

Computer Graphics

- Model Loading (Questions)

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Possible Questions

What does the following on an .obj file mean?

```
f 1 4 2  
f 1/2 5/4 2/3  
f 1/2/2 3/4/3 8/5/1  
f 1//1 2//3 3//9
```

Possible Questions

- The face elements uses indices used to define the face (e.g., triangle)

```
f v1 v2 v3
f 1 4 2          # a triangle with the vertice 1, 4, 2
```

- Additionally, with texture coordinates

```
f v1/vt1 v2/vt2 v3/vt3
f 1/2 5/4 2/3      # a triangle with the vertice 1, 5, 2 and the
                   # texture coordinates 2, 4, 3
```

- Now, with vector normals

```
f v1/vt1/vn1 v2/vt2/vn2 v3/vt3/vn3
f 1/2/2 3/4/3 8/5/1 # a triangle with the vertice 1, 3, 8 and the
                   # texture coordinates 2, 4, 35
                   # a normals 2, 3, 1
```

Possible Questions

- Indices with normal only

```
f v1//vn1 v2 //vn2 v3 //vn3
f 1//1 2//3 3//9      # a triangle with the vertice 1, 2, 3
                       # and the normals 1, 3, 9
```

Possible Questions

How can the normal of a mesh be determined?

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How can the normal of a mesh be determined?

- We calculate the normal of the triangle first
- The normal of a vertex is determined by adding the normal of incident triangles and weight them with the area of the triangle

