



VisCommerce

Visualization Powered Commerce

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- **Website**
- **Showroom3D**
 - Desktop
 - Mobile
 - Living_Room
- **Collaboration**



Website

- Landing page should load within 2 Sec on 1 Mbps network speed.
- All the links have to work, open in new tab.
- Navigation in header to be clean.
- No youtube logo.
- Lighthouse score to be maintained
 - Mobile :- 70 +
 - Desktop :- 90 +
- Web Form
 - Email (Recipients should be notified)
 - Checked by nodeadmin (database).
 - Captcha
 - Whatsapp

Overview (Showroom3D)

Software

- Manually test features
- Regression (Automation)

Catalog3D

- Catalog – Furniture, Lighting, Plants, Accessories, etc.
- 3DCommerce Compliance – Mesh, Textures, File-Size, Drawcalls, # of Triangles, etc.
- Image Fidelity - Ensure rendered image conforms to 3DCommerce guidelines and fidelity tests

Device

- Test on real devices using browserstack.com

Performance

- Ensure performance to Google's guidelines
- CDN usage
- progressive loading, draco mesh compression, etc

UI/UX

- Conformance to Adobe guidelines
- Progress Indicator, Prompt



Software

Feature

- Manually test every feature on prominent devices. E.g. Windows desktop, iPhone
- Lighting
 - Controls (On-Off, Intensity, Color)
 - Effects (Shadows, Reflection, Ambient Occlusion, Anti-aliasing, Volumetric, Fog, Glow, etc.)
- Rendered Image Fidelity
 - <https://modelviewer.dev/fidelity/>
 - Ensure that we model and demonstrate material quality to the highest standard.
 - For e.g. Leather, Wood, Glass, Granite and other materials used in home-decor
- HD rendering
 - Image & Video
 - Low & High resolution (1K, 2K, 4K)
 - Image quality test – To be researched



Regression testing

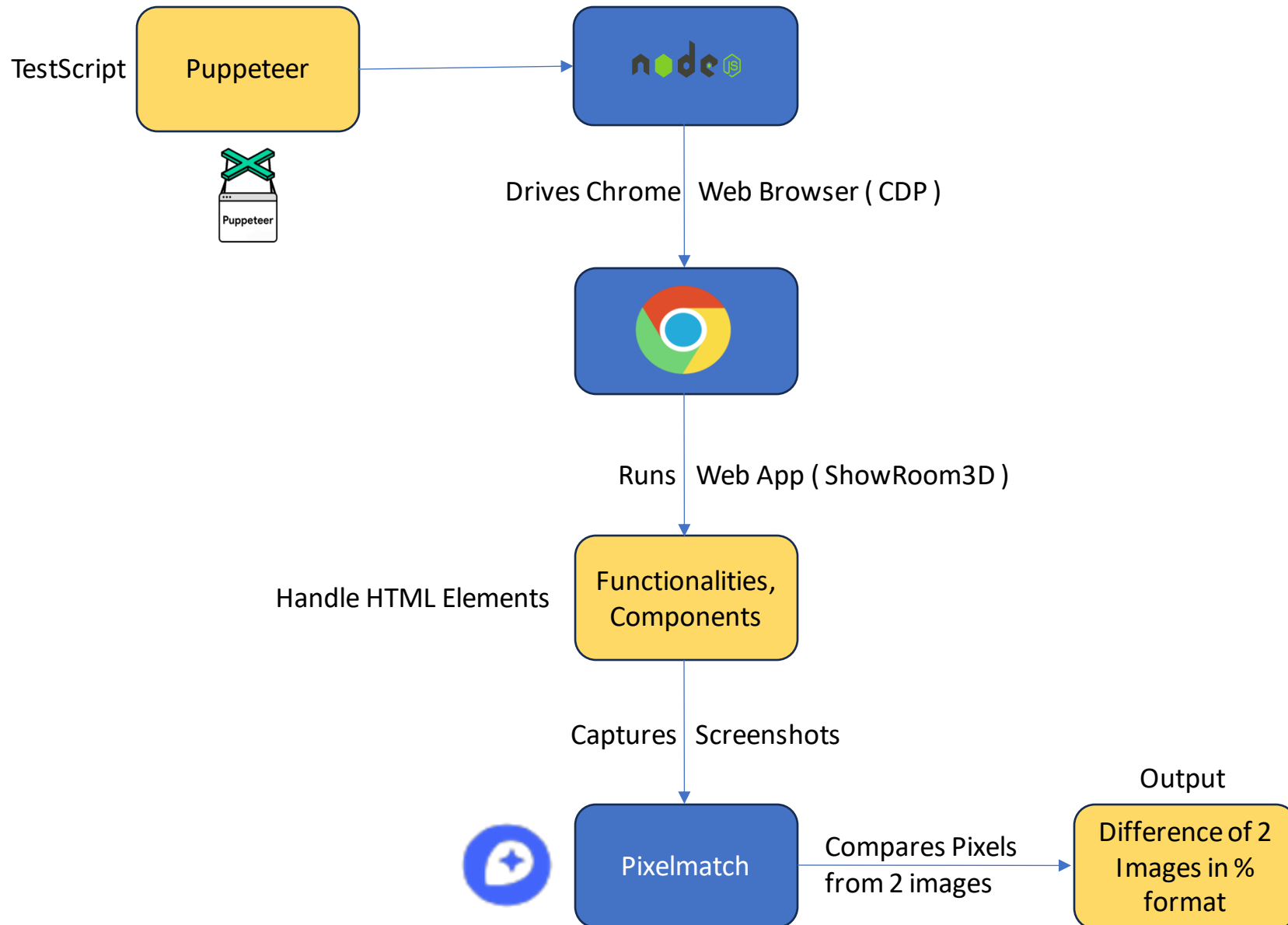
- Puppeteer
 - <https://pptr.dev/>
 - node.js based browser-automation
- Pixelmatch
 - Image comparison, thresholding
 - <https://github.com/mapbox/pixelmatch>



