Assignment 4 - Testing / Debugging your results

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Good morning guys,

First I remind you all that the submission is to assignment 4 (not 5).

In light of some questions how to test shaders for correctness I would offer a quick method that allow you to test yourselves and your assumptions using visual aid.

This technique focuses on testing your input / computed vectors you use for the final calculations and make sure they exist (as input) and make sense.

It is very easy to do – all you need to do is to send the direction vector to be rendered as a color:

```
Color.rgb = testVector.xyz * 0.5 + 0.5;    // making sure the color is bounded [0..1]
```

Always try to think what you should expect to see and what it means and the color will reveal if this is indeed the case.

If it is not - before you jump to conclusions, make sure your assumptions are correct, or maybe the results can teach you something that you did not take into account.

Some rules of thumb:

- Do not assume that your vertex input vectors are correct or exist – test them!
- Normalized direction vectors in the vertex shader before passing them on.
- Normalize direction vectors again in the pixel shaders before using them.
- Test your UV coordinates - especially if they are computed by you.

Example for vectors you can/should color test at pixel stage:

- Normal
- Tangent
- Bi-Normal
- Reflect vector
- Texture normal
- Final normal
- Light direction
- UV coordinates
- Position
- Depth
- Vtx to Light direction (viewer direction)

Hope that helps,

-Adi