Your project task is to implement an effect of choice and render and composite this effect into a real scene. We will supply you with back-plates (video and stills), HDR light probe images and other information that may be required from a number of scenes that you may choose from.

Please keep in mind that the project should be thought of as a programming exercise.

**Project outline**

- Implement effect
- Render and composite effect into
- Background material from one of the captured locations
- Your project should be viewed as a programming exercise
Captured data

- High resolution HDR light probe images (panoramas)
- Video sequences
- High resolution still images

Note to self - Remember to show data in Finder!

Project Task

1.) Implementation
- Implement effect/rendering technique of choice
  - Image based lighting
  - Advanced material model
  - Fluid simulation (smoke, fire, water ...)
  - Importance sampling
  - Light source extraction from HDR panoramas
  - Crowd simulation
  - Ray tracing, photon mapping
  - ...

Project Task

2.) Rendering
- Build/model a scene that you want to render
- Use HDR panoramas to render the scene
  - Maya, 3D-Studio Max...
  - Your own rendering software
  - Importance sampling
  - Light source extraction

Computer Graphics

Rendering equation:

\[ B(x, \omega_o) = \int_{\Omega} L(x, \omega_i) p(x, \omega_i \rightarrow \omega_o) \, d\omega_i \]

Discuss: IBL + LightGen
Project Task

3.) Compositing

- Composite your rendering onto background material
- Video or stills
- Alpha blending
- Own software
- Matlab
- Compositing software such as Autodesk composite

Project

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