# SpinalBuildingSystem
# Reference Guide

This guide was created in the context of the tutorial “Smart Building Emergency” by SpinalCom. Its aim is to explain a system where the user can create a digital building and manage the usage schedule of the flats in it. This is taken as a starting point for the already mentioned tutorial.

It is assumed that the reader has already downloaded and ran the SpinalBuildingSystem.

## Table of contents:

# Folder and files structure

You should have received a project which contains at least this folders and files:

- models-manager/
    - models/
        - is-sim.models.js
        - building.js
    - is-sim-files/
        - icudtl.dat
        - nw.pak
        - is-sim

The files under the “models” folder are the structure of the data used by “is-sim” and all along the application. Note that if you change these models, “is-sim” will not benefit from these changes since it contains a copy of them inside the binary.

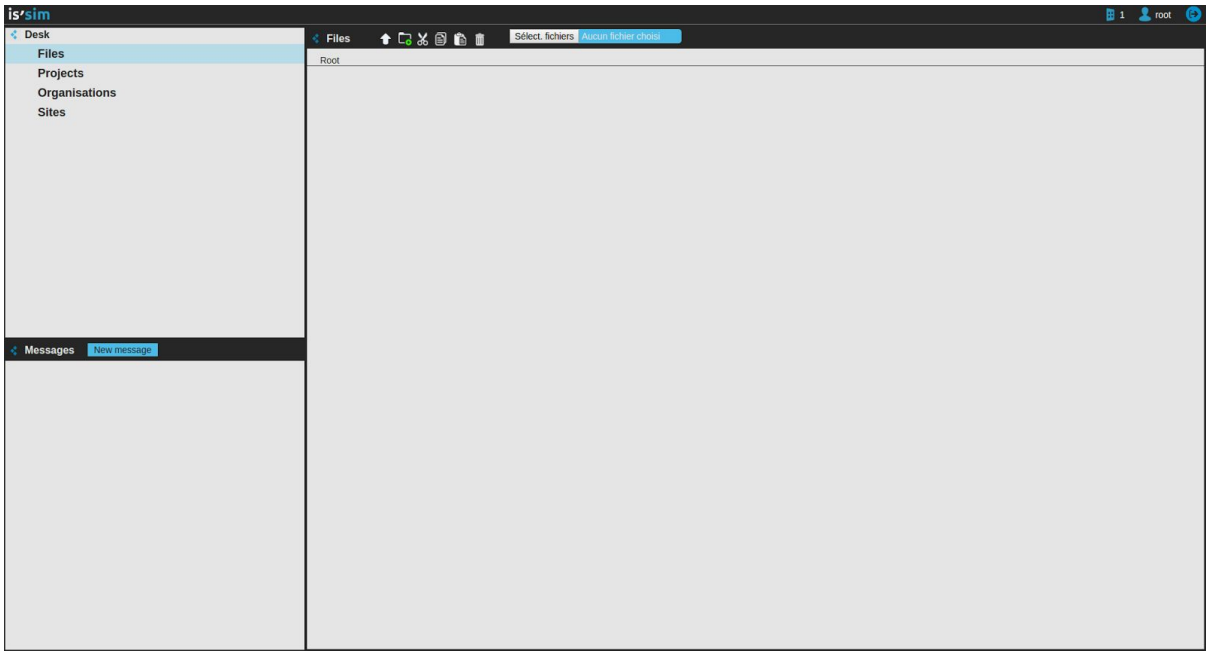
The files under the “is-sim-files” are needed to run “is-sim”. One of these files is the “is-sim” binary itself.

# Usage of the Graphic Interface “is’sim”

## 1) Using the “Desk”

- Launch “is-sim” with the launching the binary from a terminal:

  smart-building/models-manager/is-sim $ ./is-sim




In this window you will find the following:

**Files:** Intern file system of the platform, from where one can upload files from the hard disk, create folders, save files from the environment…

