**Lab Status :**

Everything should work as expected.

The R bonus was implemented.

you can find the sof file by extraacting the zip file and clicking on the template\_de1soc folder it is called simple\_ipod\_solution.sof.

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**Address handler FSM**

The address handler fsm is writen in the file addresss\_handling.sv and its testbench is written in the file addreess\_handlin\_tb.sv you can find them both along witht the signal tap and modelsim anotated screenshots in the

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer program

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**---------------------------------------------------------------------------------**

**Flash fsm**

The FSM that reads from the flash is implemented in the file flash\_memory.sv, and its corresponding testbench, flash\_memory\_tb.sv, is written for ModelSim. Both files can be found in the flash\_memory\_simulation directory. You’ll also find the annotated waveform simulations from both SignalTap and ModelSim in that directory.

A screen shot of a computer

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AI-generated content may be incorrect.

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**Clock\_divider.sv**

this is the clock divider module that also handles speeding up, slowing down, and reset by changing the frequency. You can find the testbench files and the code in the clock\_divider\_sim folder. A screenshot of the simulation is provided — it is called clock\_divider.webp and is in the same folder.

Note that in the code, test cases for all three buttons are present, but I had to test one at a time to allow outclk to recover.

**A screenshot of a computer

AI-generated content may be incorrect.**

**Latches**

A white rectangular object with a white border

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No latches found.not sure if this is the correct place to look for them ?

**Bonuses :**

The R key bonus was succesfully implemented and the song starts playing from the beggining once you press the R key.

**Flow diagram of the address handler fsm (apologies for bad res it more clear on my ipad)**

A diagram of a diagram

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A graph paper with text and circles

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