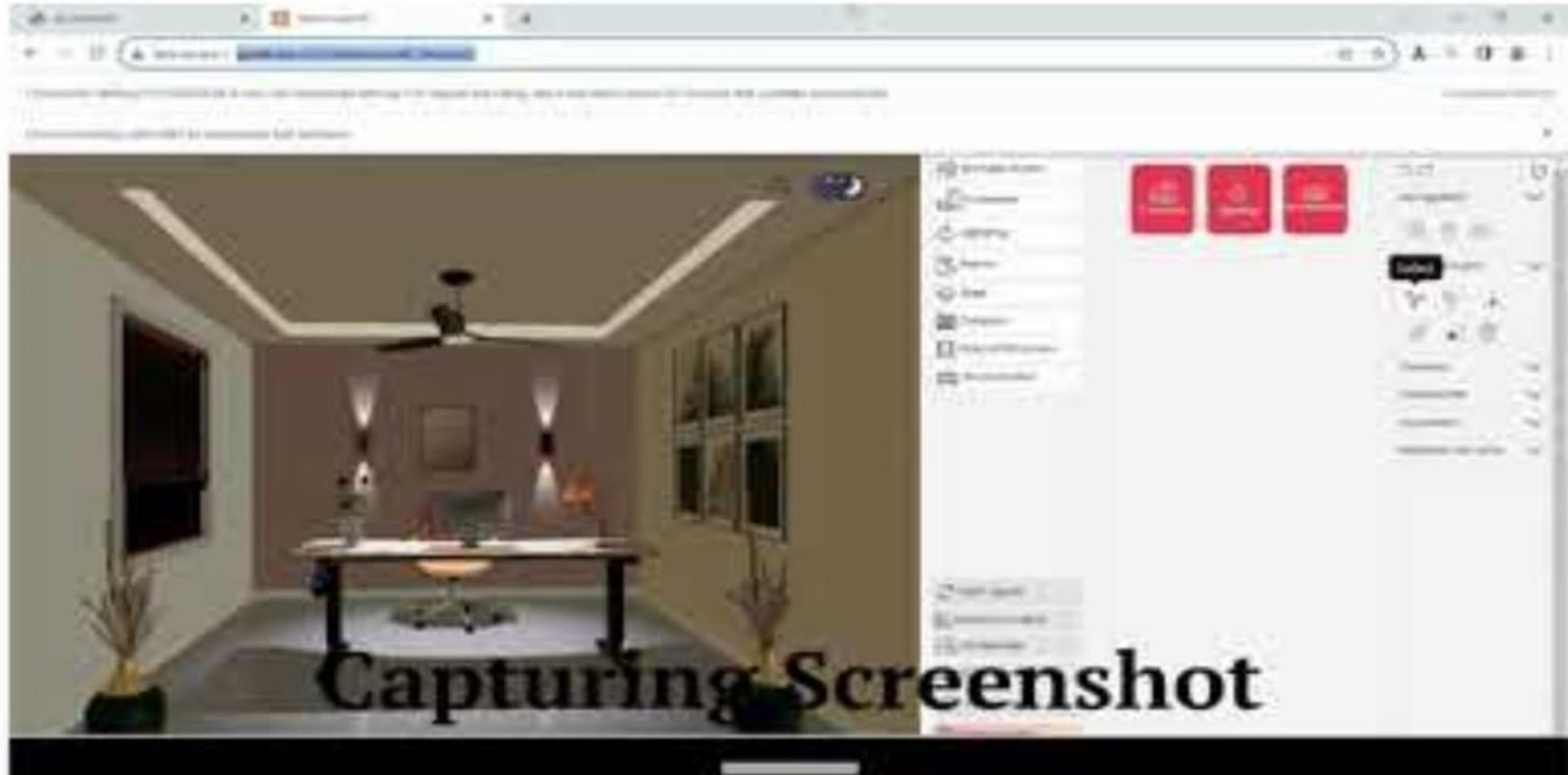
Logging

- Error warning info to be checked

Architecture Diagram (Regression Testing)

