Universidad Nacional Autónoma de México

Facultad de ingeniería

Laboratorio de Computación Gráfica e Interacción Humano
Computadora

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Grupo de Laboratorio: 11

Práctica N° 06

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1. Actividades realizadas

Código

Índices del dodecaedro

```cpp
void CrearDodecaedro()
{
    unsigned int dodecaedro_indices[] = {
        // front
        0,1,2,
        2,3,0,
        3,4,0,

        5,6,7,
        7,8,5,
        8,9,5,

        10,14,13,
        13,10,11,
        11,12,13,

        15,19,18,
        18,15,16,
        16,17,18,

        20,24,23,
        23,20,21,
        21,22,23,

        25,29,28,
        28,25,26,
        26,27,28,

        30,34,33,
        33,30,31,
        31,32,33,

        35,39,38,
        38,35,36,
        36,37,38,

        40,44,43,
        43,40,41,
        41,42,43,

        45,49,48,
        48,45,46,
        46,47,48,

        50,54,53,
        53,50,51,
        51,52,53,

        55,59,58,
        58,55,56,
        56,57,58,
    };
```

Vértices del dodecaedro

```
103    GLfloat dodecaedro_vertices[] = {
104        // front
105        //x      y        z              u        v
106        //Bottom
107         0.0f,  0.0f,  -1.0f,        0.65094f, 0.3972f,   //0      A
108         1.0f,  0.0f,  -1.0f,        0.73546f, 0.28048f,  //1      B
109         1.31f, 0.0f,  -0.05f,       0.81596f, 0.3972f,   //2      C
110         0.5f,  0.0f,   0.54f,       0.7851f, 0.59039f,   //3      D
111        -0.31f, 0.0f,  -0.05f,       0.68448f, 0.59575f,  //4      E
112
113         0.5f,  0.0f,   0.54f,       0.78376f, 0.63064f,  //10
114        -0.31f, 0.0f,  -0.05f,       0.68314f, 0.63734f,  //11
115        -0.81f, 0.85f,  0.11f,       0.65228f, 0.82383f,  //I     //12
116        -0.31f, 1.38f,  0.8f,        0.73278f, 0.94055f,  //N     //13
117         0.5f,  0.85f,  1.06f,       0.81328f, 0.82383f,  //14
118
119         1.31f, 0.0f,  -0.05f,       0.83743f, 0.41732f,          //5
120         0.5f,  0.0f,   0.54f,       0.8f, 0.6f,                  //6
121         0.5f,  0.85f,  1.06f,       0.88975f, 0.71516f,  //H     //7
122         1.31f, 1.38f,  0.8f,        0.9689f, 0.60783f,   //M     //8
123         1.81f, 0.85f,  0.1f,        0.93805f, 0.41195f,  //G     //9
124
125         1.0f,  0.0f,  -1.0f,        0.74888f, 0.2523f,   //B     //25
126         1.31f, 0.0f,  -0.05f,       0.83206f, 0.35829f,  //C
127         1.81f, 0.85f,  0.1f,        0.90853f, 0.25365f,  //G
128         1.81f, 1.38f, -0.74f,       0.87365f, 0.05509f,  //L
129         1.31f, 0.85f, -1.43f,       0.78108f, 0.04838f,  //F     //29
130
131         0.0f,  0.0f,  -1.0f,        0.63216f, 0.36232f,          //20
132         1.0f,  0.0f,  -1.0f,        0.71131f, 0.24425f,          //21
133         1.31f, 0.85f, -1.43f,       0.68314f, 0.06314f,  //F     //22
134         0.5f,  1.38f, -1.69f,       0.59191f, 0.06314f,  //K     //23
135        -0.31f, 0.85f, -1.43f,       0.56374f, 0.24023f,          //24
136
137        -0.31f, 0.0f,  -0.05f,       0.65497f, 0.59844f,          //15
138         0.0f,  0.0f,  -1.0f,        0.62411f, 0.40525f,          //16
139        -0.31f, 0.85f, -1.43f,       0.53422f, 0.41061f,  //J     //17
140        -0.81f, 1.38f, -0.74f,       0.5f, 0.6f,          //O     //18
141        -0.81f, 0.85f,  0.11f,       0.57447f, 0.72857f,          //19
142
```

```
143            //SEGUNDAS
144            0.5f,  1.38f, -1.69f,        0.46714f, 0.59039f, //K     //30
145            1.31f, 0.85f, -1.43f,        0.5f, 0.4f, //F
146            1.81f, 1.38f, -0.74f,        0.42153f, 0.27645f, //L
147            1.31f, 2.23f, -0.57f,        0.33835f, 0.3972f,  //Q
148            0.5F, 2.23f, -1.16F,         0.37055f, 0.59039f, //P      34
149
150            1.81f, 1.38f, -0.74f,        0.34908f, 0.18522f,        //35
151            1.81f, 0.85f,  0.1f,         0.2659f, 0.0618f,   //G
152            1.31f, 1.38f,  0.8f,         0.18004f, 0.17583f,
153            1.0f,  2.23f,  0.38f,        0.21761f, 0.37036f, //R
154            1.31f, 2.23f, -0.57f,        0.3142f, 0.36902f,  //Q      39
155
156            1.31f, 1.38f, 0.8f,          0.11296f, 0.29255f, //M      40
157            0.5f,  0.85f, 1.06f,         0.03112f, 0.40122f, //H
158           -0.31f, 1.38f, 0.8f,          0.0593f, 0.59575f,  //N
159            0.0f,  2.23f, 0.38f,         0.15992f, 0.59039f, //S
160            1.0f,  2.23f, 0.38f,         0.2f, 0.4f,     //R
161
162           -0.31f, 1.38f, 0.8f,          0.08849f, 0.74683f, //N      45
163           -0.81, 0.85f, 0.11f,          0.12503f, 0.94323f, //I
164           -0.81f, 1.38f, -0.74f,        0.21761f, 0.94457f, //O
165           -0.31f, 2.23f, -0.57f,        0.25383f, 0.75138f, //T
166            0.0f, 2.23f, 0.38f,          0.16797f, 0.63466f, //S      49
167
168           -0.81f, 1.38f, -0.74f,        0.31282f, 0.94782f, //O      50
169           -0.31f, 0.85f, -1.43f,        0.4112f, 0.94782f,
170            0.5f,  1.38f, -1.69f,        0.44118f, 0.7441f,
171            0.5F, 2.23f, -1.16F,         0.36518f, 0.636f,   //P
172           -0.31f, 2.23f, -0.57f,        0.282f, 0.74735f,   //T      54
173
174            //Top
175            0.5F, 2.23f, -1.16F,         0.31688f, 0.41464f, //P      55
176            1.31f, 2.23f, -0.57f,        0.22029f, 0.4133f,  //Q
177            1.0f, 2.23f, 0.38f,          0.19058f, 0.60498f, //R
178            0.0f, 2.23f, 0.38f,          0.2659f, 0.72455f,  //S
179           -0.31f, 2.23f, -0.57f,        0.34908f, 0.60246f, //T      59
180        };
181    Mesh *dodecaedro = new Mesh();
182    dodecaedro ->CreateMesh(dodecaedro_vertices, dodecaedro_indices,300 , 108 );
183    meshList.push_back(dodecaedro);
184    }
```

