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Area's 5 Technical specification

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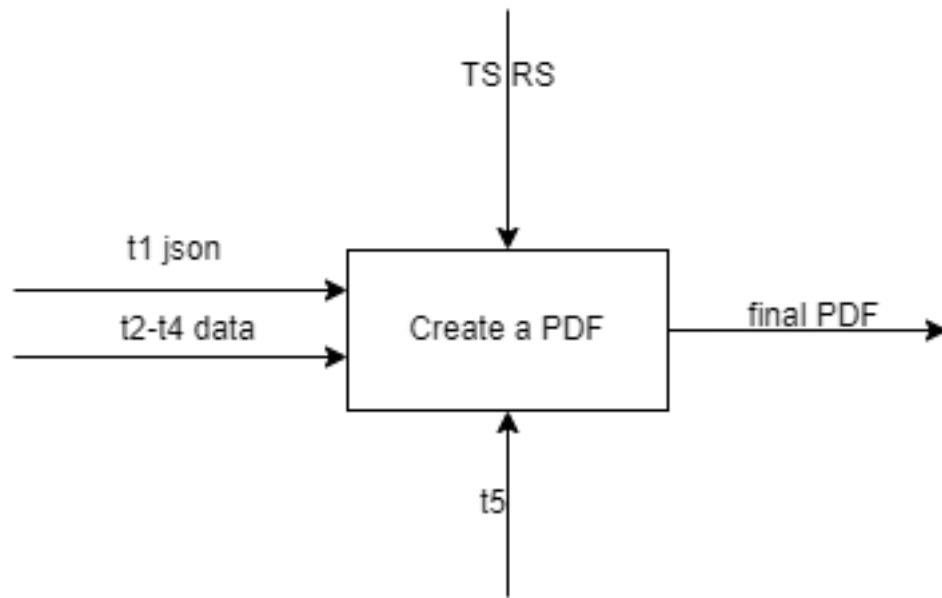Vilnius
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Contents

1 Context diagram

Figure 1. Context diagram.

We will use Technical specification and Requirement specification (TS and RS) to describe our project and use it for guidance We will get json from team 1 and data added to that json from teams 2 - 4 We will finalize the process by creating images and text and adding it to a pdf document.
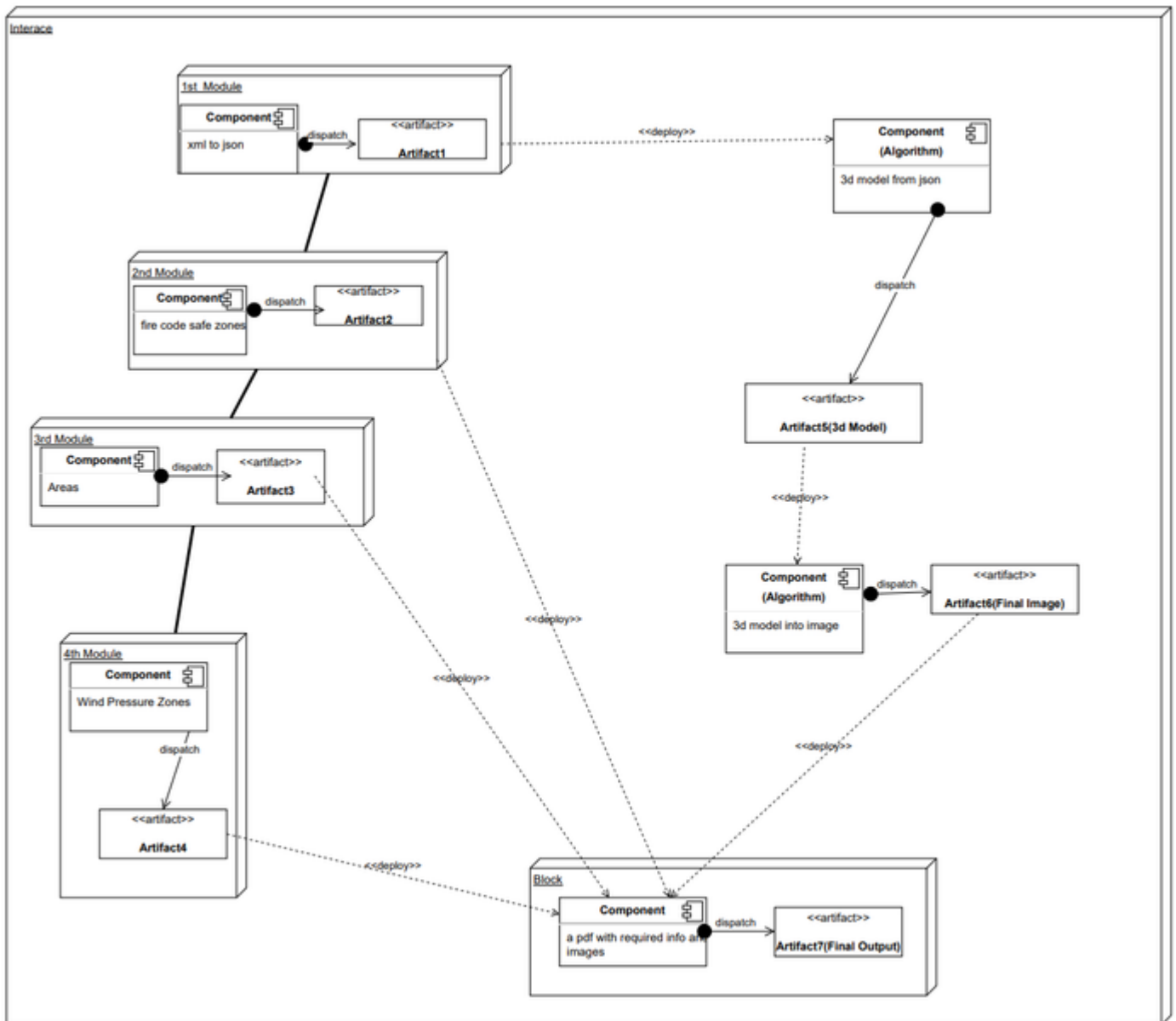
2 UML deployment diagram