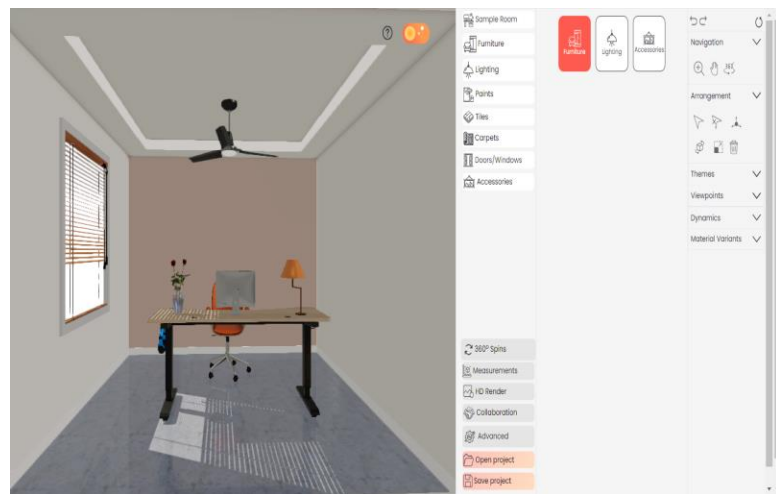


Regression Testing Video

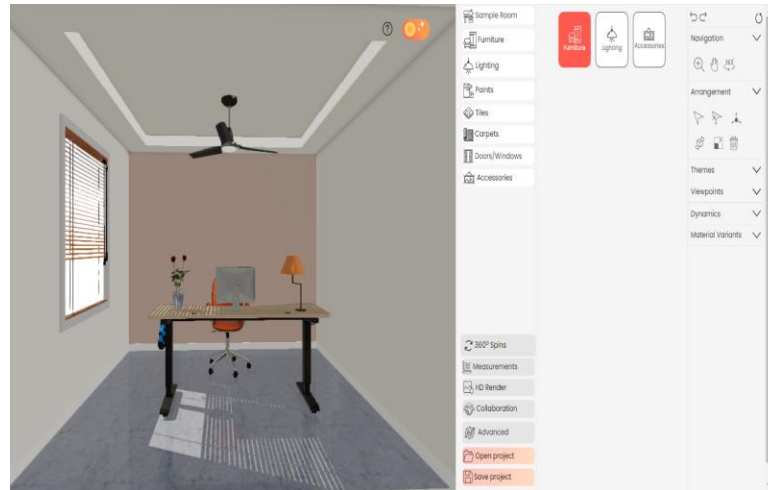


Regression Test No. 1

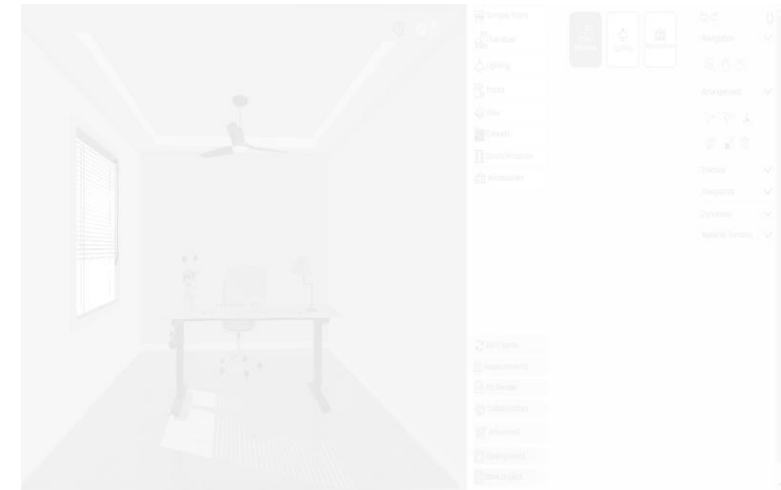
Furniture



Expected



Actual



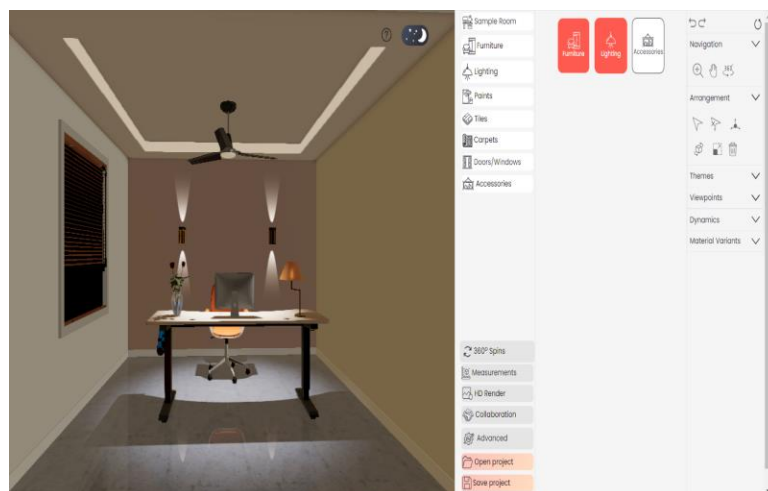
Similarity = 100 %

Regression Test No. 2

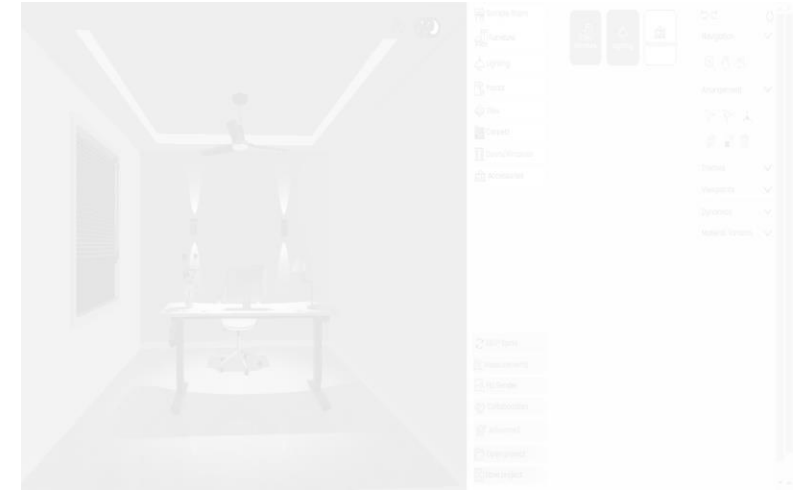
Furniture with lighting



Expected



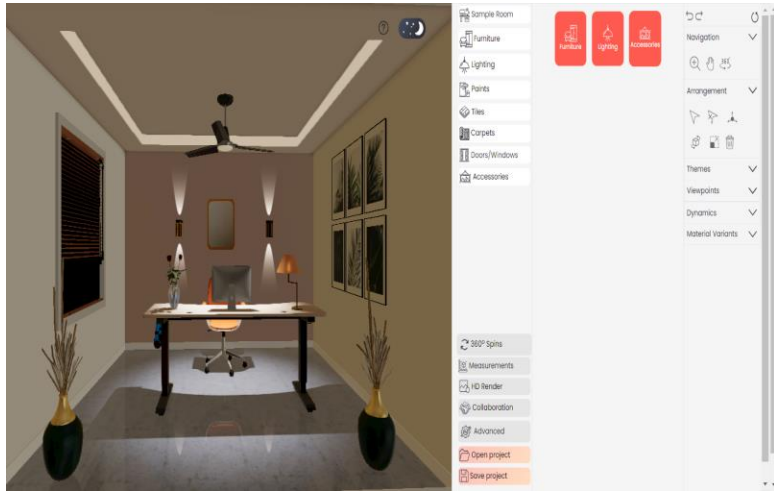
Actual



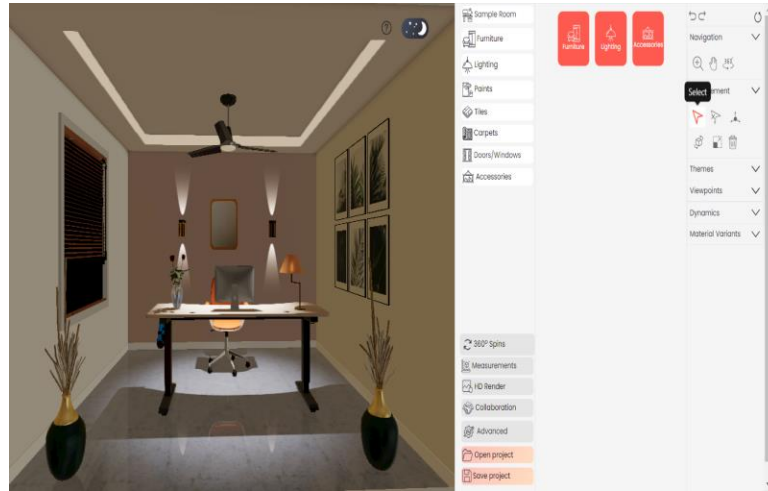
Similarity = 100 %

Regression Test No. 3

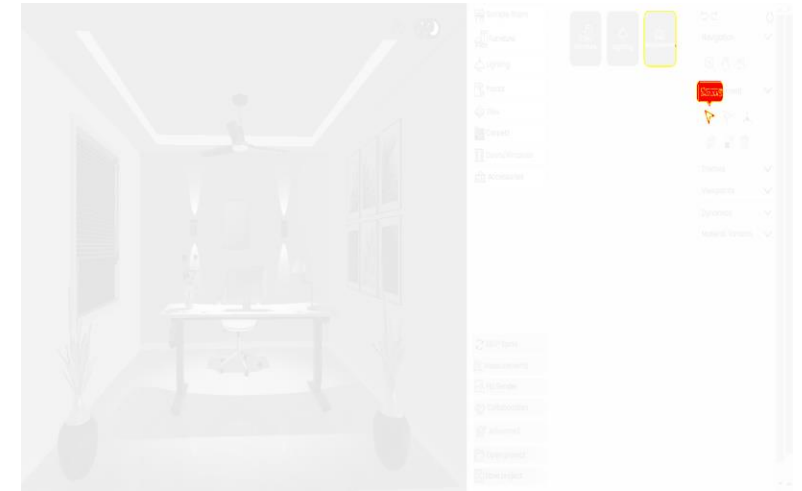
Sample Room with UI Change



