this should be of you and your lab partner talking.

Overall video, image, equation, etc. quality (10 points)