

Textures



Textures ?



crate07_1.jpg



ground003.jpg



stainedglass05.jpg



tiles_ctf05r.jpg



wall068.jpg



veg002.jpg

Allocation

 `glEnable (GLenum mode)`


Active l'unité de texture correspondant à l'un des 3 modes :
`GL_TEXTURE_1D / GL_TEXTURE_2D / GL_TEXTURE_3D`

 `glGenTextures (GLsizei n, GLuint * textures)`

Alloue `n` objets textures.

 `glBindTexture (GLenum target, GLuint texture)`

Associe la texture à l'unité `target`.

 `glTexImage2D (GL_TEXTURE_2D, level,
 GLenum internalformat,
 GLsizei w, GLsizei h, border,
 GLenum format, GLenum type,
 const void * data)`

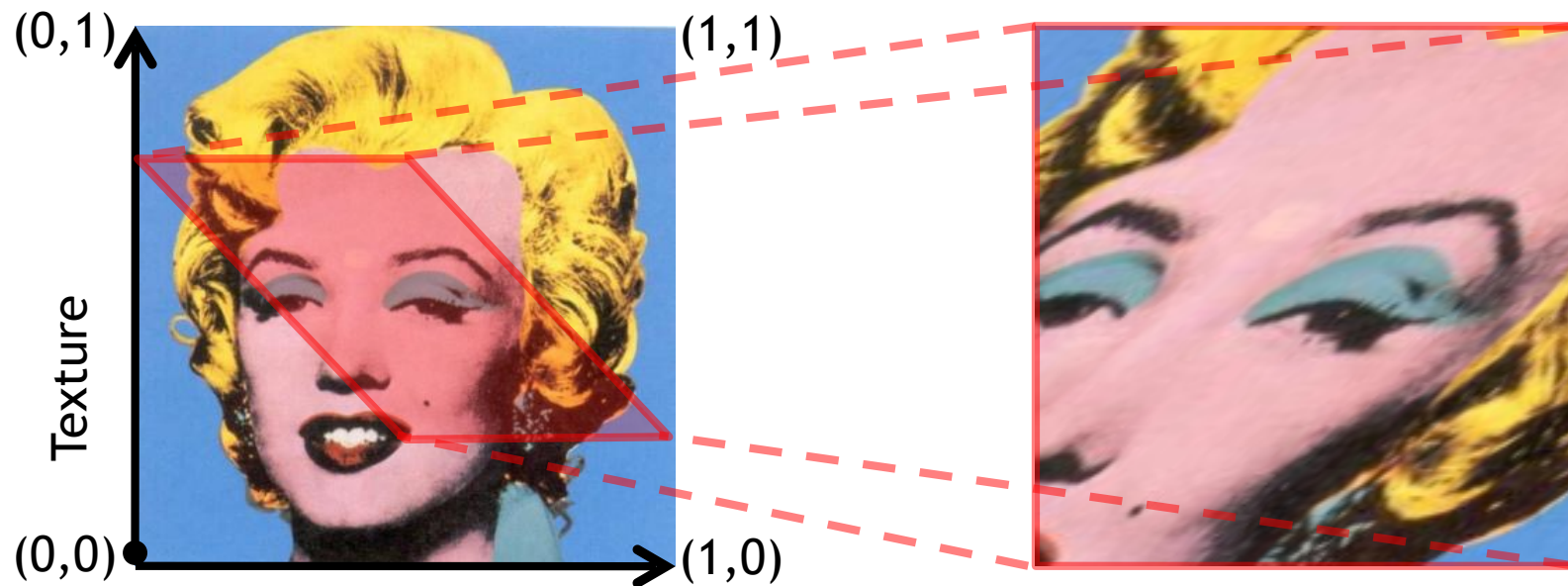
 `glDeleteTextures (GLsizei n, GLuint * textures)`

Libère `n` objets textures.

Allocation - exemple

```
1. // Image RGB sous forme de tableau.
2. GLubyte image [2*2*3] = {0,0,0, 255,255,255, ...};
3.
4. // Allocation de la texture.
5. GLuint texture;
6. glGenTextures (1, &texture);
7.
8. // Chargement de l'image.
9. glBindTexture (GL_TEXTURE_2D, texture);
10. glTexImage2D (GL_TEXTURE_2D, 0, GL_RGBA, 2, 2, 0,
                GL_RGB, GL_UNSIGNED_BYTE, &image);
11.
12. // Activation du placage de texture 2D.
13. glEnable (GL_TEXTURE_2D);
```

Coordonnées de texture



 **glTexCoord2f** (GLfloat *s*, GLfloat *t*)

Associe les coordonnées de texture (*s*, *t*) aux sommets suivants. [0-1]

● **glTexCoord1f** (GLfloat *s*)


● **glTexCoord3f** (GLfloat *s*, GLfloat *t*, GLfloat *r*)

● **glTexCoord4f** (GLfloat *s*, GLfloat *t*, GLfloat *r*, GLfloat *q*)

 **glMatrixMode** (GL_TEXTURE)

Permet d'appliquer des transformations sur les coordonnées de texture.

