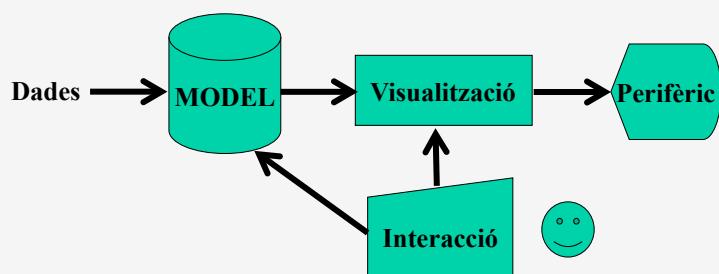


Classe 1: contingut

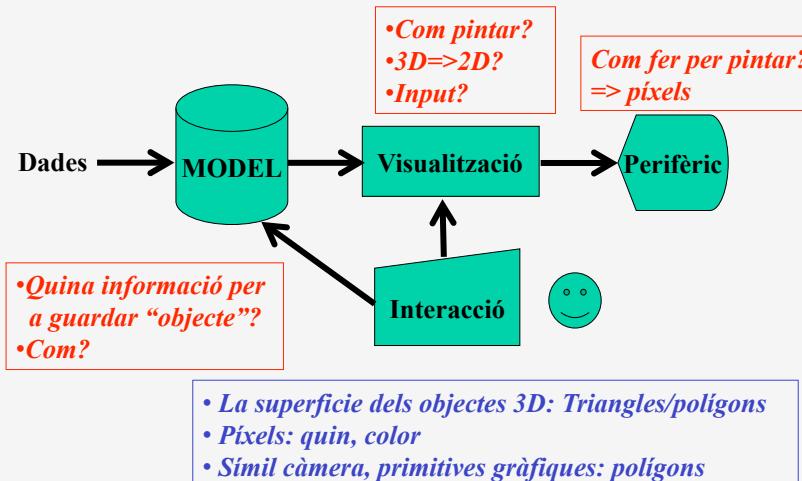
- Introducció a la Informàtica Gràfica
- Elements d'un sistema gràfic interactiu
 - Hardware de sortida
 - Algorismes de visualització
 - Esquemes de representació

Introducció

- *Informàtica Gràfica:* L'art i la tècnica de comunicar informació utilitzant imatges generades per un computador a partir de models de dades i interactuar amb les dades i la seva visualització.