Expected



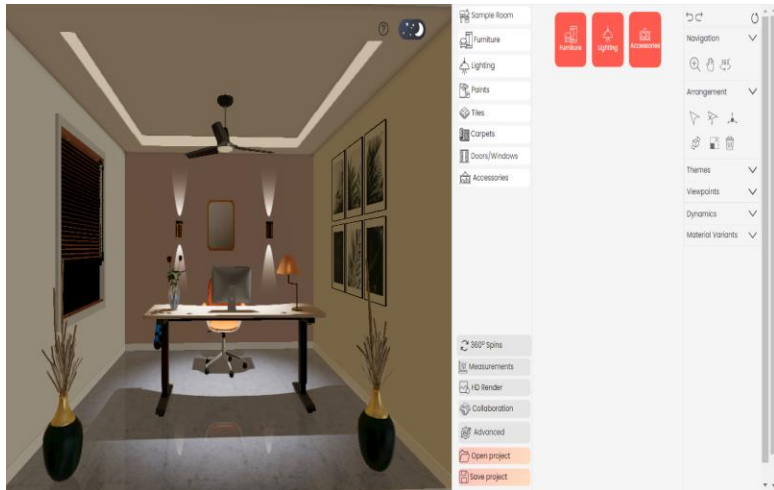
Actual



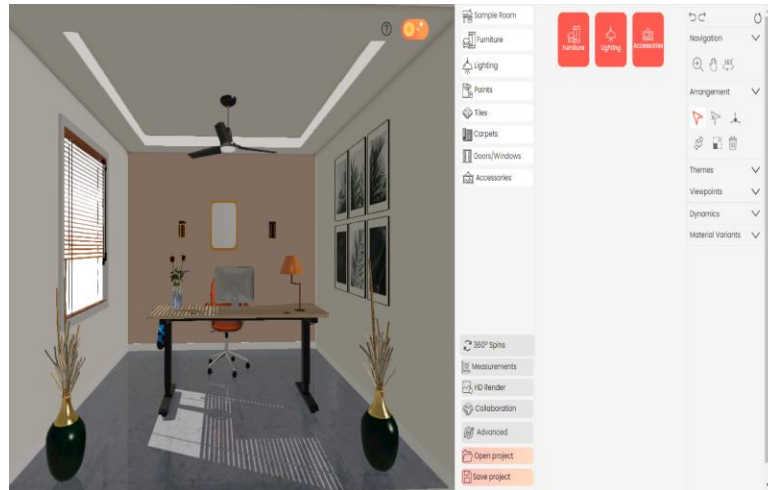
Similarity = 99.88 %

Regression Test No. 4

Sample Room with Day/Light Switch change



Expected

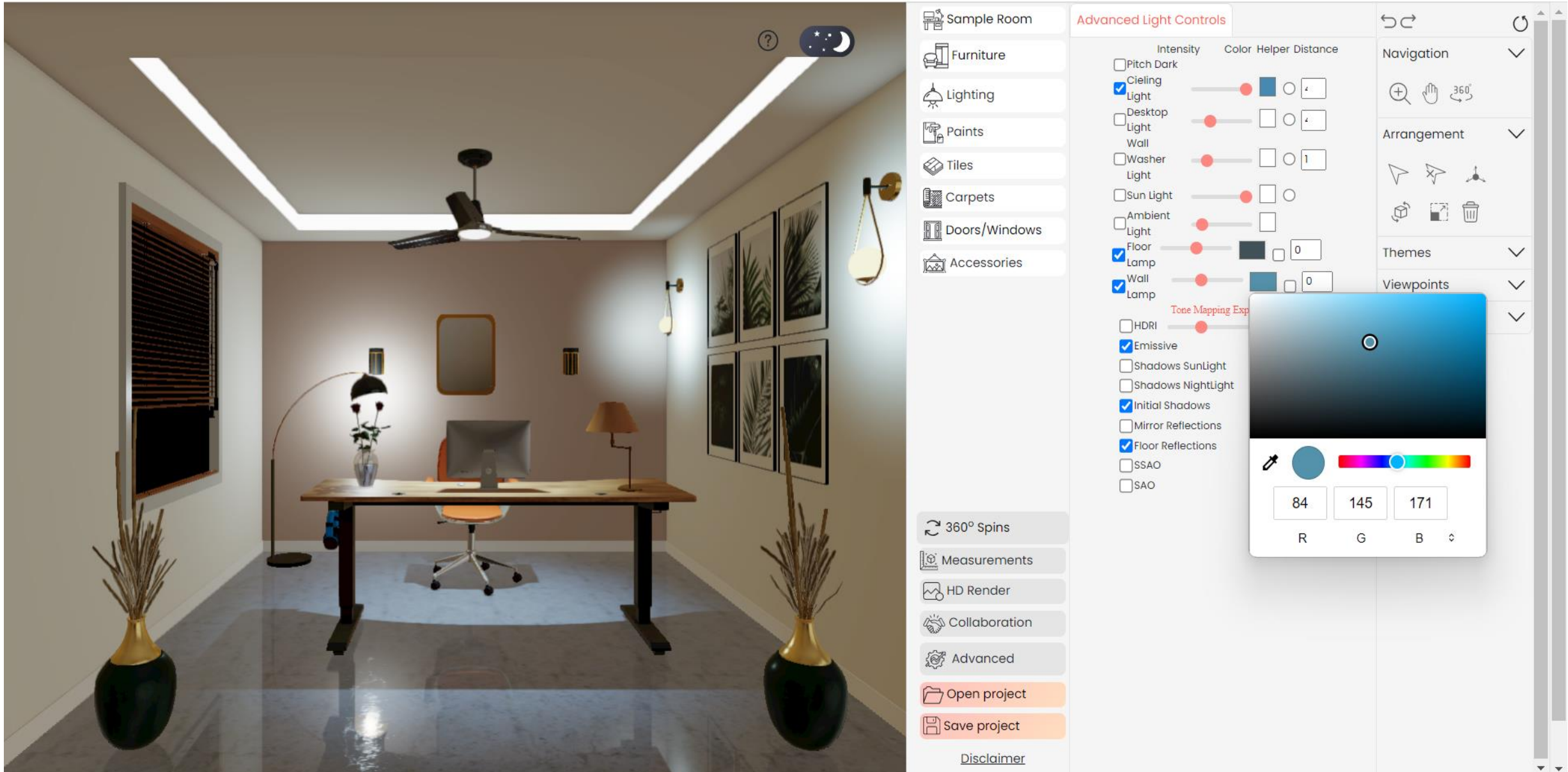


Actual



Similarity = 65.90 %

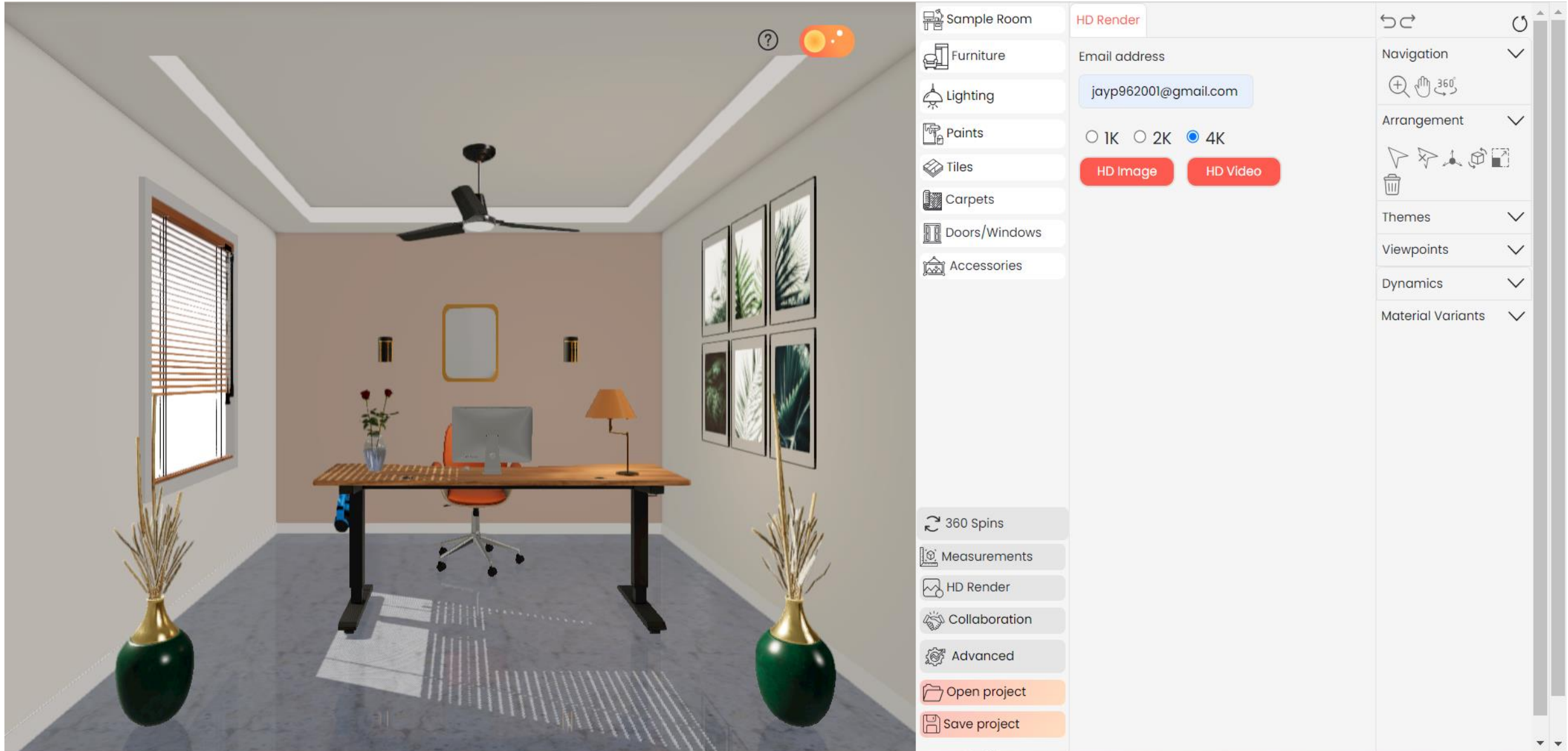
Lighting



Lighting



HD Render



HD Render



Logging

The screenshot displays a 3D interior design application. The main view shows a rendered room with a desk, chair, and decorative elements. The right sidebar contains various design tools and settings. The bottom console shows performance logs, with a red circle highlighting a specific section of the log.

Console Log:

```
chair drawcalls 424
Furniture Loading Time: 15264.968017578125 ms
mirror drawcalls 442
frames drawcalls 474
vase drawcalls 504
Accessories Loading Time: 2233.35595703125 ms
1
```

The red circle highlights the log entries for 'chair', 'mirror', 'frames', 'vase', and 'Accessories', along with their respective drawcall counts and loading times. An arrow points from the text 'Error warning info to be checked' to the console area.