Figure 2. UML deployment diagram.

Interface includes conversion of xml to json which we got from team 1, then creating the artifact for fire code safe zones, areas of solar panel and wind pressure areas, then the algorithm for 3d models from json and adding it to pdf file. all of these will be deployed into our system. Finally the interface - to application.
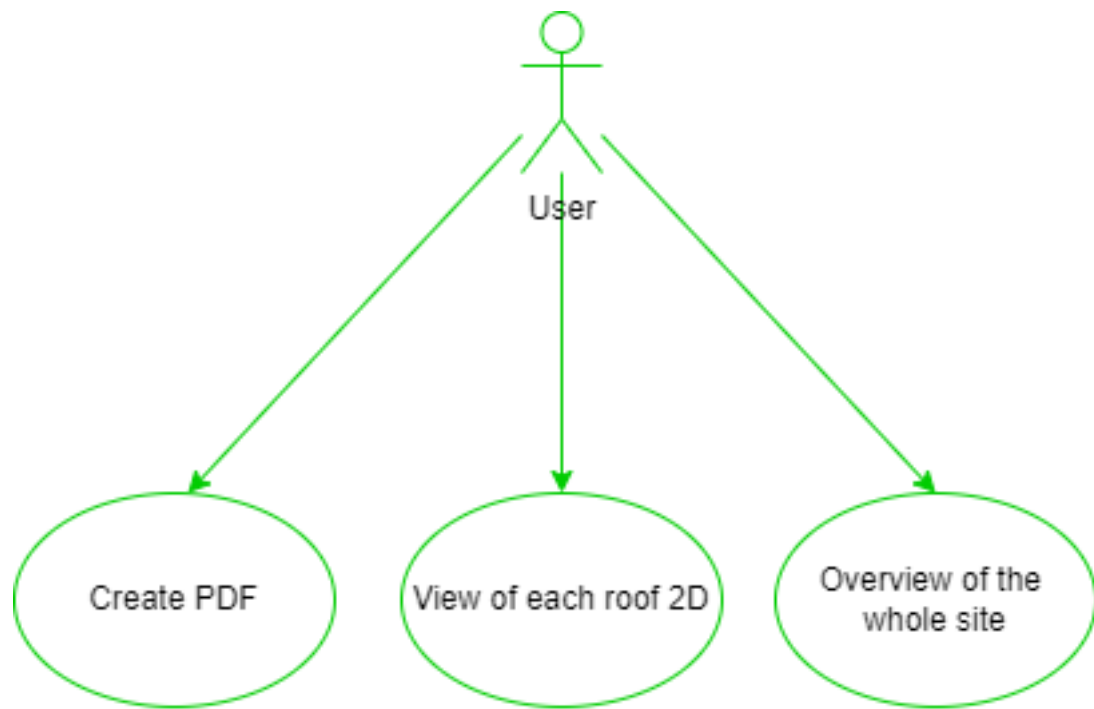
3   Use case diagram

Figure 3. Use case diagram.