**Projects:** Each project opens an unique working environment (a Lab).

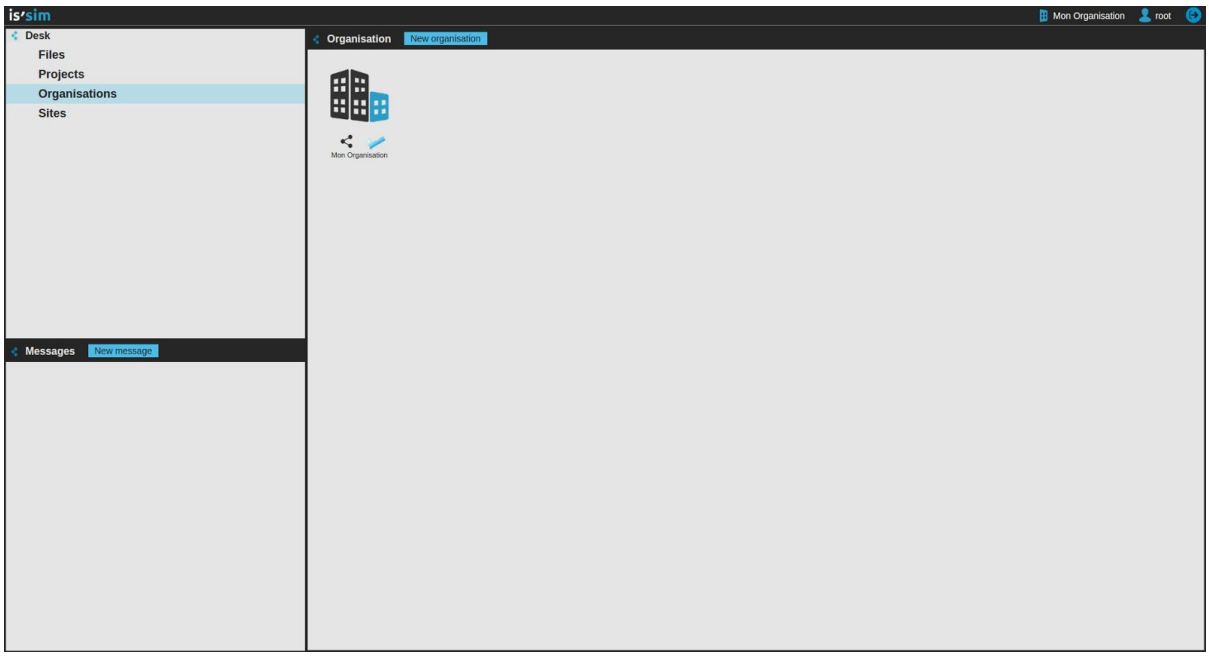
**Organisations:** An organisation isa group of applications. A session is linked to an organisation and every project of that session will have access to the applications of the organisation. One can create, modify, and change from organisation here.

**Sites** : not used

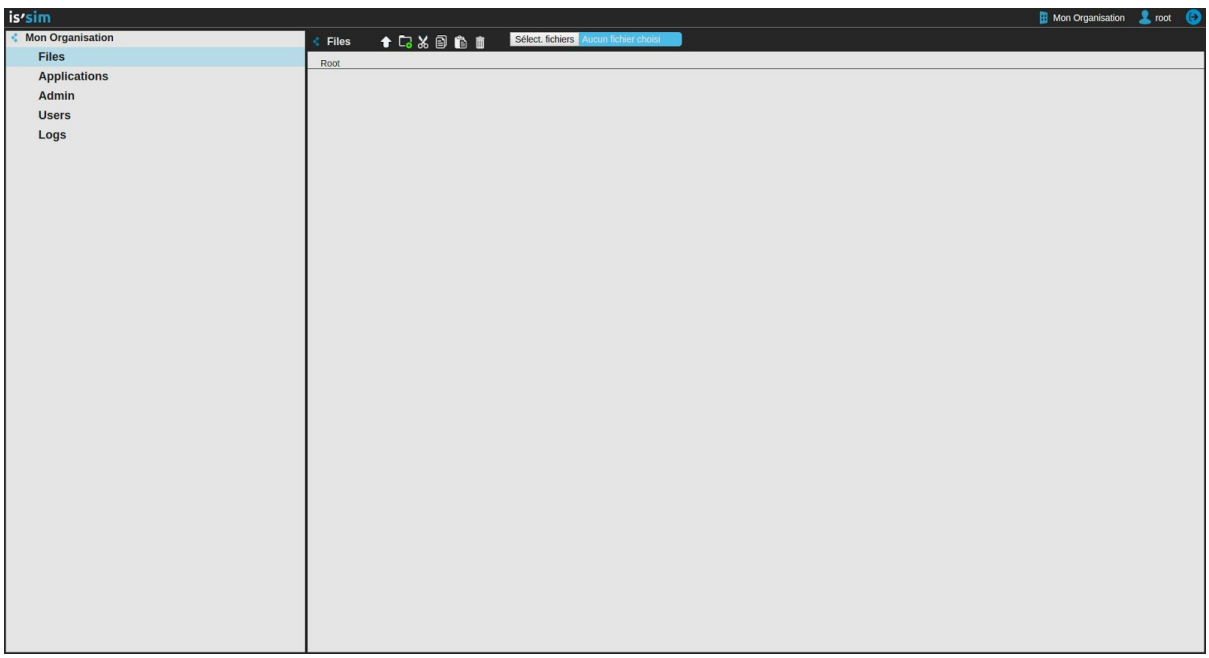
# 2) Create a new organisation and attach an application