Error warning info to be checked

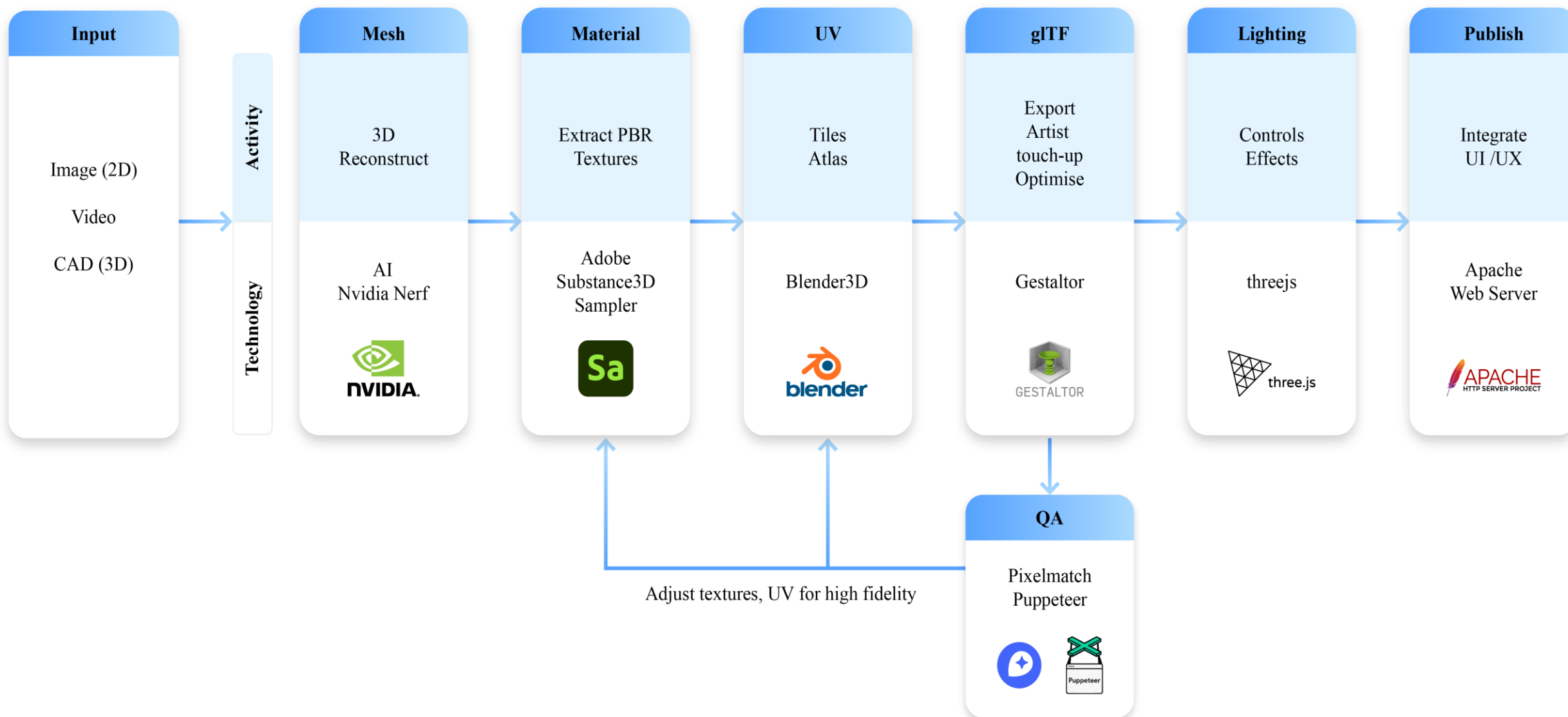
3DCommerce Compliance



- File format
- File size
- Drawcalls
- No of triangles
- Shape, Size, Material fidelity
- Categorization (categories, sub-categories)
- Search (Textual, 3D, Input)
- Product description
- Product dynamics
- Light controls
- Methodology (VisCommerce proprietary)



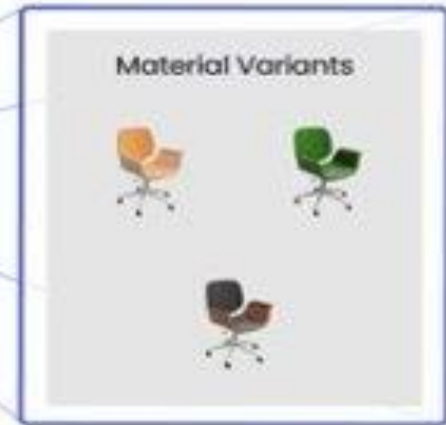
3DCatalog - Methodology



Material Variants



Room3D Web App

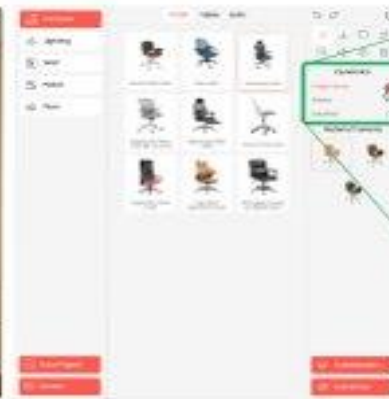


glTF Material Variants

Dynamics



Room3D Web App



glTF Animations, etc.

Dynamics



Device Testing

BrowserStack



- Test on all target platforms
 - Desktop (Windows, Mac, Linux)
 - Smartphone (Android, IOS)
 - Tablet (IOS, Android, Windows)
 - <https://www.browserstack.com/>



Performance Testing

Lighthouse