In our program user have several options:
1. Create PDF.
2. View of each roof 2D.
3. Overview of the whole site.
Application doesn't need administrator and guest role.
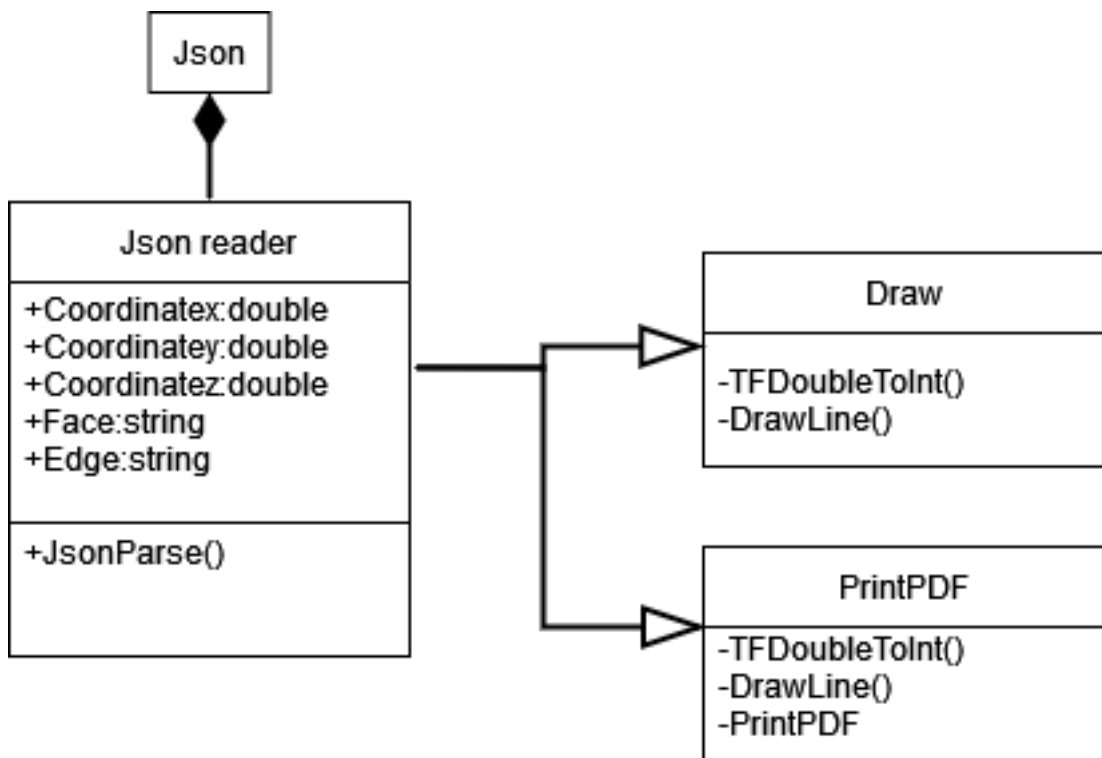
4 Class diagram

Figure 4. Class diagram.

In our diagram we have:

JsonReader - is a class that parses a json and gives data to "Draw" and "PrintPDF" classes.

Draw - is a class that basically draws the lines on a screen.