From the Desk:

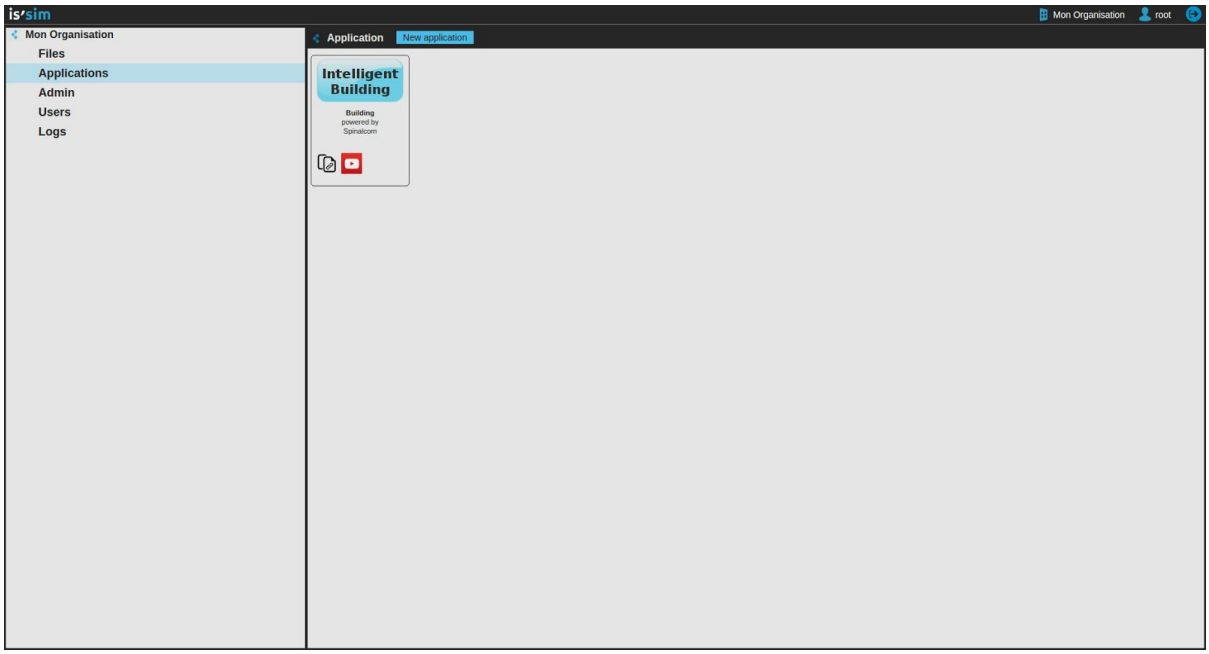
- Click on “Organisations”
- Click on “New organisation”
- Give a name to the organisation




- Double click on the icon of the created organisation
- Go to “Organisations”



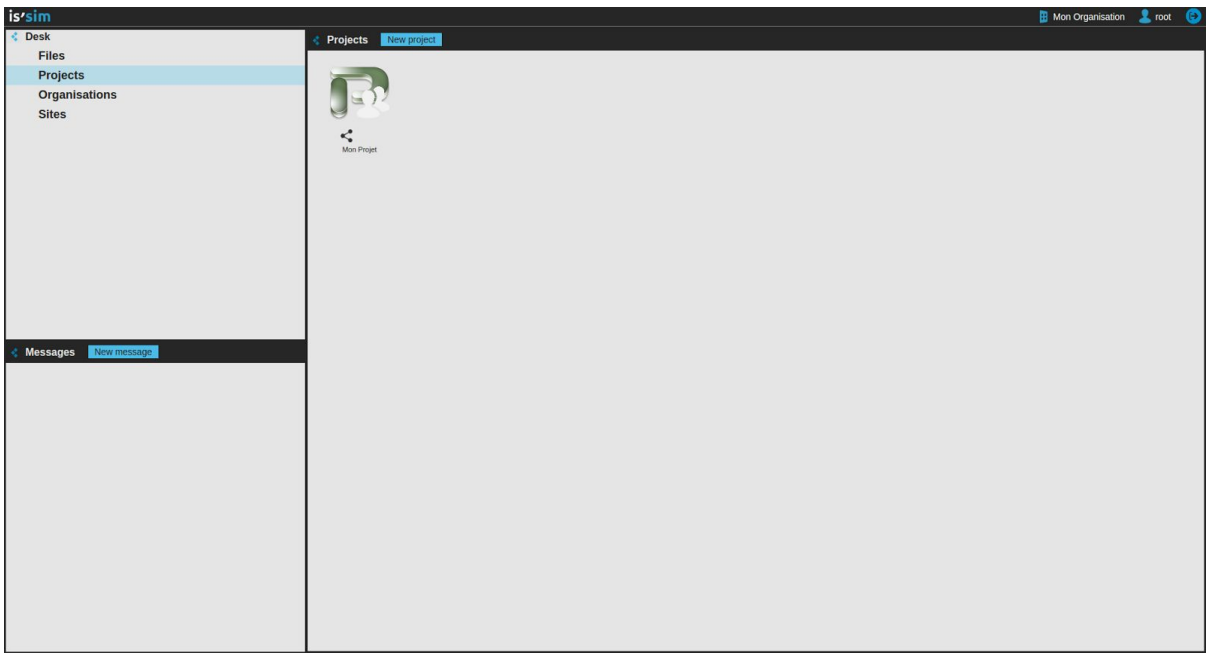
- Click on “Applications”
- Click on “New application”
- Click on the icon of the application “Intelligent Building”