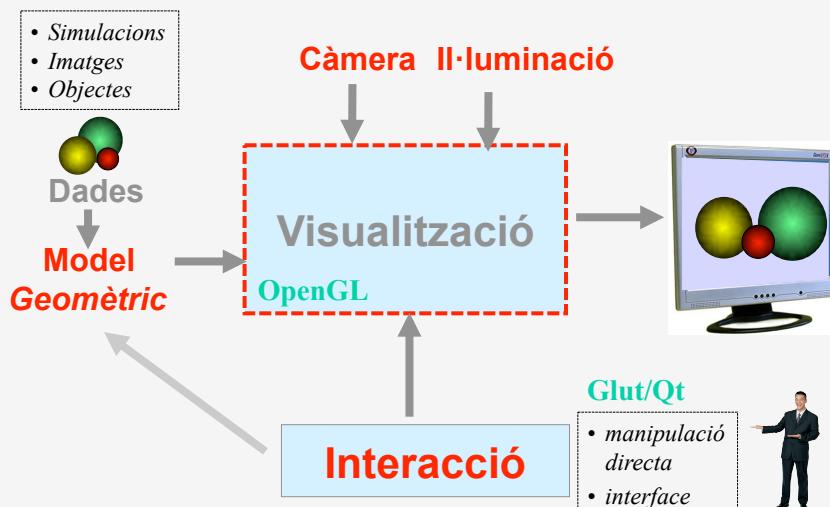
Elements Sistema Gràfic



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Elements Sistema Gràfic

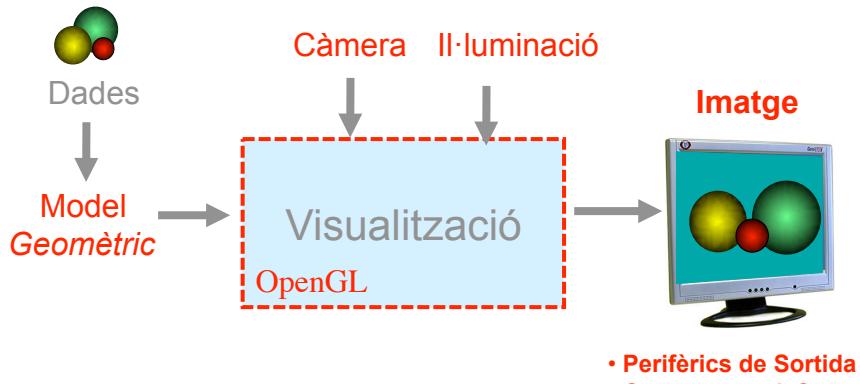


- Material Docent: CD tema 1

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Elements d'un sistema gràfic: Sortida



- Material Docent: CD tema 2

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1

Dispositius i tecnologies

- Per a pantalles:
 - CRT - Cathode Ray Tube
 - LCD - Liquid Crystal Display
 - PDP - Plasma Display Panel
 - LED - Light Emitting Diode



- Per a projectors:
 - CRT - Cathode Ray Tube
 - LCD - Liquid Crystal Display
 - DLP - Digital Light Processing



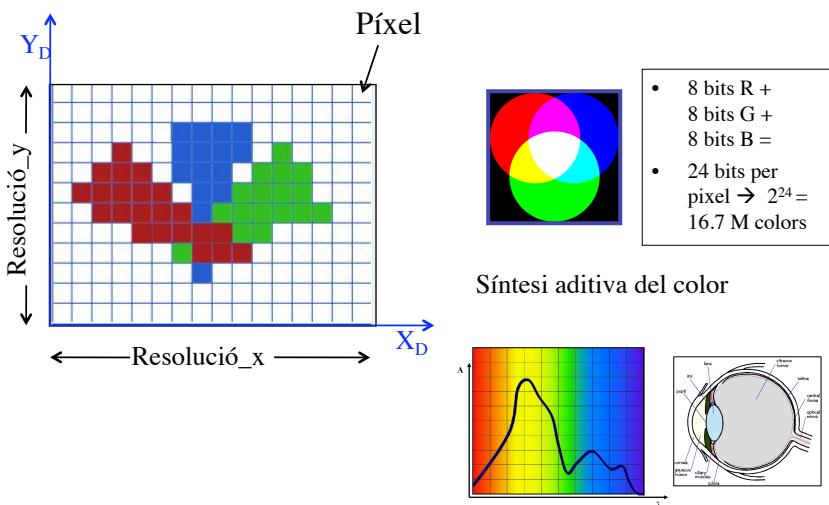
- Per a impressores:
 - Plotter de plomes
 - Ink jet (injecció de tinta)
 - Laser
 - Sublimació



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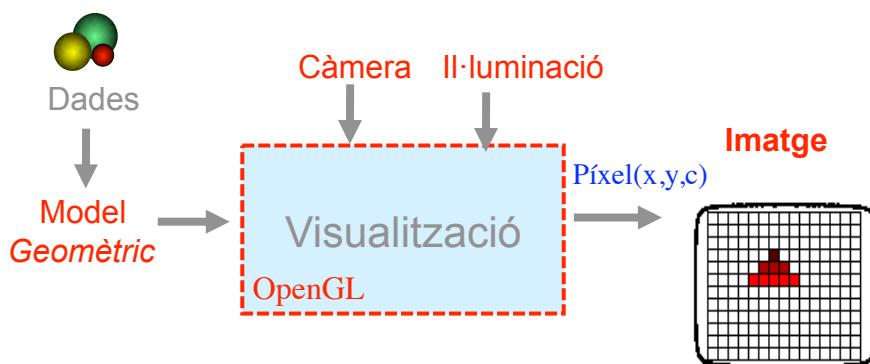
2

