Project 2

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- Introduction to Computer Graphics – 2021/2022 – Project 2
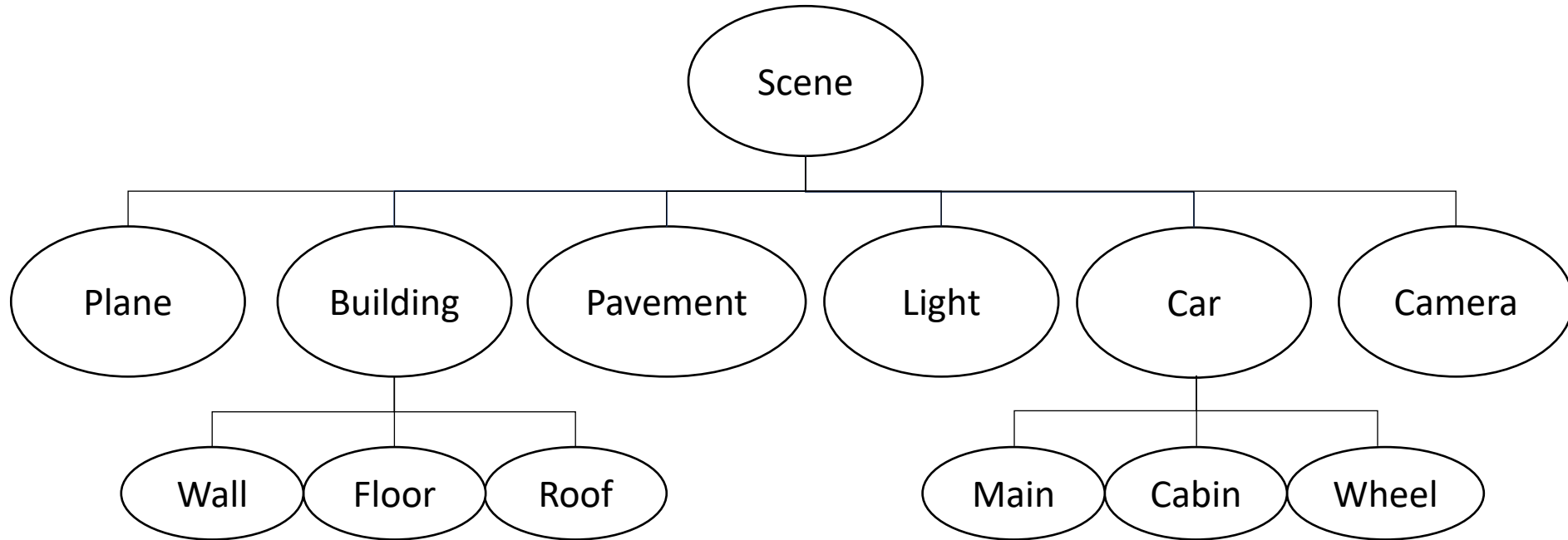
Models (Previous Work)

Models (6)

- 1 House
- 1 Car
- 1 Garage
- 1 Spotlight
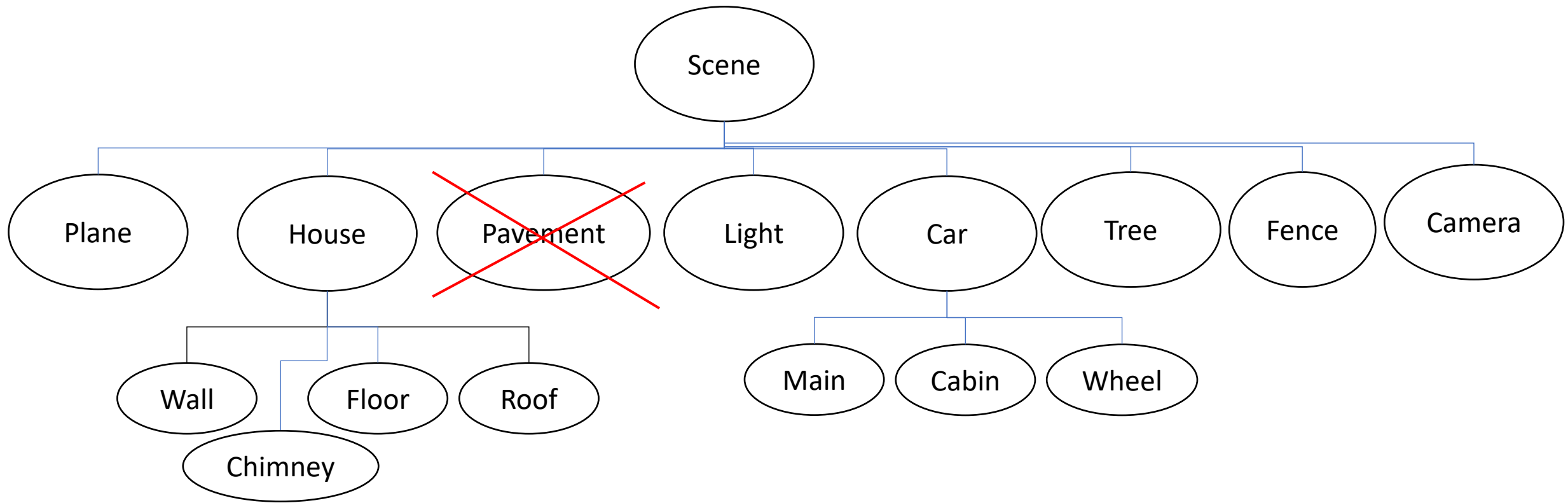- 2 pavements

Models

Models (11)

- 1 House
- 1 Car
- 1 Spotlight
- 5 trees
- 1 Fence
- 1 moon
- 1 sun

Scene Graph (Previous)

Scene Graph

Main Changes

- Cleaning of the code;

- House from BoxGeometry to Shape;

- Creation of the models of the sun, the moon, trees and fences, and a chimney;

- It is possible now to move the car using the arrow keys;

- Textures added to the scene;

User Interaction

- The user can use the mouse to zoom in and zoom out, panning and rotate the scene

- The user can use the keyboard to:
  - Stop/restart the movement of the spotlight(S key);
  - Reset the spotlight initial position(W key);
  - Move the car (Arrow keys) and increase/decrease its speed (A and D keys respectively)

Development (Code Organization)

- This project is divided into:
  - 2 javascript files (helper.js and scene.js)
  - 1 HTML file (index.html)
  - 1 folder with the modules used (lib)

Problems / difficulties

- CORS (texturing)
- 3D Model Import (GLTFLoader, OBJLoader, …)
- Model creation (holes on shapes)

- Raycaster (moving the elements of the scene)

Conclusions

- This project made me gain some knowledge about other features of three.js we hadn't used in the practical classes.

References

- Mainly Youtube videos about some themes such as:

    Shapes -> https://www.youtube.com/watch?v=Dyxvo4H24Hs&ab_channel=NikLever

    CORS Error -> https://www.youtube.com/watch?v=gPzMRoPDrFk&ab_channel=SoftAuthor

    Raycaster -> https://www.youtube.com/watch?v=a0qSHBnqORU&ab_channel=Genka

    GLTFLoader (mainly errors) ->

        https://discourse.threejs.org/t/unable-to-load-gltfloader-js/3985
        https://discourse.threejs.org/t/three-gltfloader-is-not-a-constructor/25681
        https://www.youtube.com/watch?v=yPA2z7fl4J8&ab_channel=RajatKumarGupta

- threejs.org (Documentation)