

# **STRUCTURAL INTEGRITY ASSESSMENT SYSTEM SUMMARY REPORT**

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## **Project Description**

Structural Integrity assessment system is a system that assists engineers who want to understand the structural faults to ensure safety. The sensors are placed in different locations selected by the engineer, which will calculate the information and display tilt, strain, load, temperature and crack formations information. It utilizes sensors and a cloud platform that displays specific information about the position of the sensors and their value records. This data can be subjected to visual data analytics to display graphical distribution to the user, aiding in their understanding of the characteristics of the building site. Users will be able to access places where it is challenging for people to go and work, understand the stability of the structure in an efficient manner without requiring a lot of labor, and reduce hazards associated with structures falling.

## **Requirements:**

The SIAS's major functional requirements compose the implementation of user registration, login, data analysis and risk factor calculation.

User registration is mandatory to ensure that the access is restricted to select individuals. The system must store the user registration data in a database. The system must also save ad-hoc real-time data from the sensors in the database, with restricted access only to the registered users. The system login shall be secure. The system should authenticate credentials provided by the user, before giving access to the user account. The system shall refine the input sensor data to eliminate false results, and provide this data to a data analyst who can input it into a machine learning model and obtain metrics like risk factor and recommendations. These metrics shall be visible to concerned users, who can take actions to improve the structural integrity of the building.

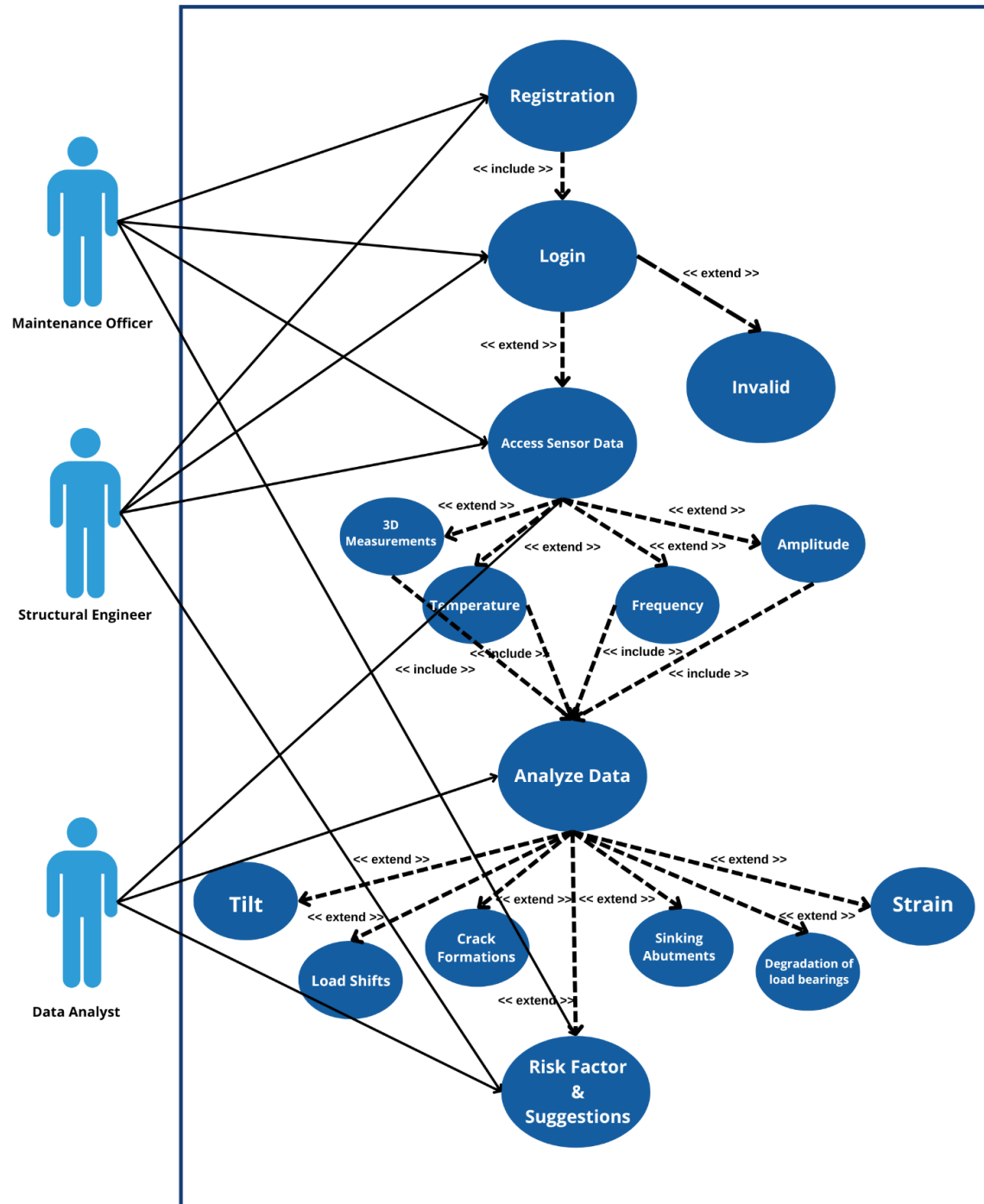


Fig.1 Scenario Diagram