Pantalles d'escombrat/raster



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3



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4

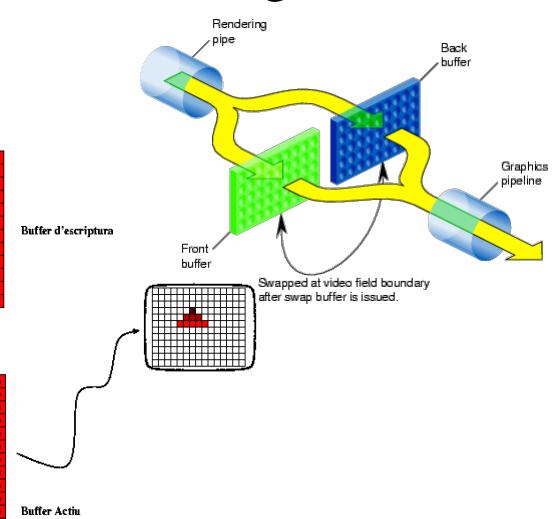
Frame buffer

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5

Double buffering

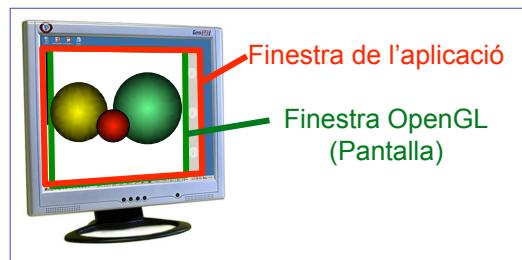
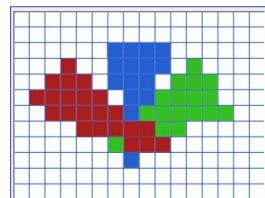
Píxel(x, y, c)



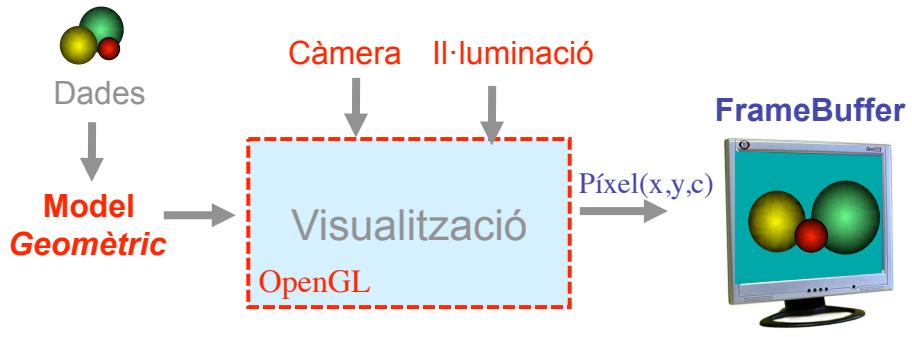
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Aliasing. Finestra Gràfica



Elements d'un sistema gràfic: Model Geomètric(1)

