

Questions and Exercises

These questions and exercises is an opportunity to see what you've learnt from the lecture as well as practice the new things we've been talking about. In other words, these questions and exercises are completely optional but it's recommended to do them. In the end of the document you will find the answers to the questions as well as possible solutions to the exercises, note that one can solve an exercise in different ways. There will also be some suggestions about what one could code if one want to continue with some more advanced things. These suggestions will not come with a possible solution and might include things that haven't been covered in the lecture.

Question 1

How many bits can we store in the meta data of a block?

Question 2

The item damage of an item is stored using a short. How many bits can we store in the damage value?

Question 3

If you would name the following color, what would you name it?

0xFAD600

Exercise

Use the code from course 4 (can be found on the lecture page). In the ContainerMachine.java the data is synchronized using 50 shorts. Use bit operators to synchronize 4 shorts with the same data. Also do the same when this data is being saved in TileEntityMachine.java.

Further explorations

When you're ready there's an assignment waiting for you.

Answers and solutions

Answer to Question 1

One can store 4 bits in a block's meta data. Usually this will give us values between 0 and 15 but one can use the bits for anything.

Answer to Question 2

Even though a short normally can store 16 bits we will only be able to use 15 of them. If you use the most significant bit of the damage value all data will be reset when the world loads.

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Answer to Question 3

Yellow would be a good name for it. The red part is the first two digits, the green part is the two next ones and the blue is the last two.

$$FA_{16} = 250_{10}$$

$$D6_{16} = 214_{10}$$

$$00_{16} = 0_{10}$$

A lot of red, a lot of green and no blue gives us yellow.

Possible solution to Exercise

<https://dl.dropboxusercontent.com/u/46486053/SyncSolution.zip>