Fragment Shaders – Built-in variables and tricks

gl_FragCoord

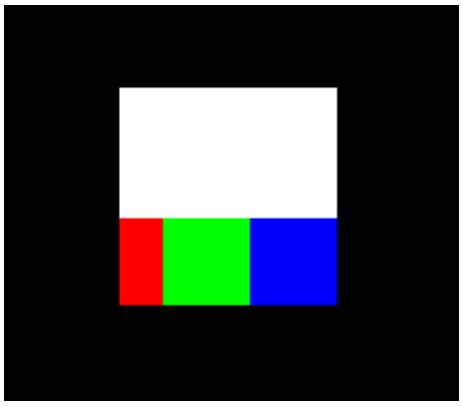
A vector 2 of all fragments / pixels directly from the current screen resolution.

```
if(gl_FragCoord.x < 100.0){
discard;
}

if(gl_FragCoord.y < 100.0){
discard;
}

gl_FragColor = vec4(1.0, 0.5, 0.0, 1.0);
```

gl_PointCoord

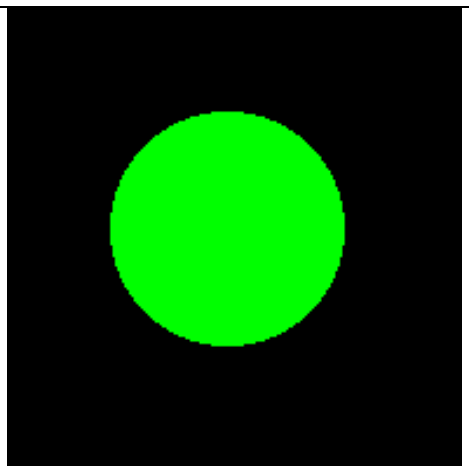
A variable which contains where within a point primitive the current fragment is located, and only available when using rendering mode 'GL_POINTS'.

```
vec3 col;

if(gl_PointCoord.x < 0.2){
col = vec3(1.0, 0.0, 0.0); //red
}

if(gl_PointCoord.x >= 0.2){
col = vec3(0.0, 1.0, 0.0); //green
}

if(gl_PointCoord.x >= 0.6){
col = vec3(0.0, 0.0, 1.0); //green
}

if(gl_PointCoord.y < 0.6){
col = vec3(1.0, 1.0, 1.0); //white
}

gl_FragColor = vec4(col, 1.0);
```



Create circle from GL_POINT (rendered as a square by default).

```
vec2 dist = gl_PointCoord.xy - vec2(0.5);

if(length(dist) < 0.5){
col = vec3(0.0, 1.0, 0.0);
}

gl_FragColor = vec4(col, 1.0);
```



Create a 'moving' pattern, that will shrink and grow with a Sine wave.

```
(insert the following line before the if condition as above)
...

dist = sin((0.005 * vsTime) * dist);

...
```