Bords

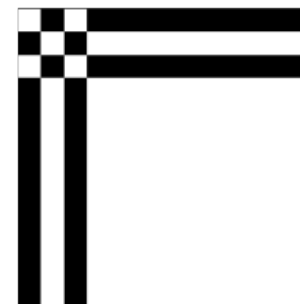
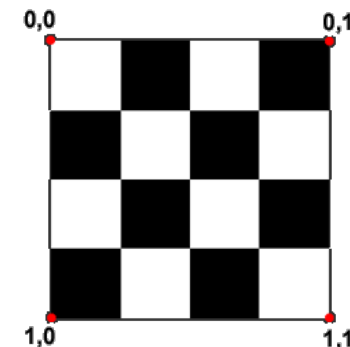
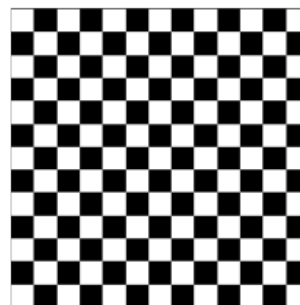
 `glTexParameterf (GLenum target,
GLenum param, GLfloat value)`

 4 paramètres sont dédiées à la gestion des bords :

- `GL_TEXTURE_WRAP_S`
- `GL_TEXTURE_WRAP_T`
- `GL_TEXTURE_WRAP_R`
- `GL_TEXTURE_WRAP_Q`

 5 valeurs possibles :

- `GL_REPEAT`
- `GL_CLAMP`
- `GL_CLAMP_TO_EDGE`
- `GL_CLAMP_TO_BORDER`
- `GL_MIRRORED_REPEAT`



Filtrage

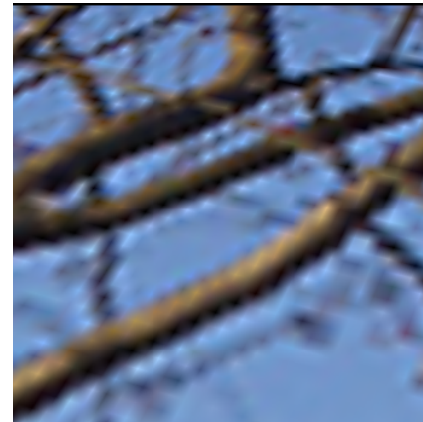
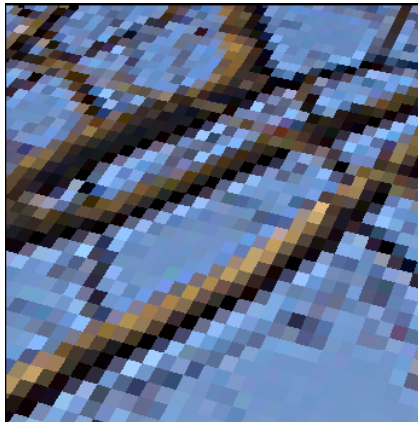
🍵 `glTexParameterf (GLenum target, GLenum param, GLfloat value)`

🍵 2 paramètres pour configurer le filtrage :

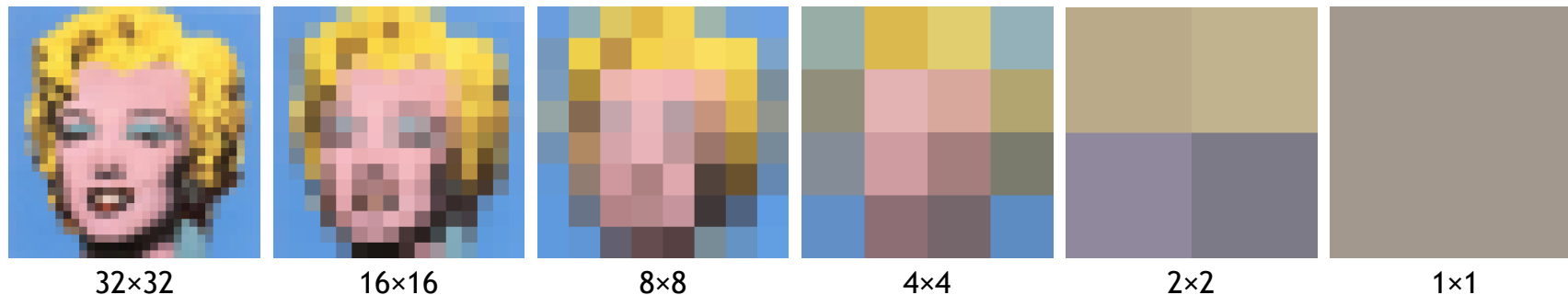
- `GL_TEXTURE_MIN_FILTER`
- `GL_TEXTURE_MAG_FILTER`

🍵 2 modes possibles (pour l'instant) :

- `GL_NEAREST`
- `GL_LINEAR`



Mipmap



🍵 `glGenerateMipmap (GLenum target)`

🍵 4 nouveaux modes de filtrage :

- `GL_NEAREST_MIPMAP_NEAREST`
- `GL_LINEAR_MIPMAP_NEAREST`
- `GL_NEAREST_MIPMAP_LINEAR`
- `GL_LINEAR_MIPMAP_LINEAR`