

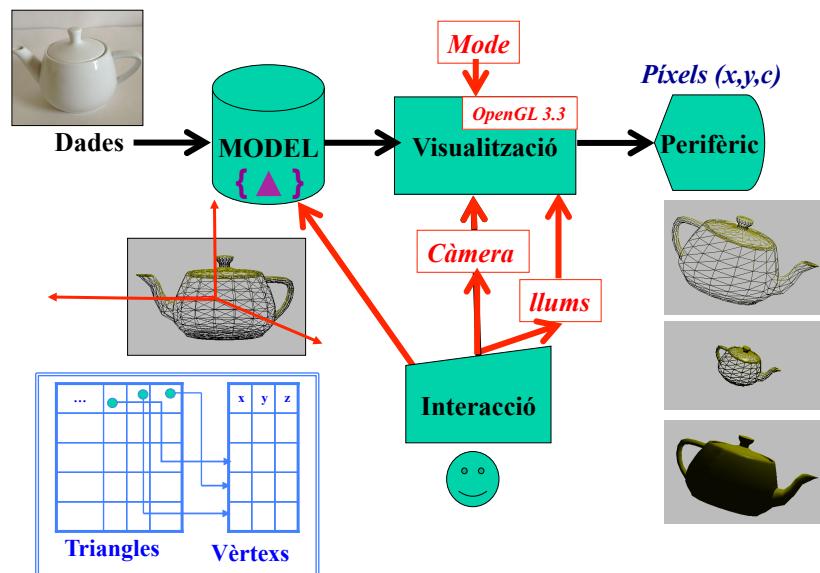
## Classe 2: contingut

- Models geomètrics (2): Escenes
- Breu repàs de TG i primers exercicis de TG
- **Procés de Visualització (1)**

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## Visualització (intro)



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# Com indicar càmera?

The diagram shows a 3D scene with a camera on a tripod. A bounding box labeled "Volum visió" represents the field of view. Inside this volume, a character is positioned at the Viewpoint (VRP). The camera's orientation is defined by its position (OBS), orientation (UP), and a local coordinate system ( $x_o, y_o, z_o$ ). The camera's field of view is projected onto a window in a coordinate system ( $x_A, y_A, z_A$ ) representing the application scene.

**Sistema Coordenades Aplicació/món/escena**

**Sistema Coordenades Observador**

1. Ubicació respecte SCA: obs, vrp, up
2. Definir Volum de Visió: òptica (window, zNear, zFar)

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The flowchart illustrates the rendering process:

1. Posició, orientació
2. Òptica
3. Fer la Foto
4. Emmarcar

**Finestra OpenGL (Pantalla)**

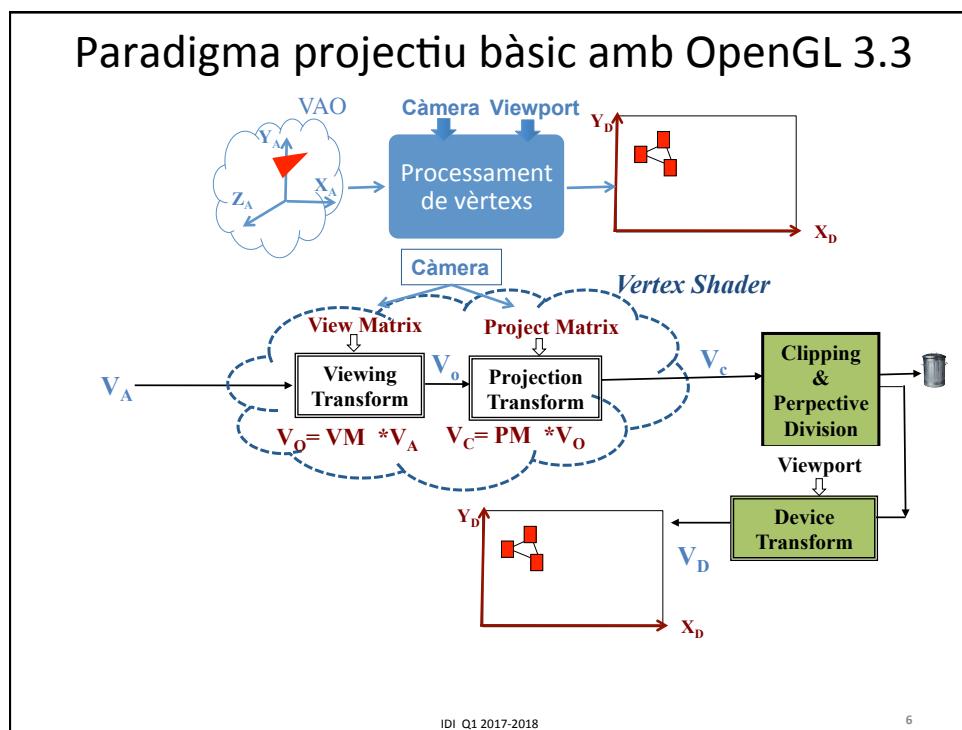
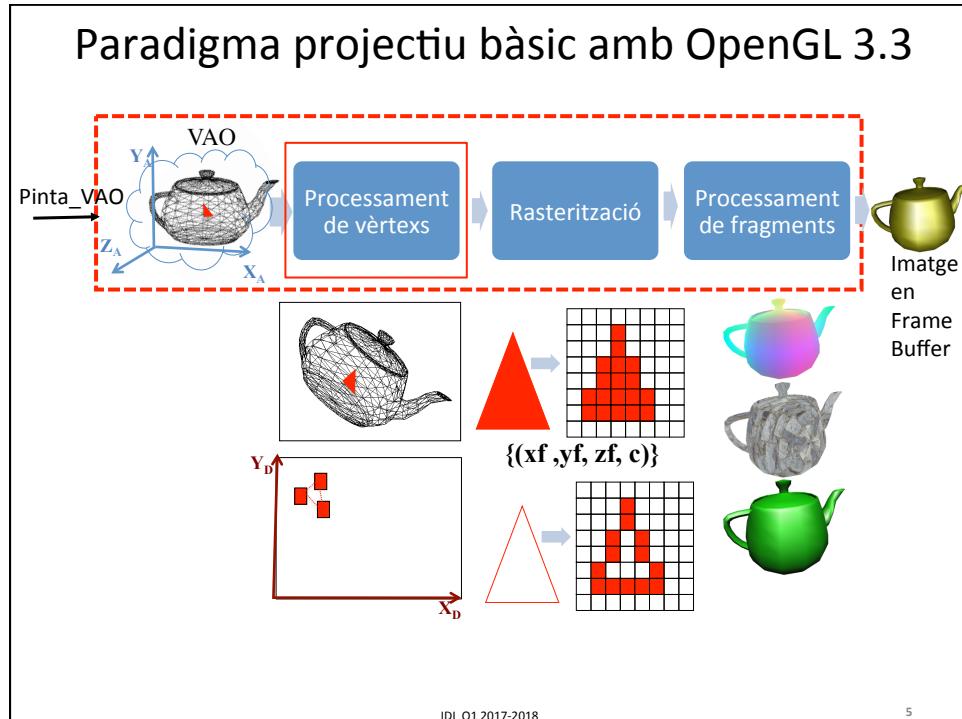
**Viewport/Vista**

Usually:

- El viewport és tota la finestra OpenGL
- De moment, no ens preocuparem de si hi ha “deformacions”

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## Paradigma projectiu bàsic amb OpenGL 3.3

### *Vertex Shader*

```
#version 330 core

in vec3 vertex;
uniform mat4 PM;
uniform mat4 VM;

void main() {
    gl_Position = PM*VM*vec4 (vertex, 1.0);
}
```