## 3) Create and open a new project

From the Desk:

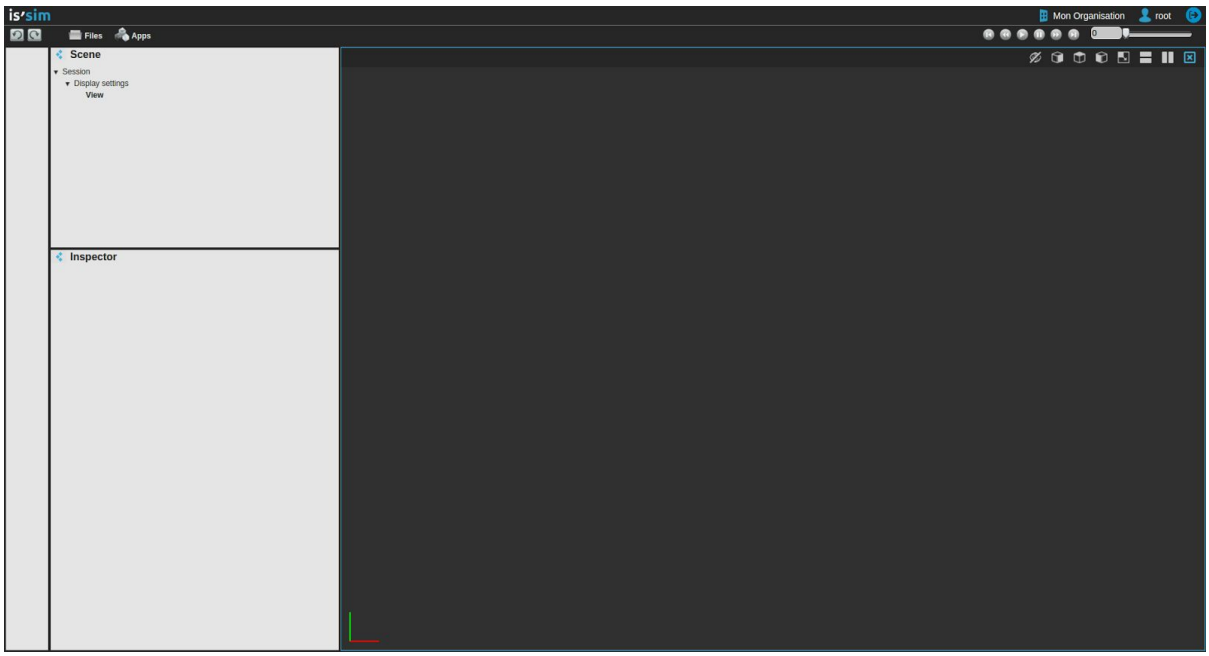
- Click on “Projects”
- Click on “New project”
- Give a name to the project



