

OBJECT-ORIENTED ANALYSIS AND DESIGN

3rd Homework Assignment

Due on: Sunday, April 5, 2009

Draw the State Transition Diagram for a VCR

Assume that the VCR is operated as per the instruction manual, that is everyone always presses the stop button before selecting another function, especially eject. Assume that the VCR's pause button only works when it is playing a tape at normal speed. Also assume that the VCR remains on and does not have a power switch. (Ignore these assumptions if you want to attempt a more complex State Transition diagram).

Deduce the states and events involved in the diagram from the description:

- The VCR is inactive, with a channel selected.
- If no tape is inserted then all tape manipulation commands are ignored and the VCR remains inactive.
- If a pre-recorded tape is inserted the VCR begins to play the tape.
- If any other tape is inserted the VCR becomes active.
- If the channel selects buttons are used while the VCR is active or inactive the VCR will change to that channel.
- If the VCR is active with a pre-recorded tape in it and the record button is pressed then the VCR ignores the command.
- If the VCR is active with any other tape in it and the record button is pressed then the VCR will record the current channel onto the tape.
- If the VCR is active and the play button is pressed then the VCR begins to play the tape.
- If the VCR is active and the fast-forward button is pressed then the VCR begins to fast-forward wind the tape.
- If the VCR is active and the fast-backward button is pressed then the VCR begins to fast-backward wind the tape.
- If the VCR is playing a tape and the fast-forward button is pressed then the VCR begins to fast-forward scan the tape.
- If the VCR is playing a tape and the fast-backward button is pressed then the VCR begins to fast-backward scan the tape.
- If the VCR is fast-forward scanning or fast-backward scanning a tape and the play button is pressed the VCR plays the tape.
- If the VCR is playing a tape and the pause button is pressed the VCR pauses the tape.
- If the VCR is playing, paused, fast-forward winding, fast-backward winding, fast-forward scanning or fast-backward scanning a tape and the stop button is pressed then the VCR returns to being active only.
- If the VCR is active and the eject button is pressed the VCR ejects the tape and returns to being inactive.