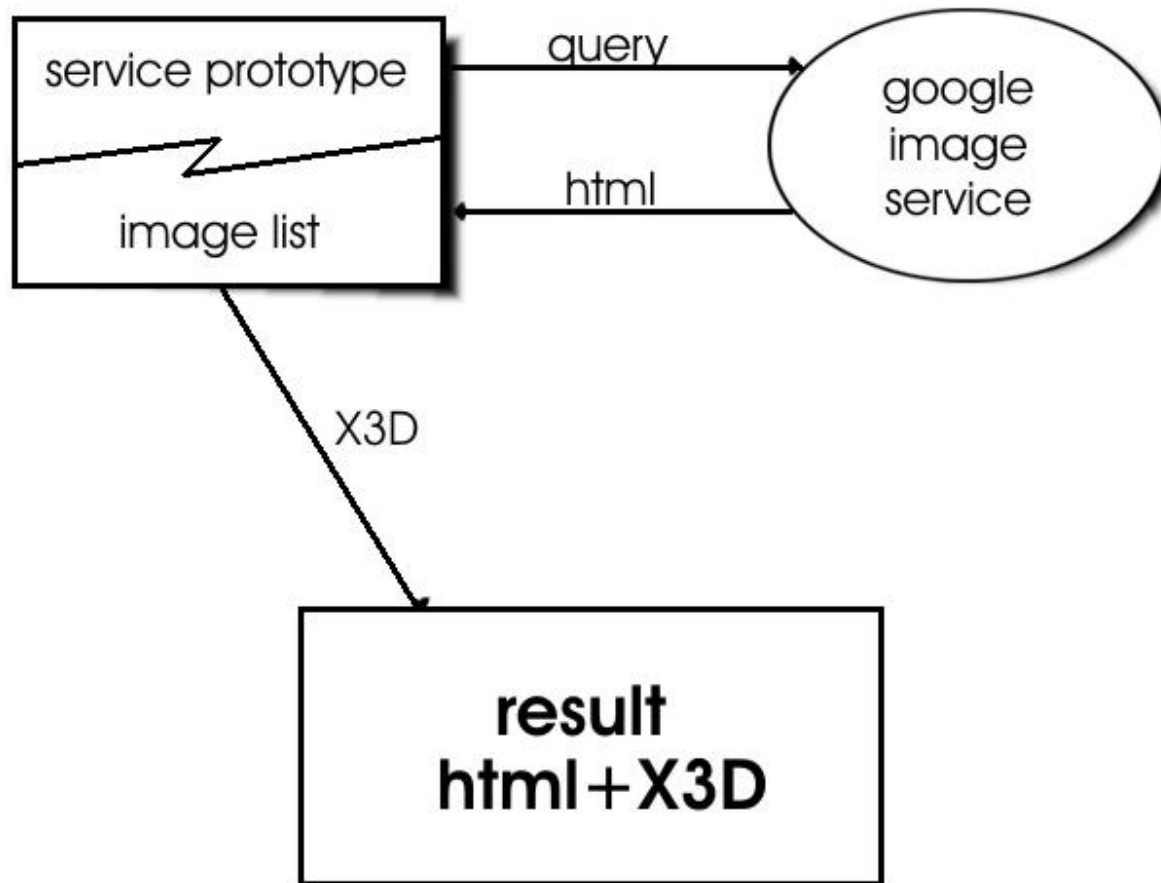

Research topic #3 on 3D Graphics

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Goal

- **Design a (non-working) prototype for a new 3D interface to a Web image search service**
 - Do a query on Google Images with some keywords and save the first n returned thumbnails
 - Design then and build a 3D scene that displays those thumbnails to the user, allowing them to click to reach the Web page where the image is contained
 - The idea is to try to come up with an interface that is hopefully more effective
-

Structure of the service



Building the 3D scene with returned images

- Images are shown on sides of dodecahedron
 - MouseOver event show preview of the image
 - Each side of dodecahedron contains a URL of the Web page where the image is contained
 - Dodecahedron is rotating because of easy preview of images
-