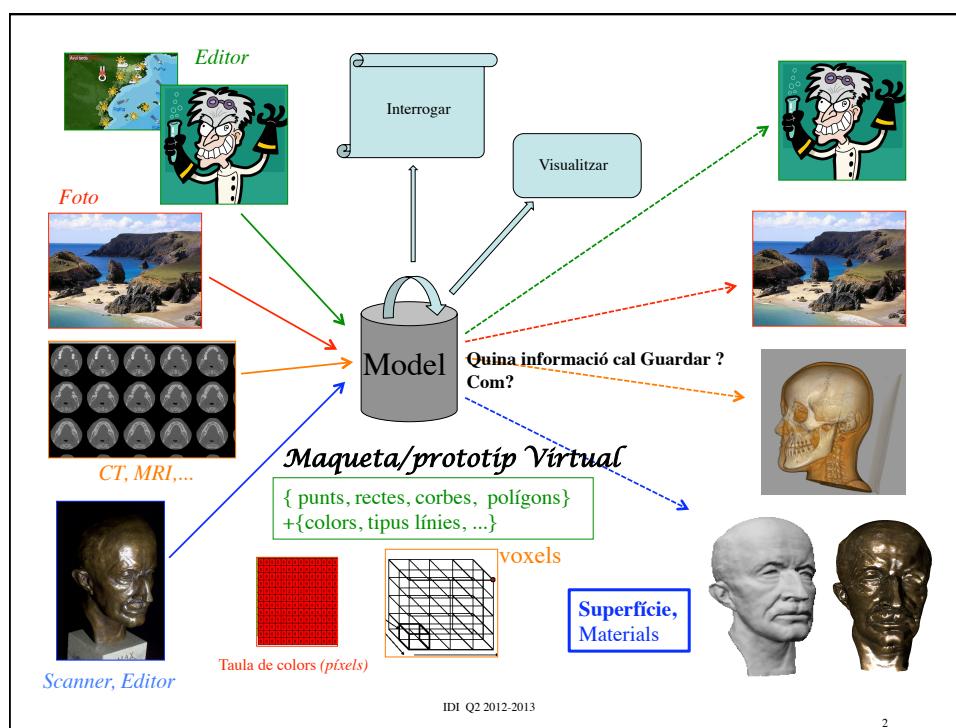


- Material Docent: CD tema 5

taula [res_x][res_y] de color
color = (r,g,b)
r,g,b en $[0 \dots n_{r,g,b}-1]$

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1



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2

The diagram shows a cube with various components labeled:

- Cara₁**: A face of the cube.
- Vèrtex₁**: A vertex of the cube.
- Aresta₁**: An edge of the cube.
- pla**: A plane equation $ax+by+cz+d=0$.
- Sist. Coord.**: A coordinate system with axes x, y, z.

Below the cube, there is a list of geometric properties:

- 6 cares ($C_1 \dots C_6$)
- 24 arestes ($A_1 \dots A_{24}$)
- 48 vèrtexs ($V_1 \dots V_{48}$)

Two green boxes contain summarized information:

- 6 cares, 12 arestes, 8 vèrtexs sense repetició**
- 6 cares,
1 polígon de 4 vèrtexs per cara**

At the bottom right of the slide is the number 4.

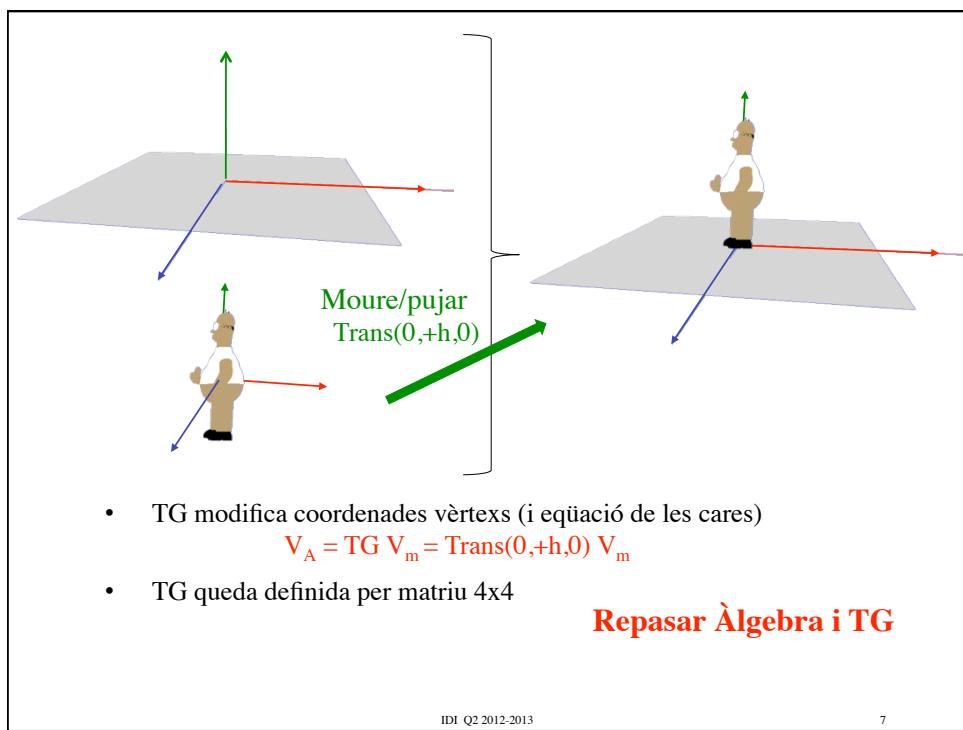
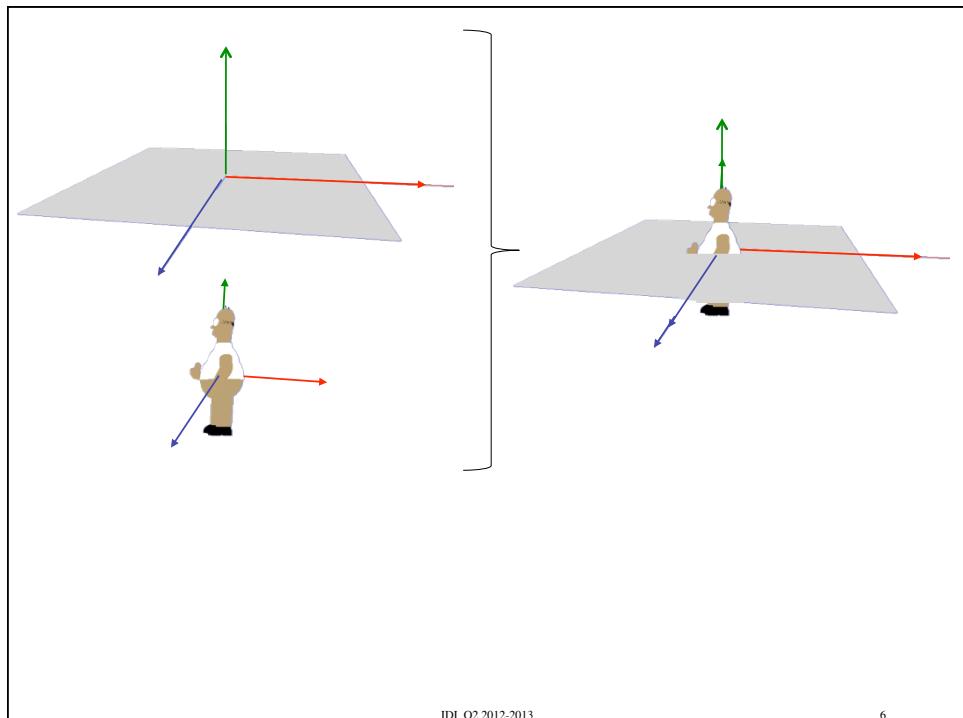
Sistema de Coordenades