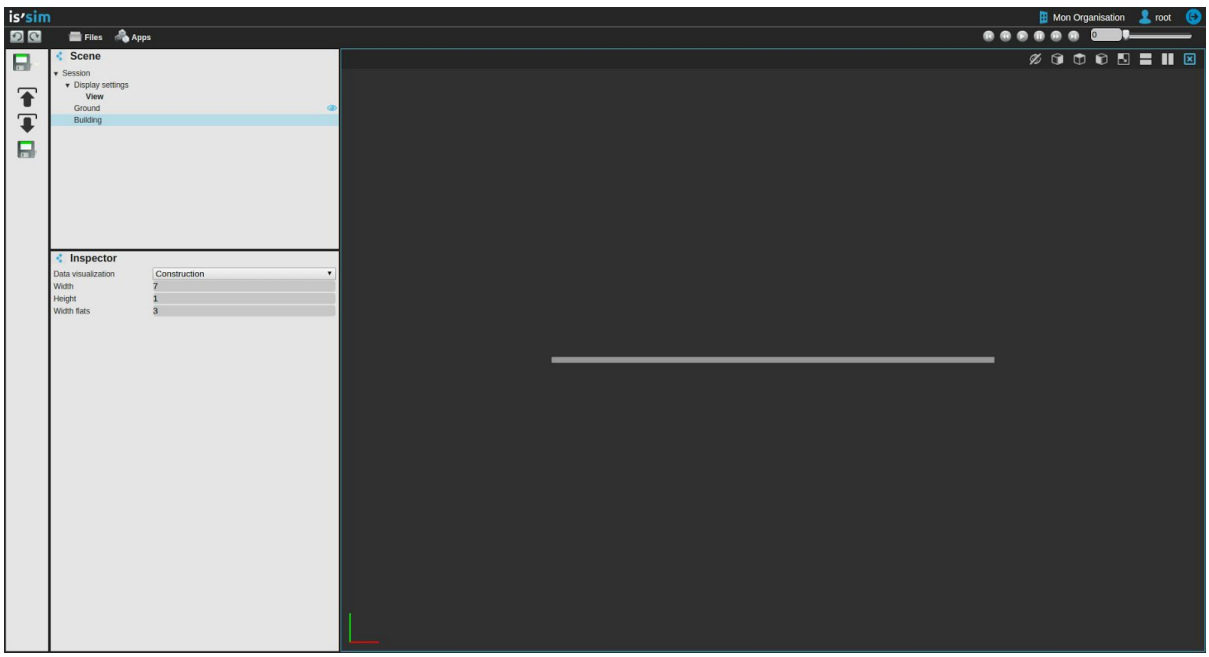
- Double click on the created project

# 4) Attach an application to the project

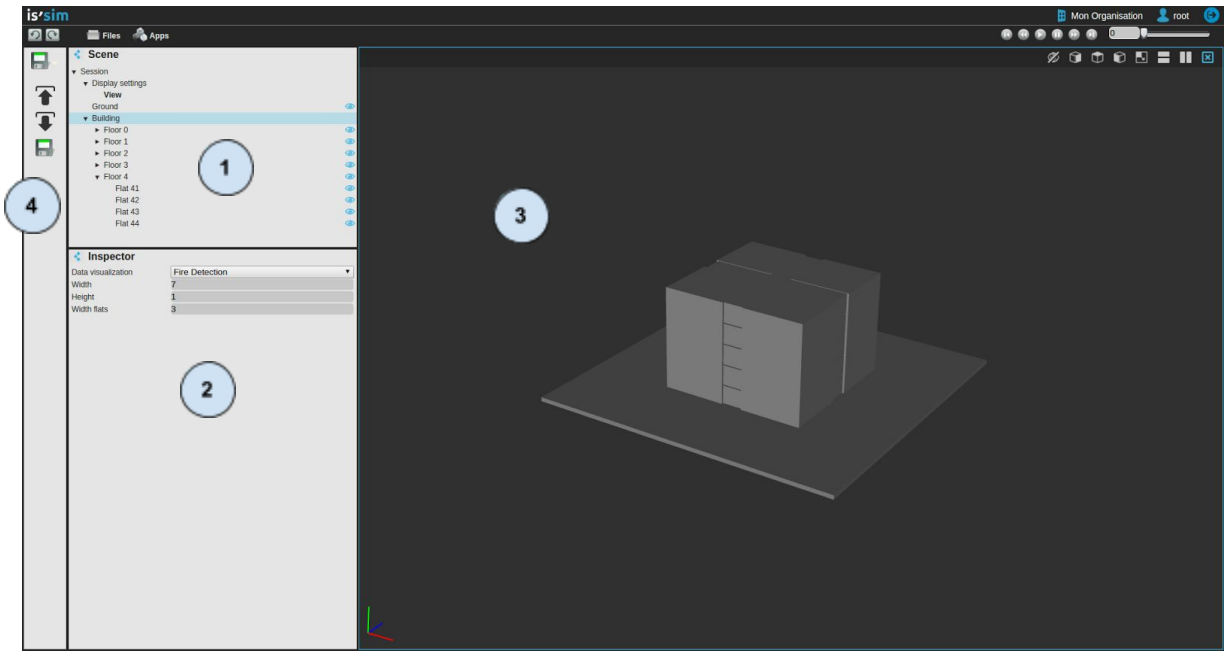
In the Lab:




- Click on “Apps”
- Click on “Intelligent Building”
- Close the popup



# 5) Using the Lab environment




1. Scene panel: contains the data described in a tree view. The root of the tree is the active session, that contains as children an object “Display settings” to generate the 3D view (not used here), and the objects added by the application “Intelligent Building”: “Ground”, “Building” and “eTeam”.
   You can open or close the tree with the arrows, select an object by clicking over it; and show or hide the objects in the 3D panel by clicking on the eye.

