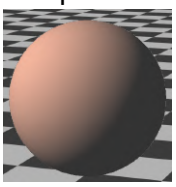
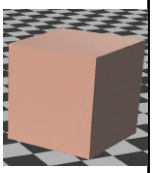
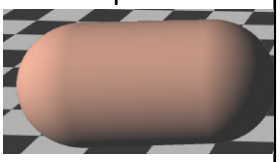
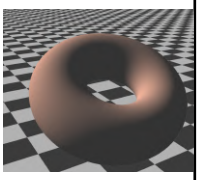
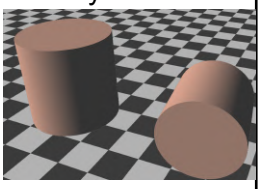
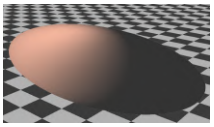
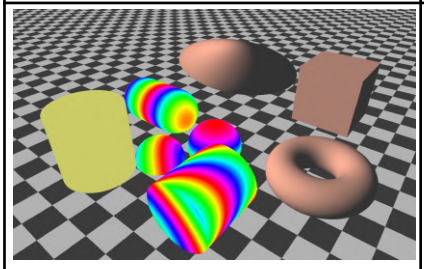
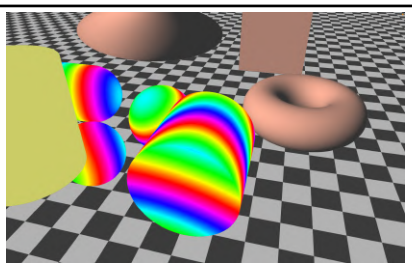
Oscar Roth p2002518; Nassim Messikh p1802799

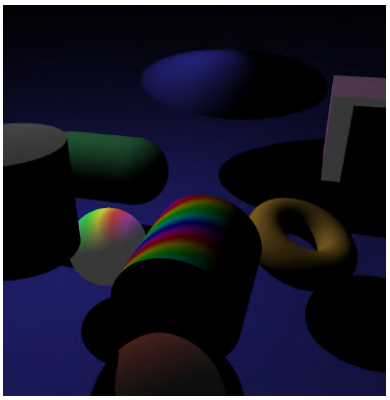
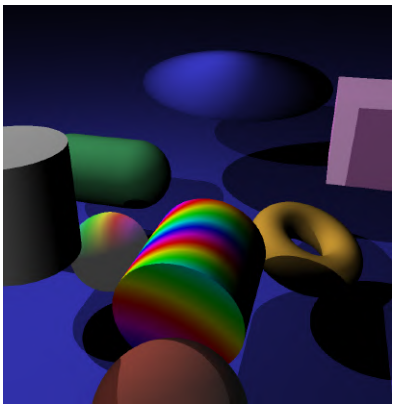
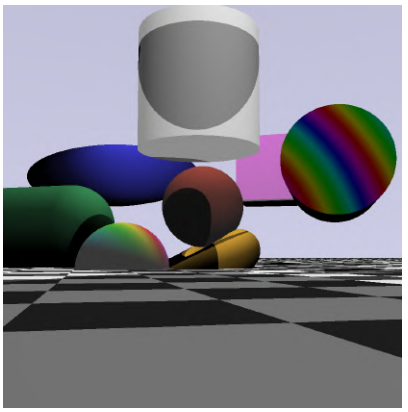
Rapport TP Image

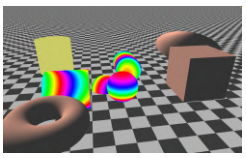
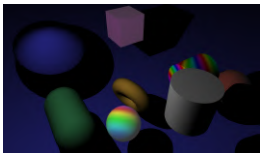
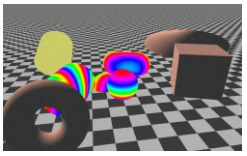
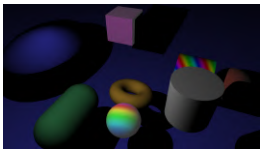
Lien du ShaderToy : https://www.shadertoy.com/view/cldyDj