The diagram shows a 3D Cartesian coordinate system with axes X, Y, and Z. A point $P(x,y,z)$ is plotted in the first octant.

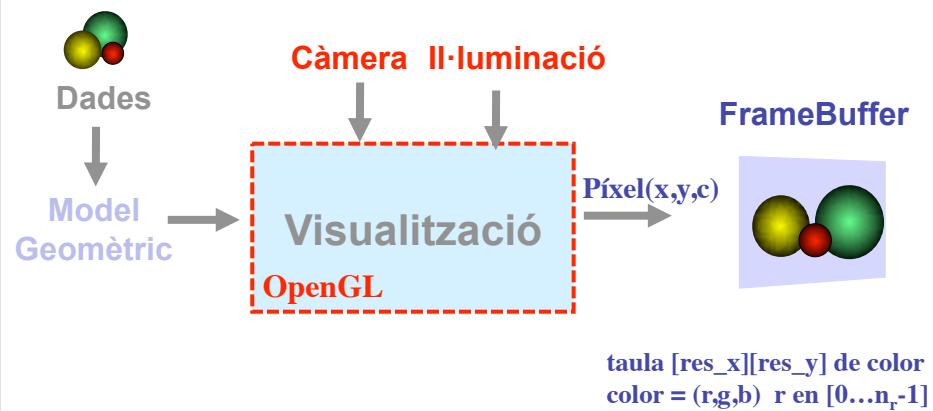
Below the coordinate system, there is a 3D model represented by a grey polygonal surface. A local coordinate system is shown at a vertex of the model, consisting of three orthogonal arrows (red, green, blue) indicating the axes of the model's coordinate system.

The text "SC del model" is written below the model.

At the bottom right of the slide is the number 5.