Look of the 3D scene

Rotated dodecahedron

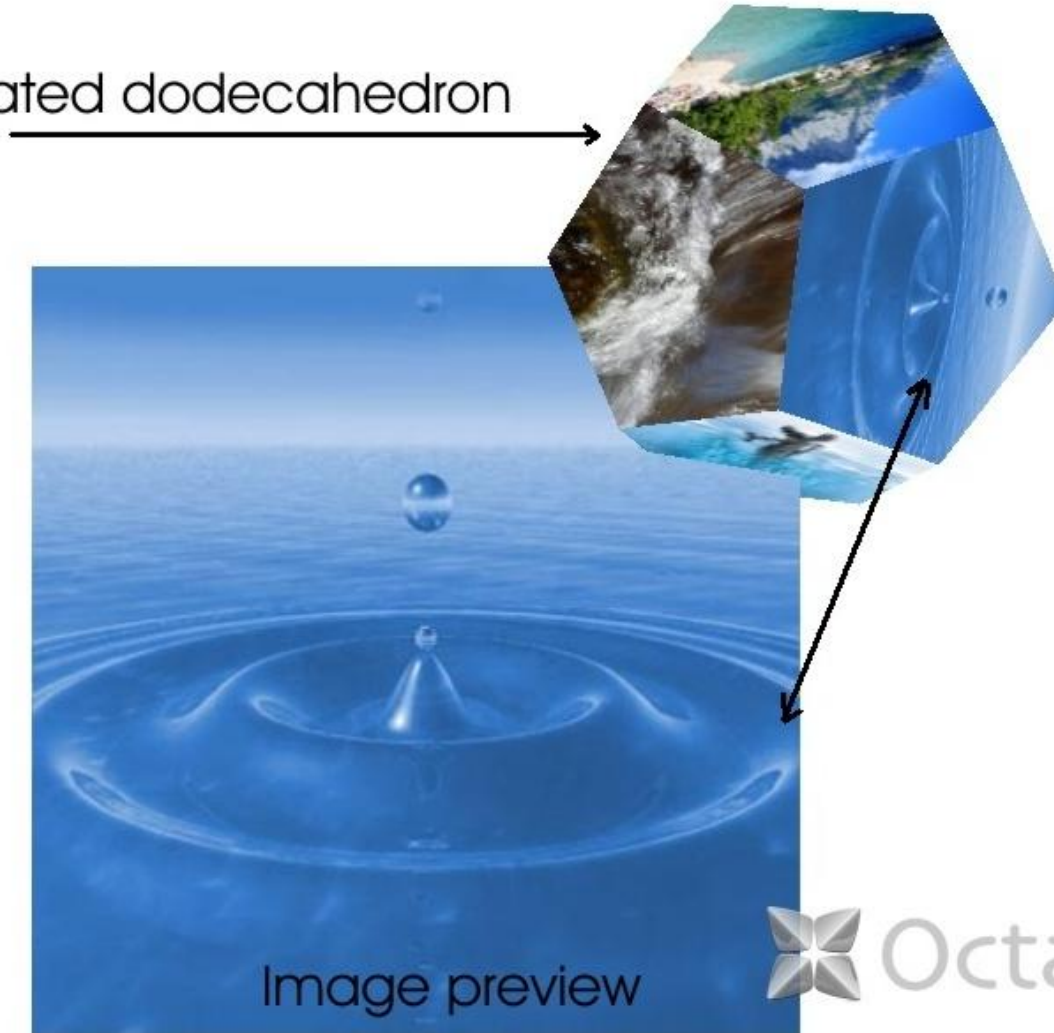


Image preview

 Octaga™

X3D code

- Sides of dodecahedron

```
<Anchor parameter='target=_blank' url='PAGE_URL'>
<TouchSensor DEF='TOUCH1' description=''/>
  <Shape>
    <IndexedFaceSet coordIndex='4 3 2 1 0' solid='false'>
      <Coordinate point='ARRAY_OF_COORDINATE_POINT_' />
    </IndexedFaceSet>
    <Appearance>
      <ImageTexture url='IMAGE_URL' />
    </Appearance>
  </Shape>
</Anchor>
```

- Each side is an IndexedFaceSet element with appropriate Coordinates and appropriate ImageTexture element
- There is an Anchor element on each side and a TouchSensor element for MouseOver event

■ Image preview element

```
<Shape>
<IndexedFaceSet coordIndex='0 1 2 3' solid='false' >
    <Coordinate point='-3 -3 0 0 -3 0 0 0 0 -3 0 0' />
</IndexedFaceSet>
<Appearance> <ImageTexture DEF='IMAGE' url="" /> </Appearance>
</Shape>
```

■ MouseOver event is changing the ImageTexture on this shape with following JavaScript

```
<Script DEF='changeURL'>
<field name='newurl' type='MFString' accessType='outputOnly' />
<field name='isOver1' type='SFBool' accessType='inputOnly' />
<![CDATA[

    ecmaScript:
    function isOver1(value) {
        if (value) newurl = new MFString('IMAGE_URL');
        else newurl = new MFString("");
    } ]]>
```

■ Routing

```
<ROUTE fromNode='TOUCH1' fromField='isOver' toNode='changeURL' toField='isOver1' />
<ROUTE fromNode='changeURL' fromField='newurl' toNode='IMAGE' toField='url' />
```

Example (working, but not fully tested)

<http://dev.ffuis.edu.ba/fit>

