

# Advanced Graphics

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## Lab 9 – Writing fragment shaders

**Maximum points: 10**

Due: Demo before the end of the lab. No submissions

Objective for this lab:

One mark for esthetics

1½ Marks

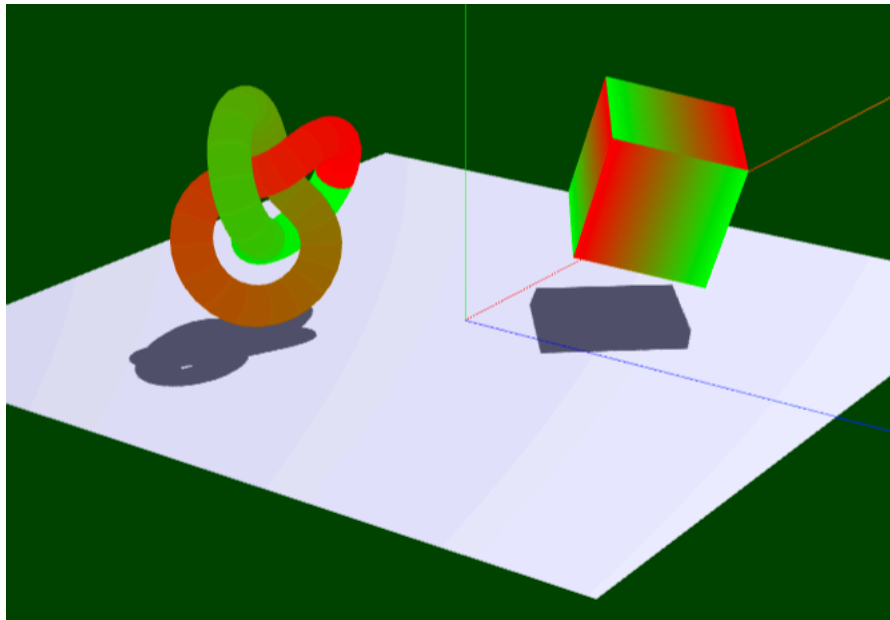
- To be able to read and understand code
- Write your own fragment shader
- You are required to do only ONE Part (see table at the end)
- A plane without the shader applied, and four cubes
- Do all the assigned problems on your own.

## Part A

You will write four shaders to do the following:

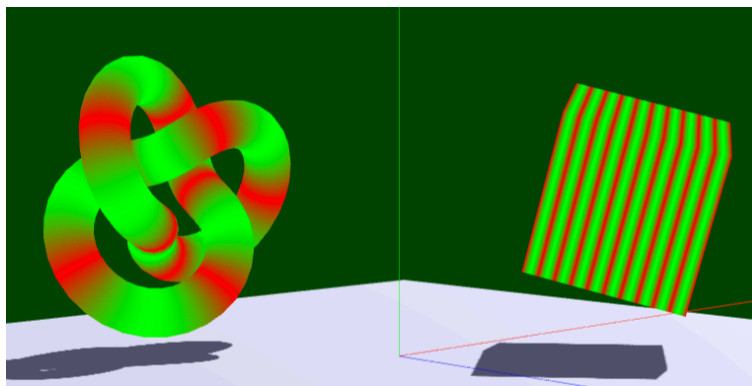
1. To produce a single blend of red to green from left to right.

2 Marks



2. To produce at least 10 blends of the above patterns

2 Marks



2 Marks

3. Animate step #2 so that the blend pattern moves continuously from left to right

3 Marks

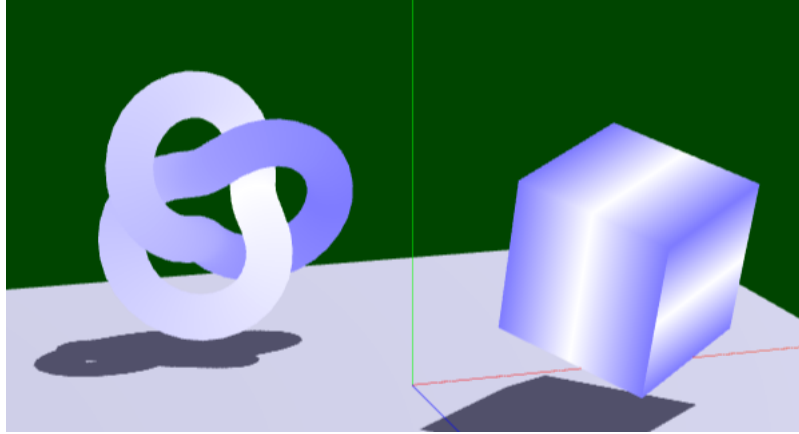
4. Animate step #2 so that the blend pattern oscillates horizontally.