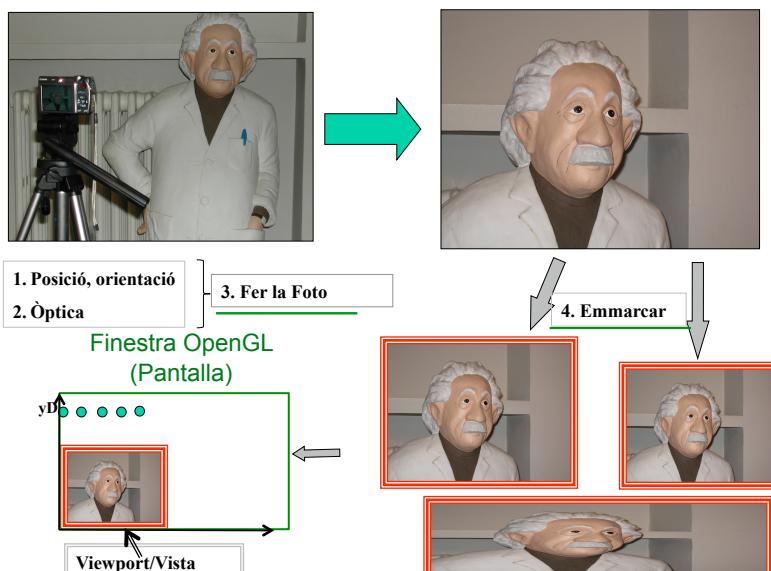


Elements d'un sistema gràfic: Visualització (1)



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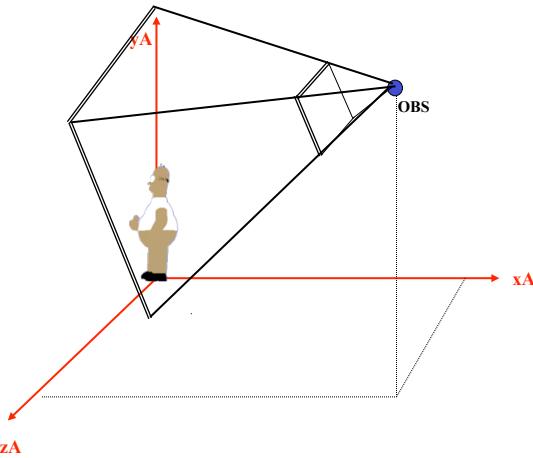
1



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3

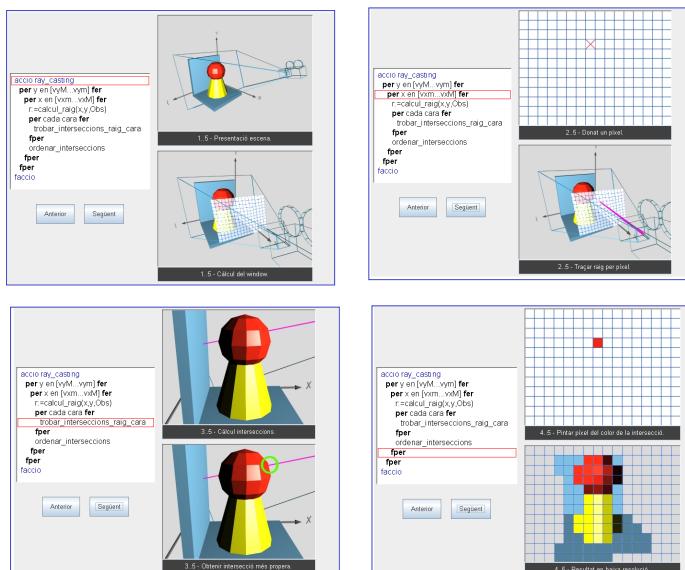
Com indicar posicionament?



