

## Overflow errors - GCSE Computer Science video for binary overflow errors

**NARRATOR:** Overflow errors occur when a calculation gives a bigger result than your computer can handle.

If you add 1 to 15 in denary, you'd get 16.

In binary, the same sum is this (on screen).

Now imagine that you have a computer that can only handle four bits –

That would mean it could only add up to 15.

Ok, what would happen if you added 1 to this number?

Well, this '1' plus this '1', would equal zero, then carry 1.

The carried one plus this '1' also equals zero, then carry 1.

And so on, until the sum goes beyond four bits.

This '1' overflows, giving the answer zero to the sum '15 + 1', which is wrong.

If your computer bases other calculations on this value, they will be wrong too – and this could cause big problems later on ...