

**NORTHEASTERN UNIVERSITY**

**COLLEGE OF ENGINEERING**

**INFO 6205 – Program Structures and Algorithms**

**Document Control**

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# **Solution Overview**

This solution simulates the spread of SARS – COVID-2. the pathogen behind COVID-19 and provides a medium to study the growth and spread of virus among people.

## Summary

The main purpose of this solution is to provide an interface to study the growth of SARS – COVID -2 and the effect that various remedial measures like contact tracing, vaccination etc. have on its growth rate.

## Requirements

The table below lists the main functional and non-functional requirements towards the solution design.

|  |  |  |
| --- | --- | --- |
| Req No. | Reference Areas | Description |
| REQ001 | Functional | Covid growth data |
| REQ002 | Functional | R – Factor and K – Factor of growth |
| REQ003 | Functional | Remedial Actions |
| REQ004 | Functional | Java GUI to simulate growth |
| REQ005 | Functional | Unit Tests |
| REQ006 | Non – Functional | Report – Conclusions |
| REQ007 | Functional | Comparison with SARS outbreak |

Table 1: Requirements

## System Context

The below diagram shows the system context diagram for the designed solution.

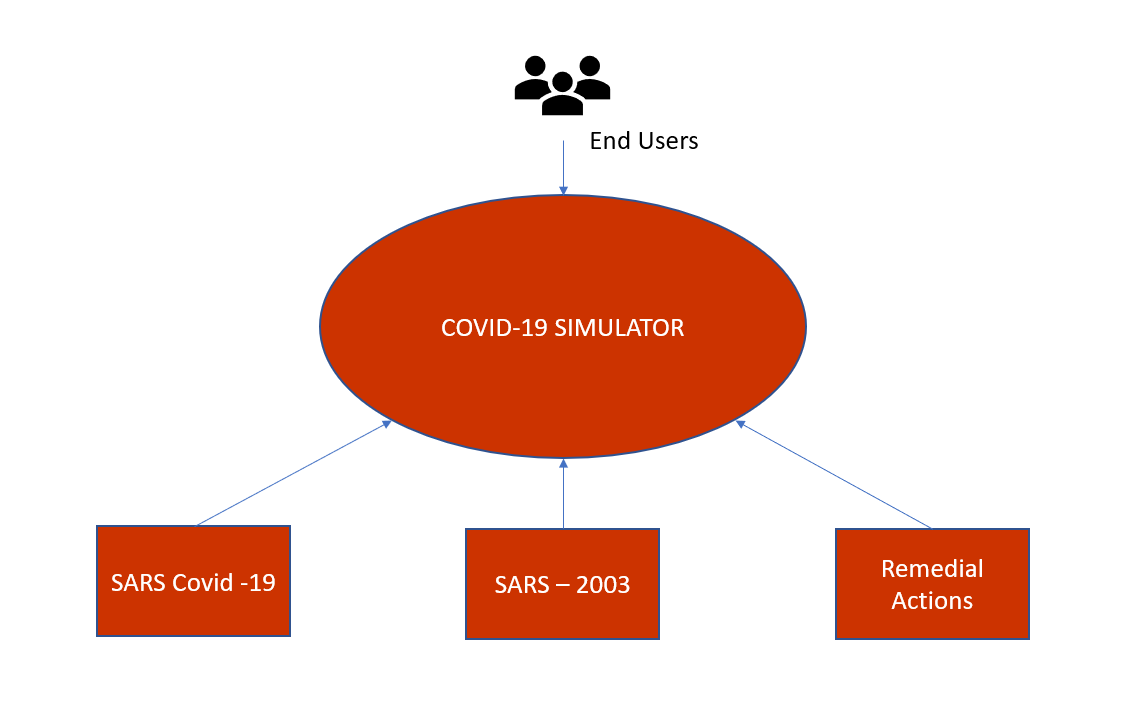


Figure 1: System Context

## Architecture Overview

The below diagram provides an architectural overview of the solution.

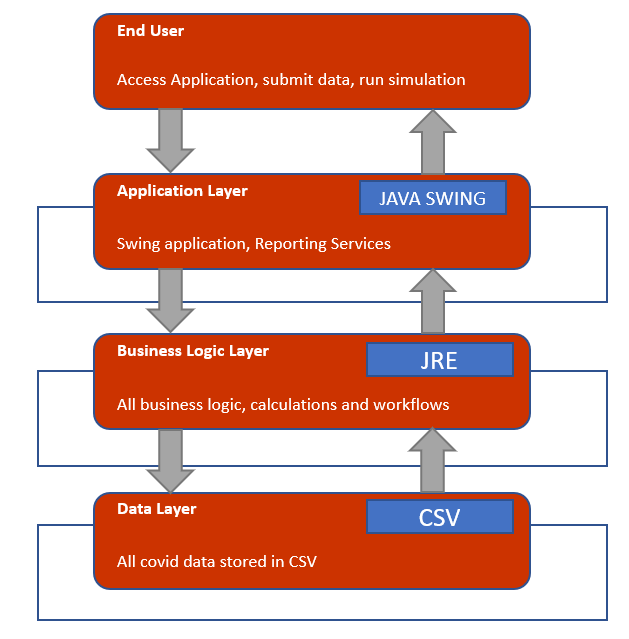


Figure 2: Architecture Overview

# **Infrastructure Design**

This chapter describes the infrastructure including hardware and software that the system must operate in and interact with.

## Infrastructure Constraints

There are no infrastructural constraints linked with the solution.

## Hosting Infrastructure

## End User Devices

## Security and Privacy

## Operational Model

## Communication Rules

# **Application Design**

## Application Constraints and Deviations

## Application Design

## Integrations

# **Findings**

## Conclusion

## Evidence

## Comparison

# **Bill of Materials**

## Licenses

# **Appendix – A – References**

|  |  |
| --- | --- |
| **Titles** | **Description/Link** |
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# **Appendix – B – Glossary**

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| --- | --- |
| **Item** | **Definition** |
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