PrintPDF - is a class that gives out a finish PDF.
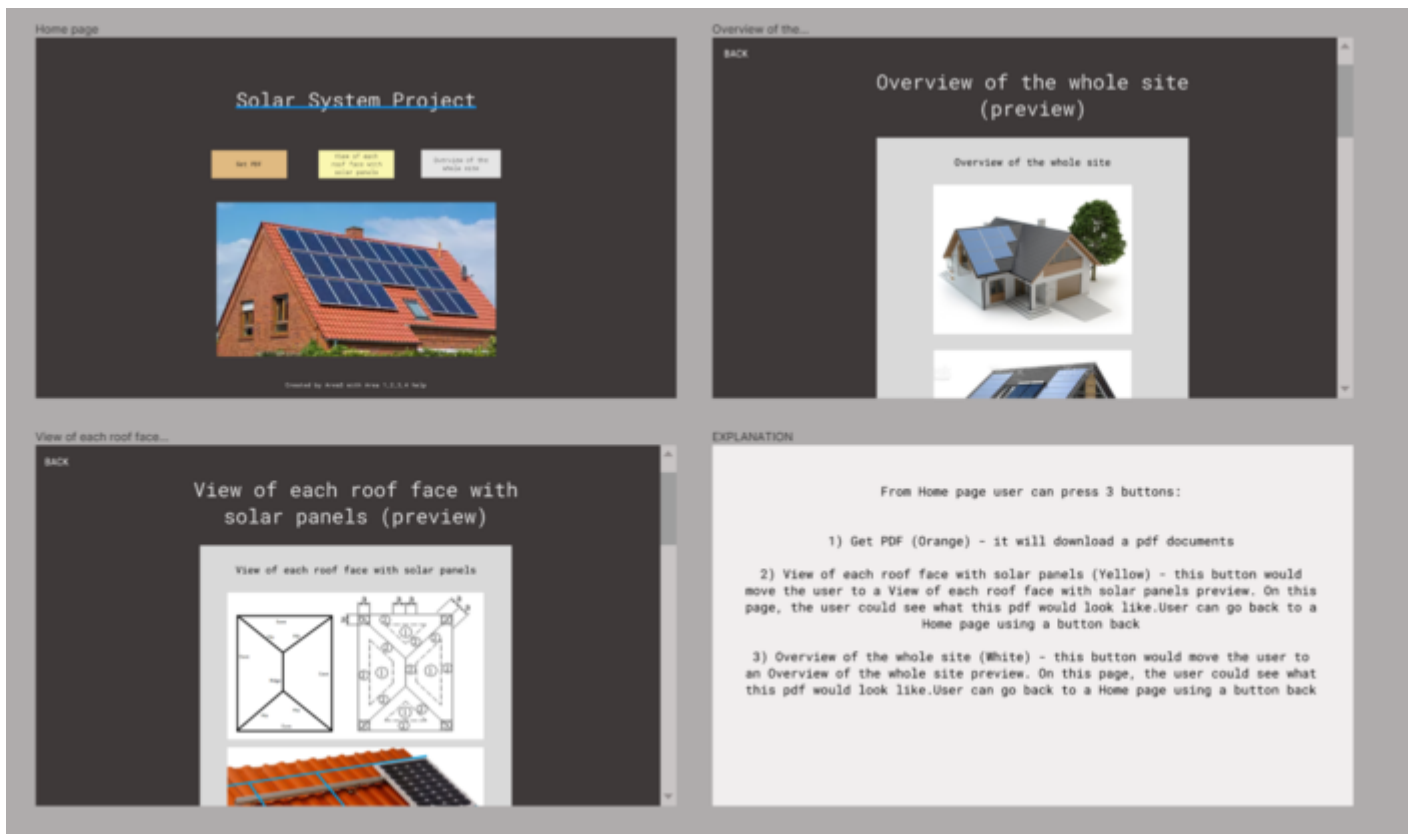
5   UI prototype

Figure 5. UI prototype.

From Home page user can press 3 buttons:

1. **Get PDF (Orange)** - it will download a pdf documents.
2. **View of each roof face with solar panels (Yellow)** - this button would move the user to a View of each roof face with solar panels preview. On this page, the user could see what this pdf would look like.User can go back to a Home page using a button back.
3. **Overview of the whole site (White)** - this button would move the user to an Overview of the whole site preview. On this page, the user could see what this pdf would look like.User can go back to a Home page using a button back.

6 Structural aspects

1. Module that converts file from xml to json (provided by team 1)
2. Module that draws fire code safe zones (provided by team 2)
3. Module that draws the area where solar panels can be placed (provided by team 3)
4. Module that calculates wind pressure zones (provided by team 4)
5. Algorithm that draws 3d model from json
      a. Json reader
      b. Store json info in temporary file
      c. Drawing algorithm
6. Algorithm that converts 3d model into image
      a. Draw image from predetermined points
7. Algorithm that creates a pdf with required info and images using "itextpdf" library
      a. Create pdf
      b. Add Text
      c. Add Images
8. User Interface – desktop application.

7 Dynamic aspects

After a user clicks a button in the desktop application:

1. The first module runs and converts file from xml to json
2. The second module runs draws fire code safe zones
3. The third module runs and draws the area where solar panels can be placed
4. The fourth module runs and calculates wind pressure zones
5. An algorithm runs that draws 3d model from json
6. Algorithm that converts 3d model into image
7. Algorithm that creates a pdf with required info and images.

8 Testing

Snapshot testing
In snapshot testing, the output of a function is saved in a file (the "snapshot"), and when the test runs, it compares this saved output with the output of the function when it is run each time in the test suite.

9 Technologies and tools

- **Java programming language** – Every team agreed that we will use this programming language.
- **Github** – version control
- **Eclipse IDE, IntelliJ IDEA IDE** – We will have to use both of these IDE's since some teams prefer one IDE over the other, but we have to work with everyone's parts of the project.