## Part B

You will write four shaders to do the following:

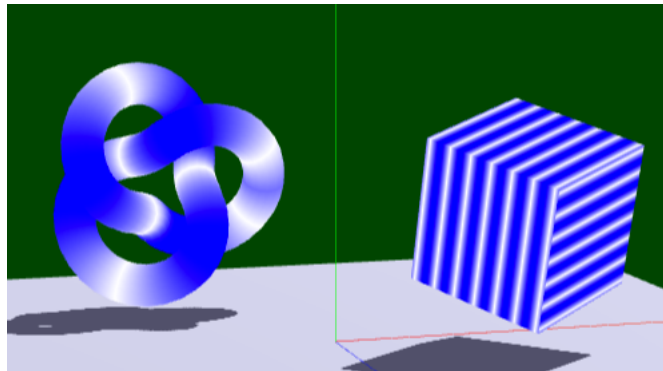
1. To produce a single blend of white to blue from center outwards.

2 Marks



2. To produce at least 8 blends of the above patterns

2 Marks



2 Marks

3. Animate step #2 so that the white bands expands and collapses to give all white and all blue.

3 Marks

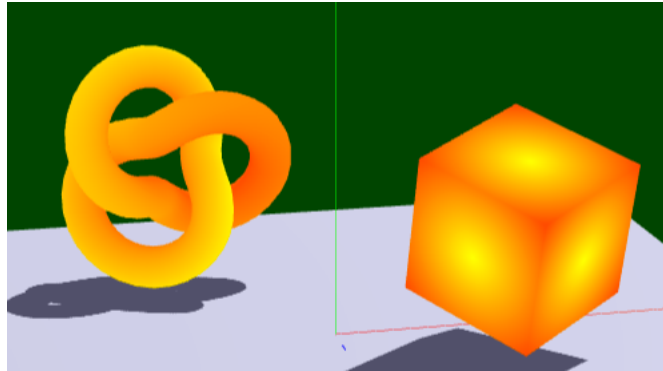
4. Animate step #2 so that the blend pattern oscillates horizontally.

## Part C

You will write four shaders to do the following:

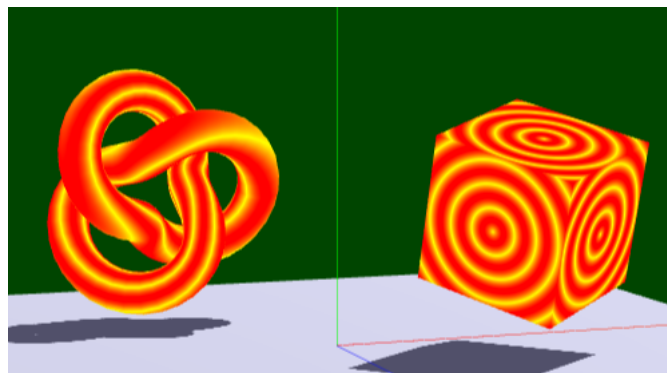
1. To produce a circular blend of yellow to red from center outwards.

2 Marks



2. To produce at least 5 blends of the above patterns

2 Marks



2 Marks

3. Animate step #2 so that the yellow rings expands and collapses to give all yellow and all red.

3 Marks

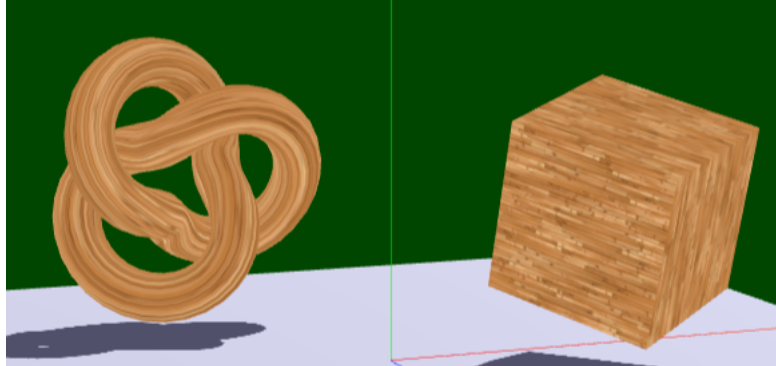
4. Animate step #2 so that the blend pattern continuously outwards or inwards.