2. Inspector panel: contains the editable attributes of the selected item of the tree. The attributes are the data that belongs to the selcted item in form of values, dropdown menu, etc.

3. 3D panel: displays the visible objects of the tree (the ones with the blue eye on the Scene panel). There are buttons at the top of the panel to hide everything, change the view point, re-center the view, divide the view, etc. Moreover, you can zoom with the scroll wheel, rotate the view by holding the left mouse button and move the view by holding down the scroll wheel.

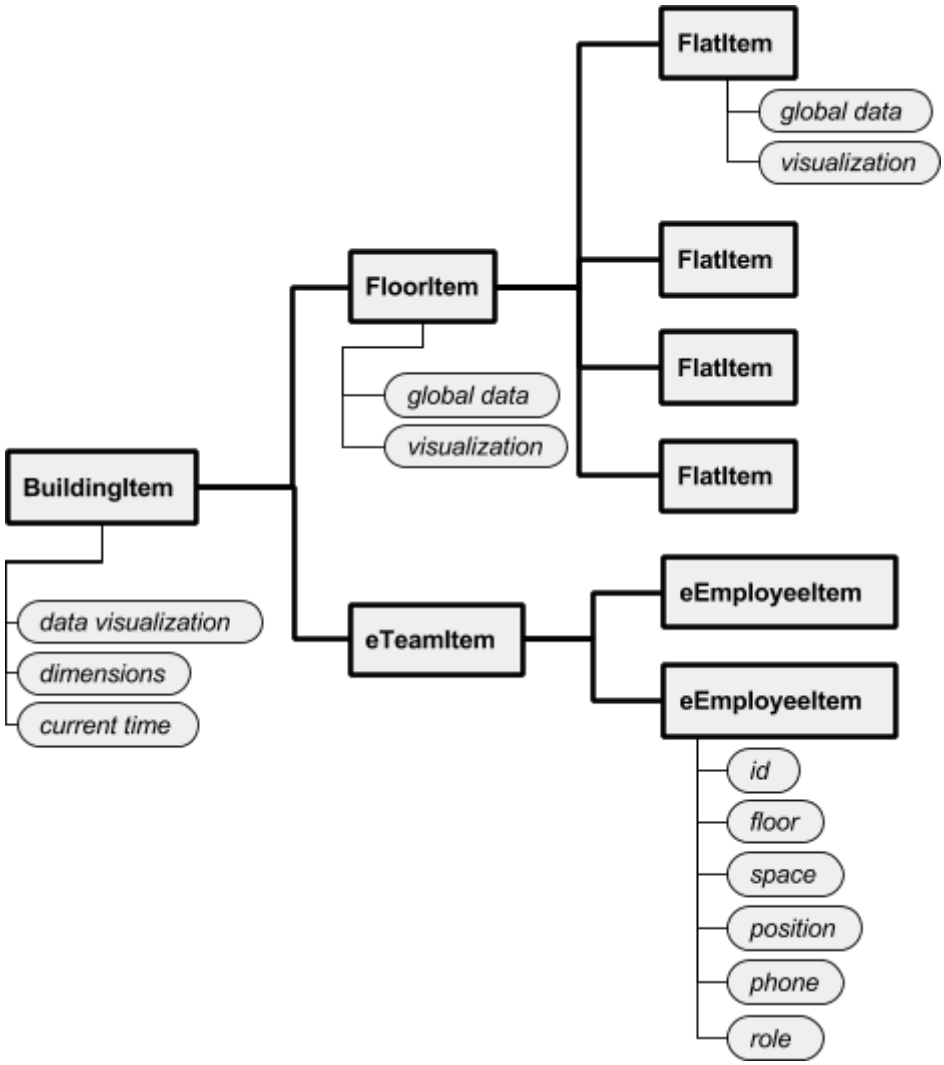
4. Contextual menu: contains buttons associated to the selected item of the tree, to perfom actions to the respective object (add children, save, modify attributes, etc.).

# 6) Application “Intelligent Building”

This application adds three objects to the tree of the Scene panel:

- **Ground**: Object that representates the floor: a smple flat parallelepiped
- **Building**: Object that representates the intelligent building, divided in floors containing each 4 flats, and a zone between them that representates the common spaces (corridors, etc.).
- **eTeam**: Object that representates the group of employees in the building. One can add eEmployees to it.

To describe the tree of data, we can take into account an example of a building of 2 floors, with 4 flats each.




