Rapportmall

TSEA44

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Grupp 2

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1 What to Include in the Lab Report 1

The lab report should contain all source code that you have written. (The source code should of course be commented.) We would also like you to include a block diagram of your hardware. If you have written any FSM you should include a state diagram graph of the FSM. We would also like you to discuss the following questions:

- How did you verify that your computer hardware worked?
- What is the performance of the 2D DCT software? (Try it with and without caches.)
- How much of the FPGA is used by our design?

And of course, the normal parts of a lab report such as a table of contents, an intro- duction, a conclusion, etc. The source code that you have written should be included in appendices and referred to from the main document.

2 What to Include in the Lab Report 2

The lab report should contain all source code that you have written. (The source code should of course be commented.) We would also like you to include a block diagram of your hardware. If you have written any FSM you should include a state diagram graph of the FSM. We would also like you to discuss the following questions in detail somewhere in your lab report.

- How does your 2D DCT hardware work?
- How did you verify that your 2D DCT hardware works correctly?
- What is the performance with and without the 2D DCT hardware? This should include measurements of both the 2D DCT kernel and the entire application.
- A timestamp diagram.

- How much of the FPGA is used by the 2D DCT hardware?
- How much is the 2D DCT hardware used while encoding an image in jpegtest?
- Isthesizeofthe2DDCThardwarejustifiedbytheperformanceimprovements?
- What would be required in order to implement more functionality like zigzag addressing in the 2D DCT hardware module? Would it be difficult to modify jpegfiles to take advantage of such optimizations? And of course, the normal parts of a lab report such as a table of contents, an introduction, a conclusion, etc. The source code that you have written should be included in appendices and referred to from the main document.

3 What to Include in the Lab Report 3

The lab report should contain all source code that you have written. (The source code should of course be commented.) We would also like you to include a block diagram of your hardware. If you have written any FSM you should include a state diagram graph of the FSM. We would also like you to discuss the following questions in detail somewhere in your lab report1:

- How does your hardware work?
- How did you verify that your hardware worked?
- How did you modify the software?
- A timing diagram.
- What is the utilization of your accelerator?
- What is the performance of jpegtest with DMA enabled?
- How long does it take (on average) to read a macroblock into the DCT acceler- ator via DMA?
- How much is the wishbone bus used by the DMA unit and how much is the bus used by the CPU? And of course, the normal parts of a lab report such as a table of contents, an intro- duction, a conclusion, etc. The source code that you have written should be included in appendices and referred to from the main document.

stakeholders	change1	change2	change3
stakeholder1	+ / -	+ / -	+ / -
stakeholder2	+ / -	+ / -	+ / -
stakeholder3	+ / -	+ / -	+ / -

Tabell 1: Shows how the different stakeholders are affected by each change.

change1	description	description
change2	description	description
change3	description	description

Tabell 2: Describes the changes and why they effect the stakeholders.

4 What to Include in the Lab Report 4

The lab report should contain all source code that you have written. (The source code should of course be commented.) We would also like you to include a block diagram of your hardware. If you have written any FSM you should include a state graph of the FSM. We would also like you to discuss the following questions in detail somewhere in your lab report:

- How does your hardware work?
- How did you verify that your set bit hardware worked?
- What is the performance with and without the set bit hardware? This should include measurements of both the entire application and the set bit instruction by itself, assuming good code in a software implementation (take a look at how the software solution in jpegfiles).
- How much of the FPGA does your hardware use?
- How would your design change if you had to achieve even higher speed using more hardware?
- How would your design change if you had to use less hardware at the cost of a slower solution?
- Whataretheproblemswithusingyournewhardwareinamultitaskingoperating system? How can the problem(s) be solved?
- What is the performance of your final system?
- What was the hardest problems you encountered during the entire lab course? And if you want to, we would appreciate some comments on the following ques- tions, either in the lab report or by some other means of communications:
- What did you think of the TSEA44 course? • What was good? 70 CHAPTER6. LABTASK4-CUSTOMINSTRUCTIONS
- What was bad?
- What can we improve for the next year?
- Do you have any other ideas for this course?
- Did you feel that you learned anything of value? • Any other comments you may have.

- A rough estimation of time spent on the lab tasks. And of course, the normal parts of a lab report such as a table of contents, an intro- duction, a conclusion, etc. The source code that you have written should be included in appendices and referred to from the main document.