- <https://developer.chrome.com/docs/lighthouse/overview/>
- Ensure web-app conforms to lighthouse guidelines for mobile and desktop usage. (for e.g 90% for mobile)

UI operations

- Ensure every UI operation conforms to Google's UI guidelines
- <https://developers.google.com/speed>
- For e.g. if a Light Source within the scene is toggled the scene should respond within 2 seconds.

CDN

- Ensure images, GLB assets & Javascript libraries are on CDN



Compression

- Mesh (Draco) : 60 – 90 % reduction in 3D model and triangles
- Texture (Ktx2. Jpeg) : Can improve zoom performance



Network

- Emulate & Optimize performance and various network speed

Conformance to Adobe guidelines

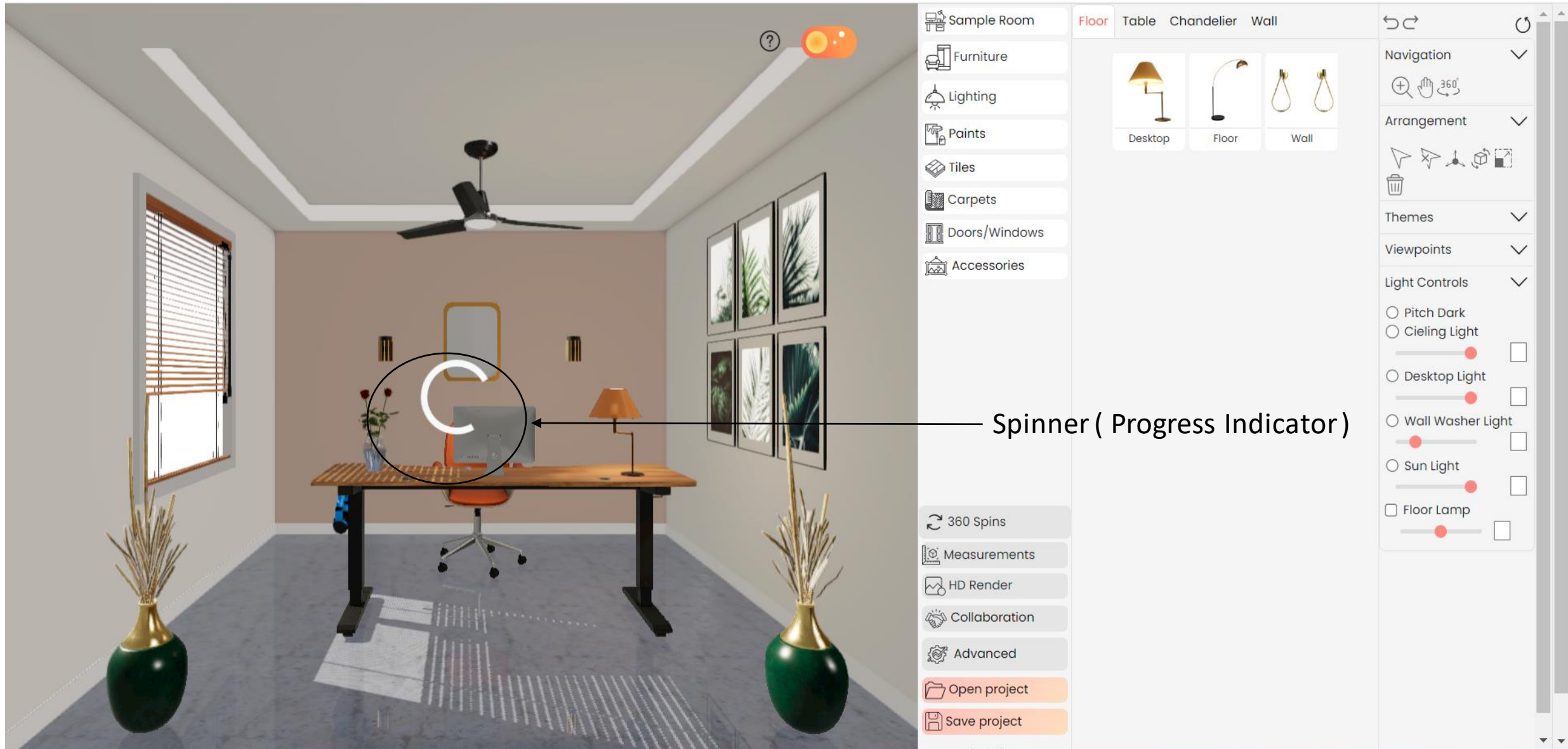
- <https://developer.adobe.com/xd/uxp/design/user-interface/>
- Usage of text, color, font, layout