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4

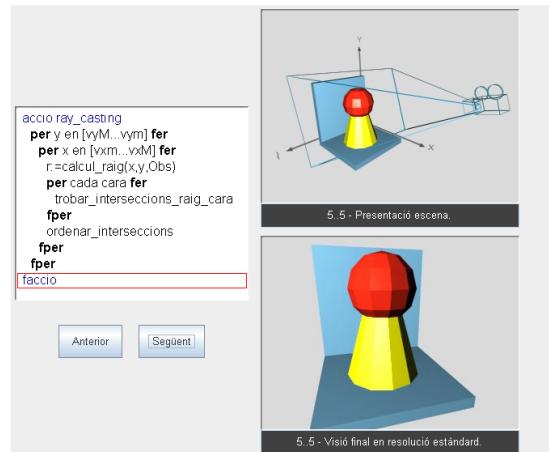
Ray Casting



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5

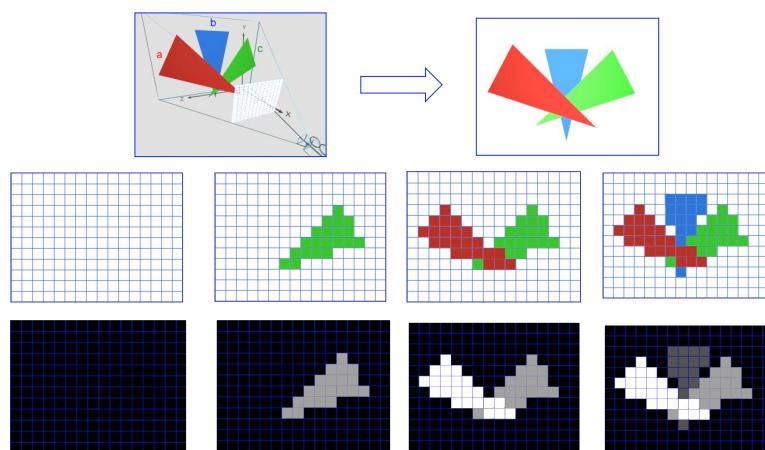
Ray Casting



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6

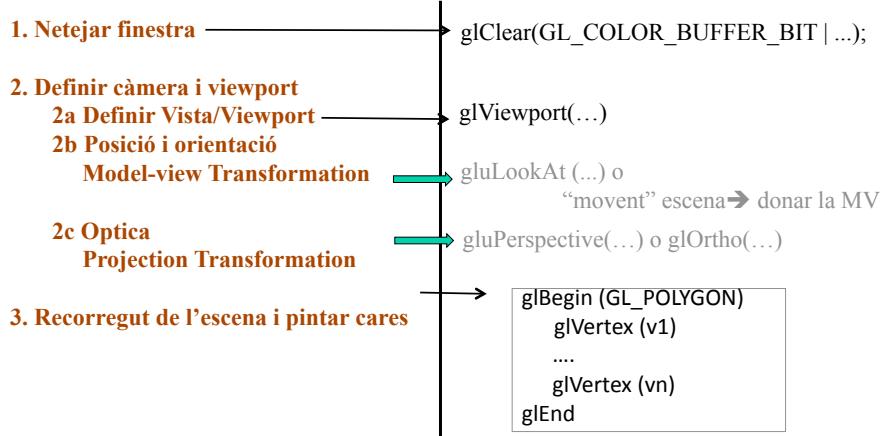
Depth Buffer (z-buffer)



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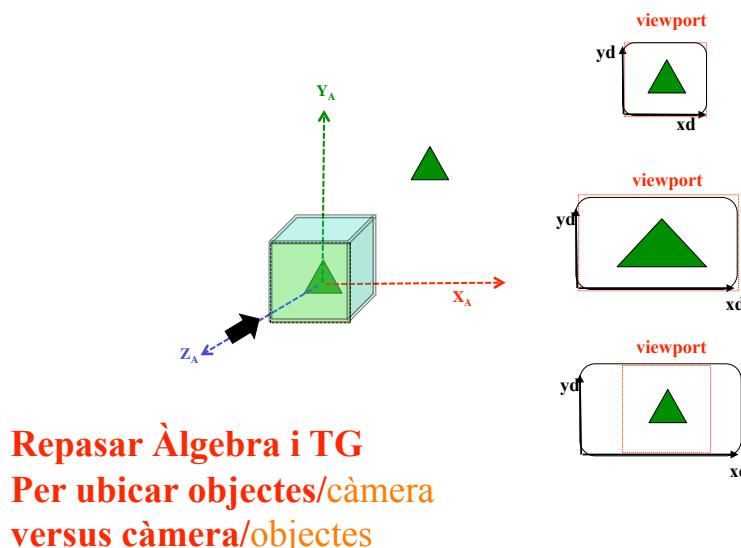
7

Visualització OpenGL



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