## Part D

You will write four shaders to do the following:

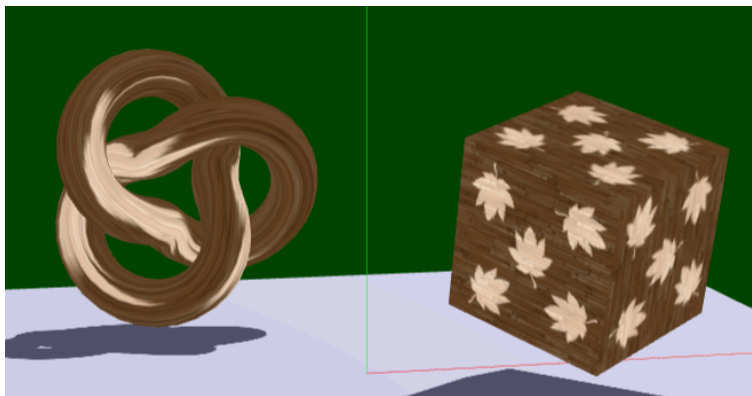
1. To overlay a texture onto the geometry.

1 Mark



2. To overlay two texture onto the geometry

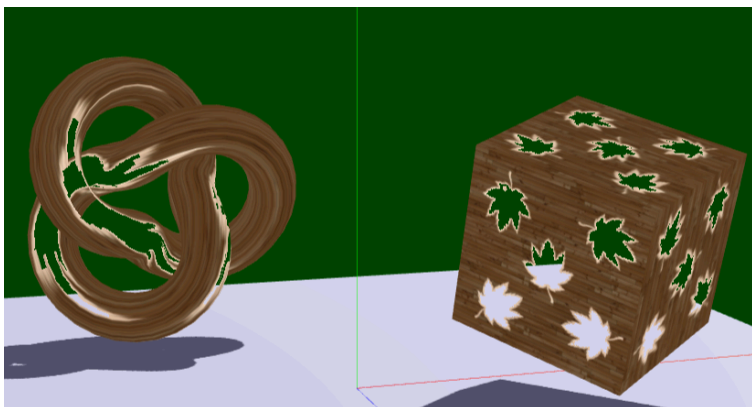
2 Marks



2 Marks

3. Animate the display so that the output merges from one to the other texture.
4. Remove part of one texture using a mask of the other one.

3 Marks



Student Name	
<i>Afong, Jonathan</i>	Part A
<i>Alexandre, Frederico B.</i>	Part B
<i>Bindhray, Jobandeep S.</i>	Part C
<i>Cai, Zhaoning</i>	Part D
<i>Campbell, Kristian N.</i>	Part A
<i>Chavda, Purvi D.</i>	Part B
<i>Cheang, Heng</i>	Part C
<i>da Silva, Rodrigo J.</i>	Part D
<i>Desai, Jalpen D.</i>	Part A
<i>Fernandez, Aldrin B.</i>	Part B
<i>Gururaja, Megha</i>	Part C
<i>Heraldo, Winston T.</i>	Part D
<i>Hunte, Gabriele C.</i>	Part A
<i>Koczkodaj, Winston</i>	Part B
<i>Koo, Brandon C.</i>	Part C
<i>Li, James</i>	Part D
<i>Lindner, Morgan W.</i>	Part A
<i>Lovell, Jayce W.</i>	Part B
<i>Ly, Aron</i>	Part C
<i>Mohsin, Mohammed</i>	Part D
<i>Nahapetyan, Sargis</i>	Part A
<i>Ngo, Trung Kien</i>	Part B
<i>Panchal, Shyam Aniruddha</i>	Part C
<i>Patel, Abhi P.</i>	Part D
<i>Patel, Raj J.</i>	Part A
<i>Popowski, Andrzej</i>	Part B
<i>Punia, Rekha</i>	Part C
<i>Rao, Kashish</i>	Part D
<i>Santiago, Lance Angelo A.</i>	Part A
<i>Sharma, Bhaskar</i>	Part B
<i>Singh, Sandeep</i>	Part C
<i>Sodha, Pruthvisinh J.</i>	Part D
<i>Stokes, Daniel</i>	Part A
<i>Sun, Yueyang</i>	Part B
<i>Tang, Jia Bin</i>	Part C
<i>Tripathi, Gaurav</i>	Part D
<i>Vargas, Marvin Jupiter R.</i>	Part A
<i>Wright, Vincent</i>	Part B
<i>Yoon, Sun Mi</i>	Part C
<i>Zhang, Yu Yi</i>	Part D