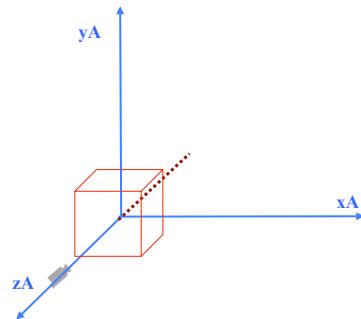
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## Paradigma projectiu bàsic amb OpenGL 3.3

### *Vertex Shader*

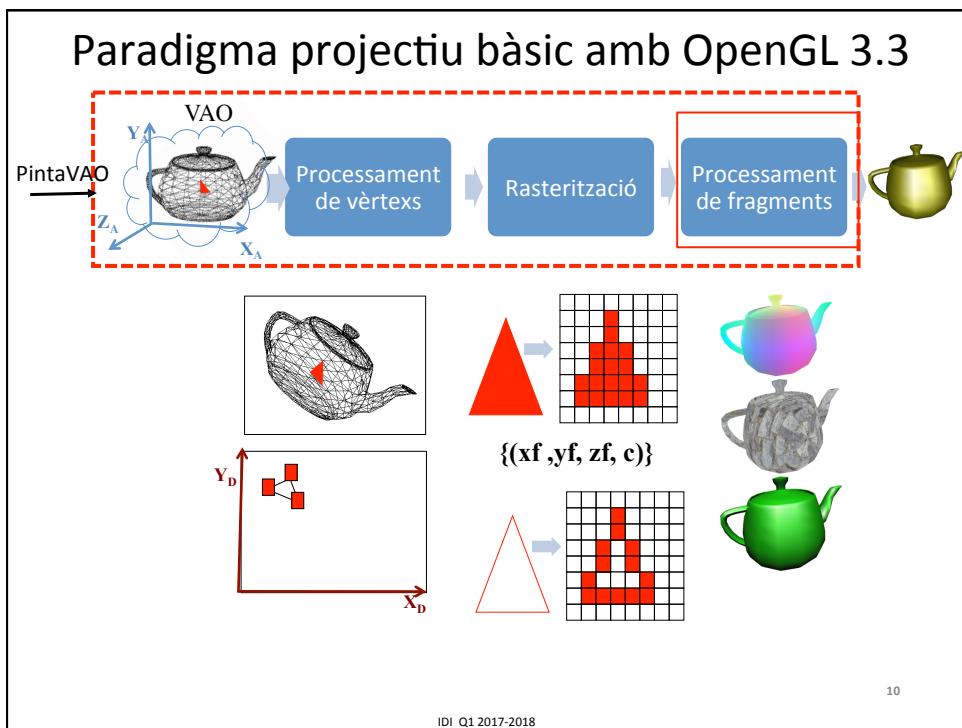
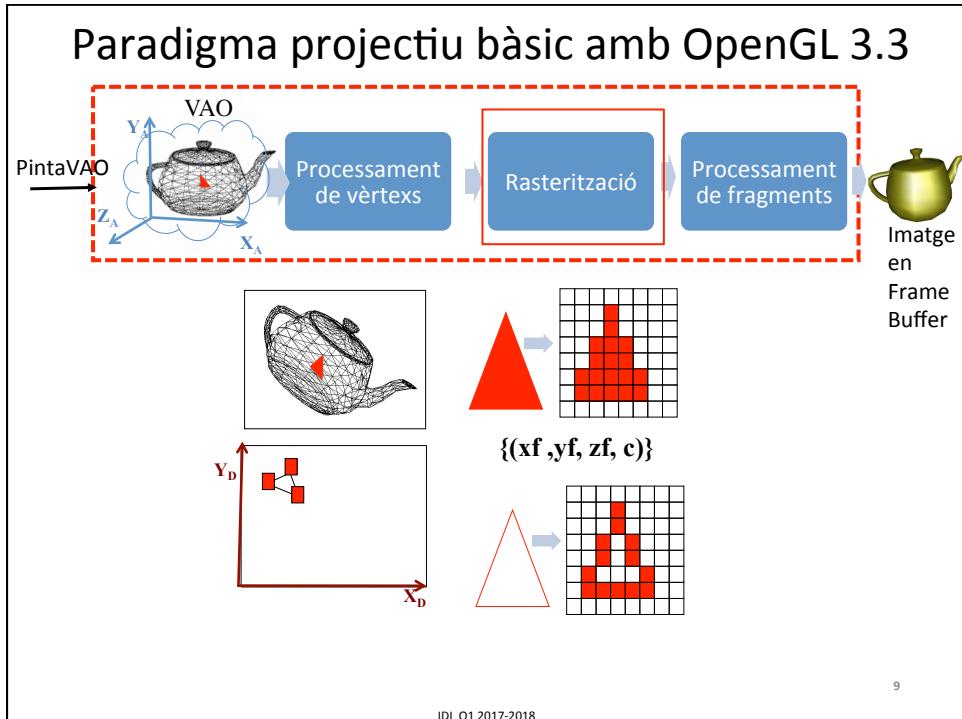
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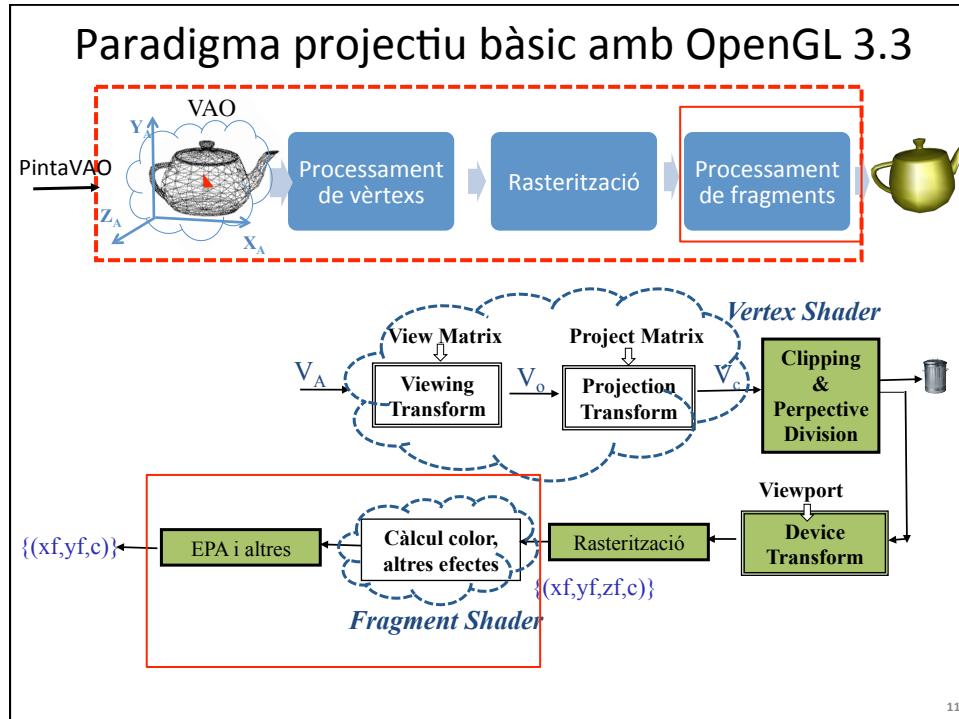