Textura

Ejecución
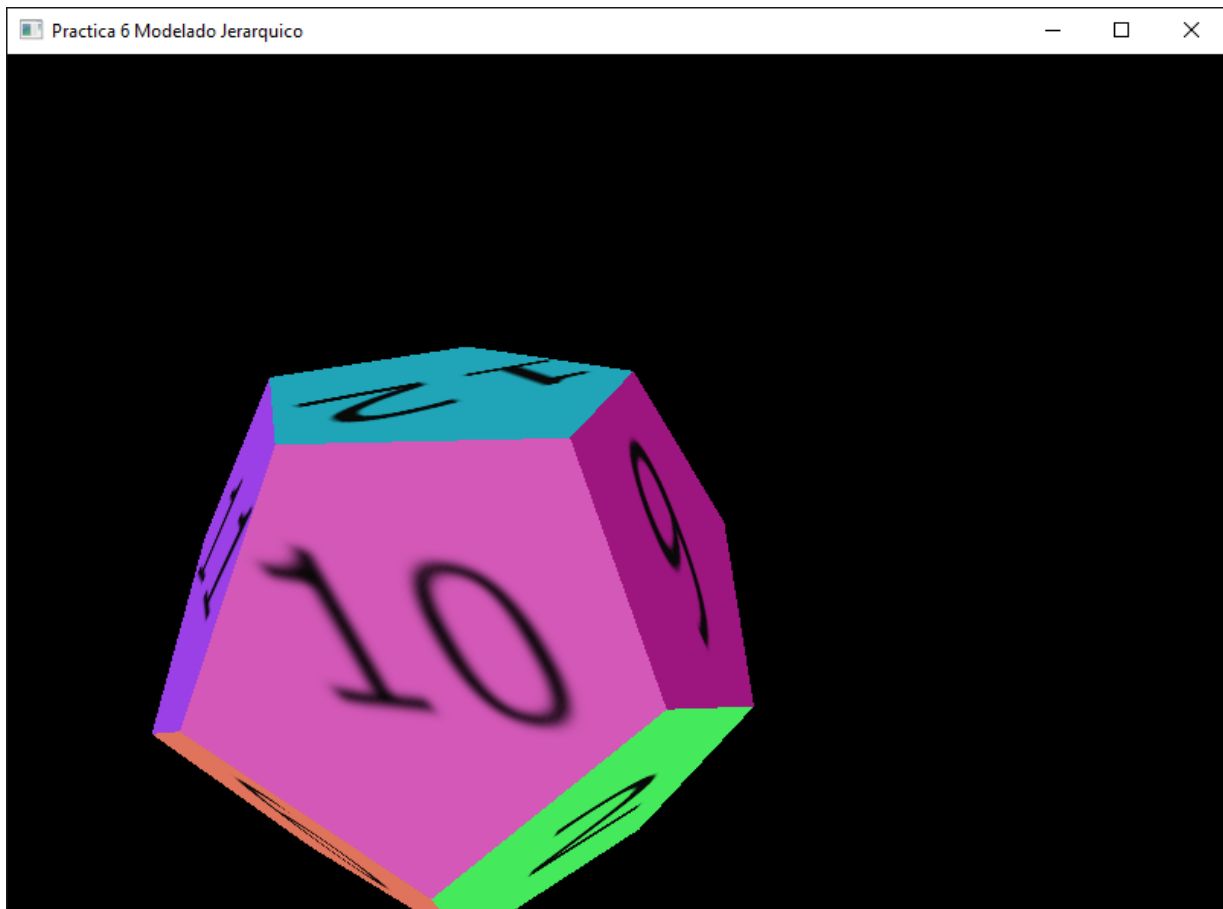
2. Problemas presentados
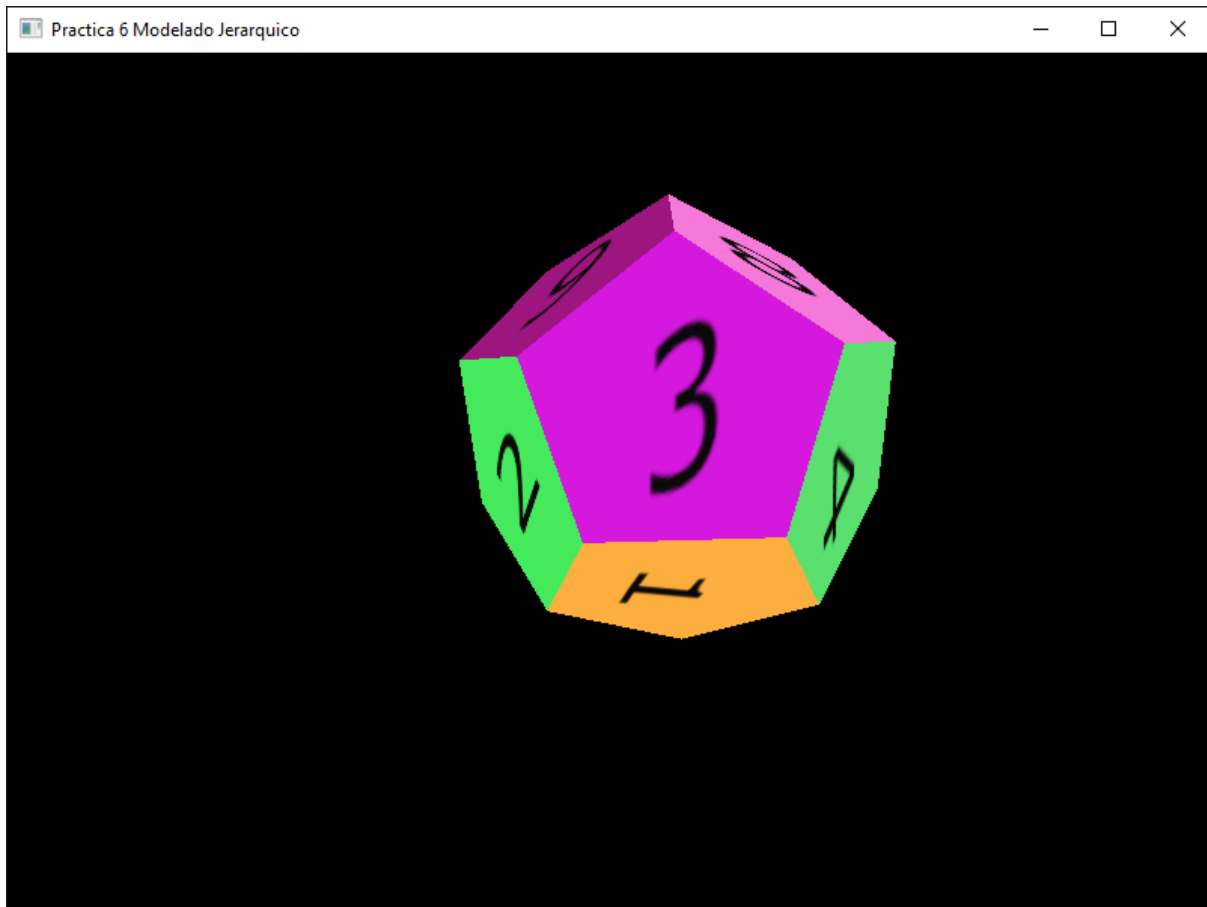
Primero tuve que investigar como hacer un dodecaedro y graficarlo para obtener los vértices, después cuando tenía los vértices los acomode en su respectivo lugar, y proseguí con los índices, y cuando hice esto la figura no me salía, no entendía qué estaba pasando hasta que me di cuenta que era necesario establecer desde ese momento la ubicación de la textura.

3. Conclusiones

Principalmente lo que ya comente, es necesario contar con los vértices de la textura ya establecidos a cada vértice de la figura para poderla visualizar correctamente, finalmente puedo decir que comprendí bastante bien el cómo texturizar un objeto.

Bibliografía

Liga de descarga: https://n9.cl/6vqzo