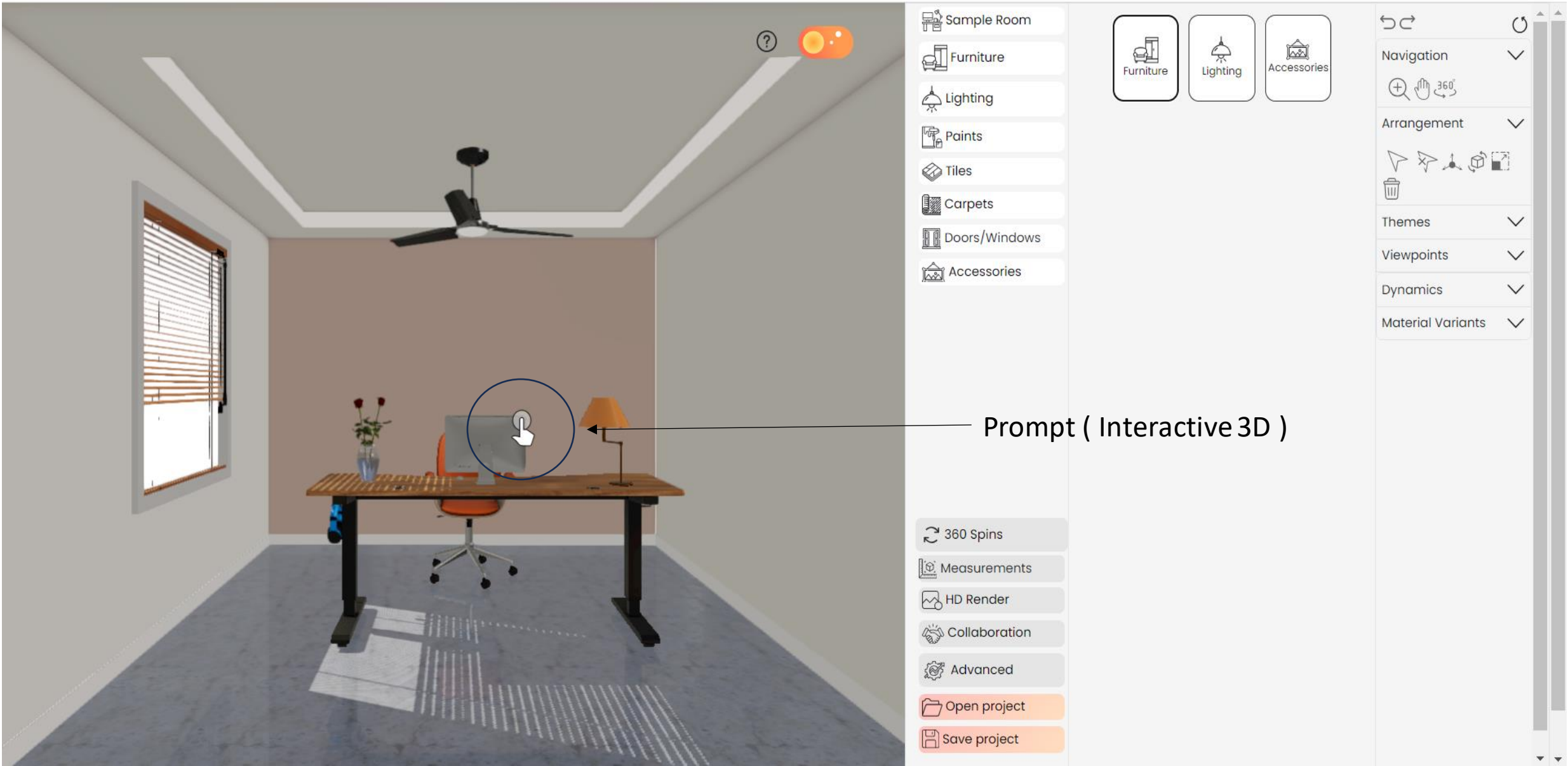
Progress Indicator, Prompt

- Every long running operation should have suitable progress indicator (Spinner) & Prompt (Interactive 3D)

Progress Indicator (Spinner)



Prompt (Interactive 3D)



Prompt (Interactive 3D)