Volum de Visió cub de (-1,-1,-1) a (1,1,1)

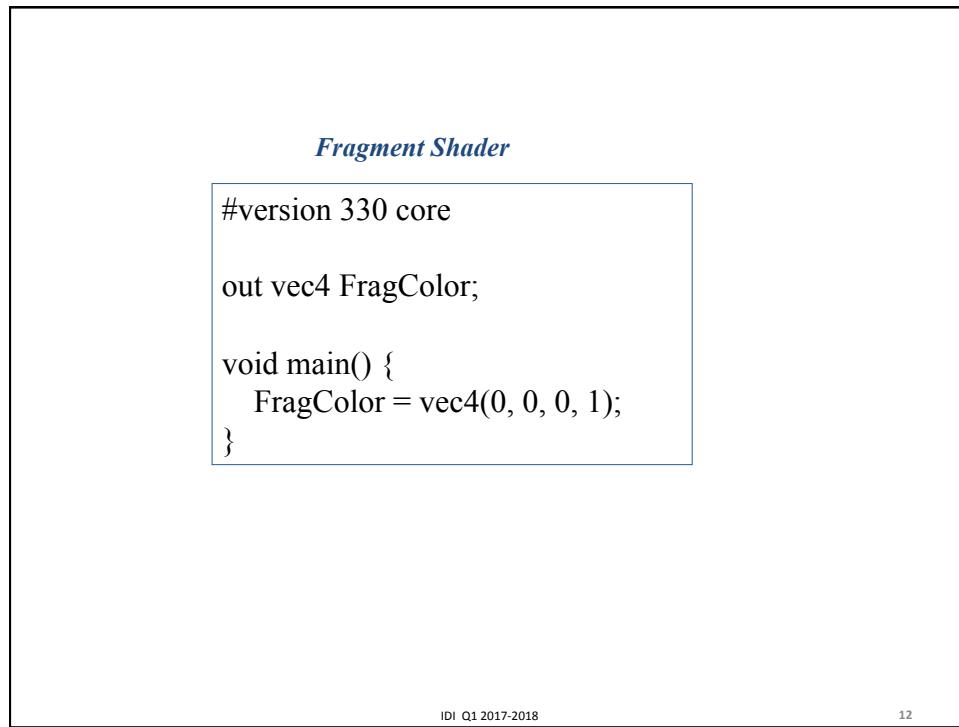
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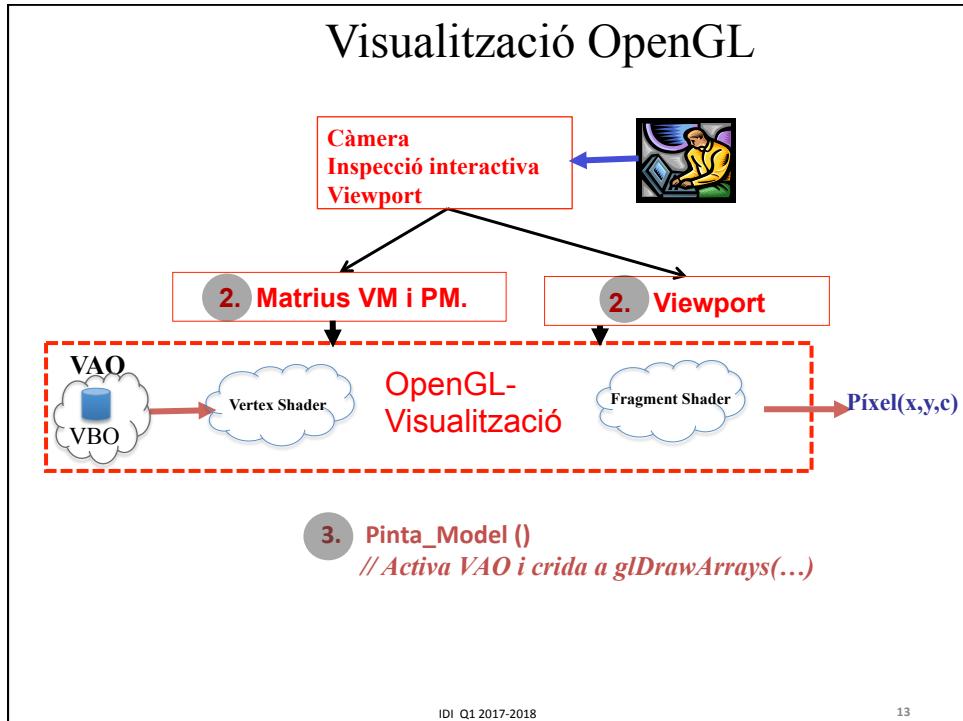




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