**BuildingItem**: Root of the tree, contains all of the data relative to whole building.

Attributes:

- data visualization: choice of data to show, from these three available options: “Selection” (highlight the floor or flat selected from the tree in the Scene panel), “Construction” (progress of the construction of the building) and “Fire detection” (display the parts of the building in fire).
- dimensions: dimensions of the floors of the building (width, height)

**FloorItem**: Child of BuildingItem, models a flat of the building, and contains the relative data to the floor (common spaces).
Attributes:

- global data: general data relative to the floor: progess of construction, fire detection.
- visualization: display options of the floor (automatically modified in function of the global data, but they can also be modified manually)

**FlatItem**: Child of FloorItem, models one flat of the corresponding floor, and contains the data relative to an unique flat.
Attributes:

- global data: general data relative to a flat: progess of construction, fire detection.
- visualization: display options of the flat (automatically modified in function of the global data, but they can also be modified manually)

**eTeamItem**: object that acts as a container of the eEmployeeItem. It is located at the same level than the BuildingItem object.

**eEmployeeItem**: Child of the object eTeamItem, models an employee in a building and contains its information. The nom of the eEmployeeItem in the Scene panel corresponds to the name of the person.
Attributes:

- id: employee number
- floor: employee email address
- space: employee’s temperature preference
- position
- phone
- role

# 7) Manipulation of BuildingItem

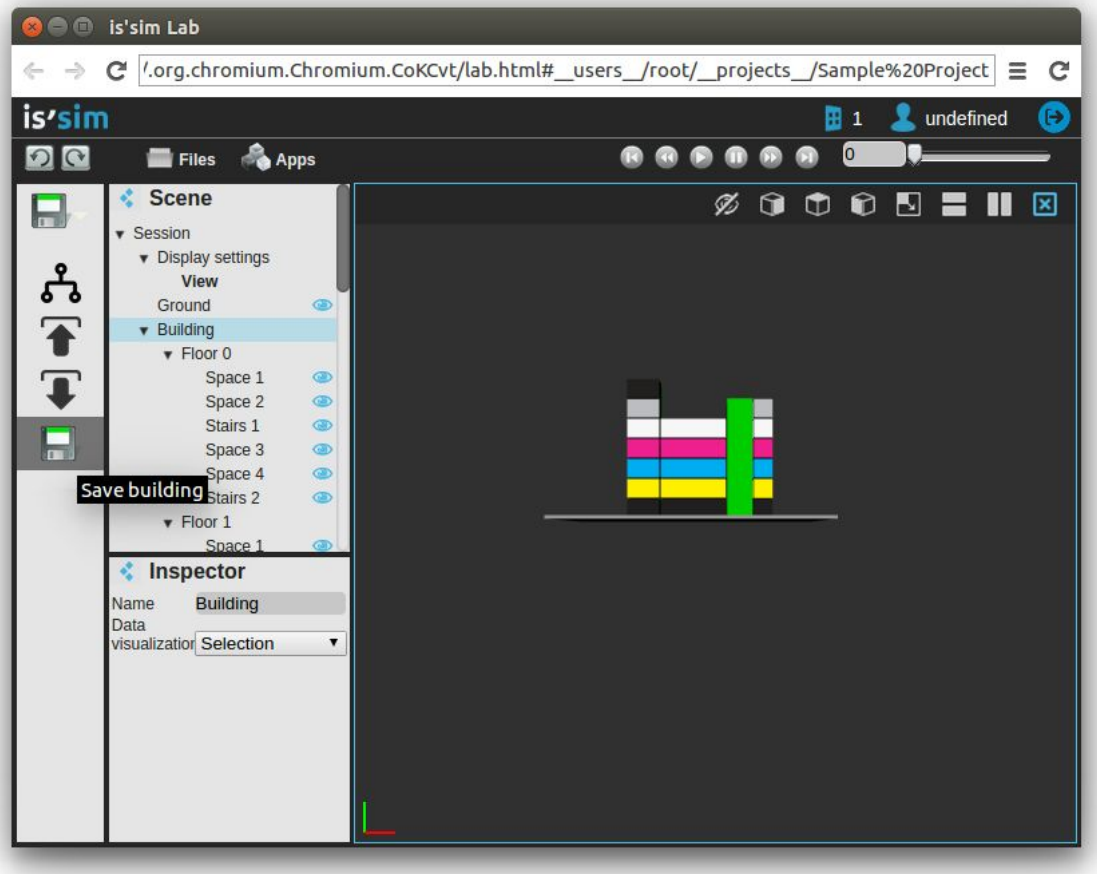
After inserting the BuildingItem in the Scene panel, you can make the following actions:

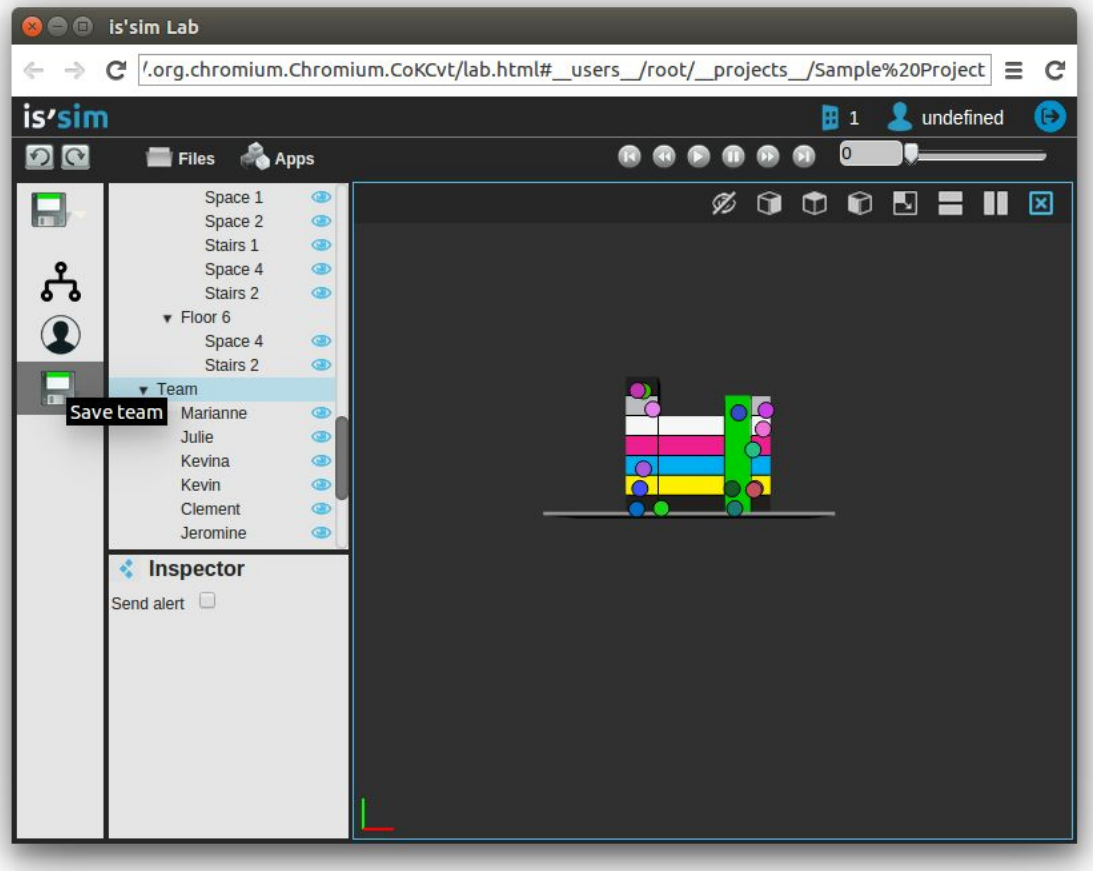
- **Add/remove floors**: select the building, then click over the arrows in the contextual menu.
- **Modify how the building is displayed**: in the attribute “data visualization” of the building, you can choose from the dropdown menu to highlight the selected item, to show the progress of the construction, and to show the presence or not of fire.

- **Modify the dimensions of the building**: modify the values of other attribues of the building. These modification will be taken into account when new floors are added.
- **Modify the data of a floor/flat**: Change the values of the attributes “Construction”, “Fire detection” and “Current data”.
- **Modify manually the display of a floor/flat:** Change the attribute “visualization”: view style (surface, contour) and color.
- **Open the tree of data in a graph view**: select an item in the Scene panel and then click in the button “View graph representation” from the contextual menu.
- **Display the daily data of the floor, flat of building**: Select a flat and click on the button “Display daily charts” or “Display business charts” from the contextual menu.
- **Add employees to the eTeam**: Select the object eTeam, and then click on the button “Add an e-Employee to the team” from the contextual menu.

## 8) Saving the Building and Team

To save the Building, it’s just a matter of clicking on the “Save Building” icon from the contextual menu. The same applies for saving the Team (click on “Save Team” icon).
In the tutorial we explain more deeply how this is done and its importance when creating an IoT solution.




is'sim Lab
/.org.chromium.Chromium.CoKCvt/lab.html#__users__/root/__projects__/Sample%20Project
is'sim
1
undefined
Files
Apps
0
Space 1
Space 2
Stairs 1
Space 4
Stairs 2
Floor 6
Space 4
Stairs 2
Team
Marianne
Julie
Kevina
Kevin
Clement
Jeromine
Save team
Inspector
Send alert