Primitives

Sphere	Boite	Capsule	Tore	Cylindre
				
Ellipsoïde				
				

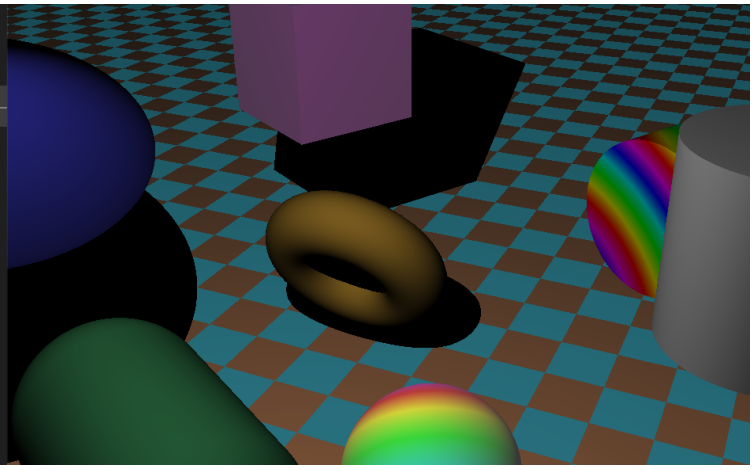
Etat initial	Après la translation (1.5,1.0,2.0)
	

Ombres avec une source unique de lumière	Ombres avec Plusieurs sources de lumière (2)
	 

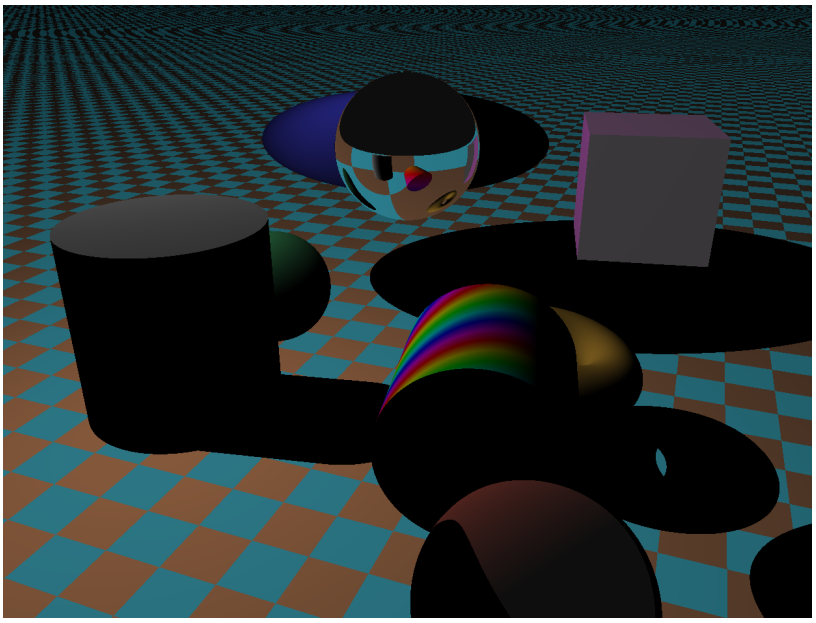
Rotation continue des formes en temps réel	
 	 

Texture damier alternant des cases diffuses et spéculaires

```
Material CheckerboardTexture(vec3 point) {
    // Définir la taille d'une case du damier
    float checkerSize = 1.0;

    // Ajouter une petite valeur d'epsilon aux coordonnées du point
    float epsilon = 0.1; // Ajustez cette valeur si nécessaire
    point += epsilon;

    // Calculer les indices de cases en x, y et z en utilisant des valeurs en virgul
    float xIndex = floor(point.x / checkerSize);
    float yIndex = floor(point.y / checkerSize);
    float zIndex = floor(point.z / checkerSize);

    vec3 diff, spec, amb;
    amb = vec3(0.);

    // Alternance des cases diffuses et spéculaires en fonction des indices
    if ((int(xIndex) + int(yIndex) + int(zIndex))%2== 0) {
        // Case diffuse
        diff = vec3(0.8, 0.5, 0.3);
        spec = vec3(0.1, 0.1, 0.1);
    } else {
        // Case spéculaire
        diff = vec3(0.1, 0.1, 0.1);
        spec = vec3(0.2, 0.7, 0.8);
    }

    return Material(diff, spec, amb);
}
```



Réflexion depth = 1 pour la sphère au centre



Le Shade tourne de 60 à 165fps.
Il existe 7 formes différentes.
Il y a une dizaine de textures différentes dont la coloration radiale, concentrique et un damier.