1. Introduction:

1.1 Purpose of Document:

This document seeks to outline the necessary tasks, responsibilities, and requirements for the 2022-2023 CS Senior Capstone team working with Children's Hospital Colorado (CHCO).

1.2 Background:

Last month, we made contact with the Children's Hospital Colorado to improve upon last year's codebase, and make their trachestomy emergency care simulator. To improve the realism and thoroughness of the training scenarios.

1.3 Project Scope:

Our work is fully focused upon the four simulation scenarios of a tracheostomy emergency outlined by our sponsor. Additionally, to focus on improving the overall quality of the simulation.

1.4 System Purpose:

1.4.1 Users:

- Sponsor: Our client and the one who the product is being made for.
- Trainee: ENT, Nurse, PT or anyone seeking to learn how to care for a child with a tracheostomy.

1.4.2 Responsiblities:

- Improve the overall quality of the simulator through realism and improved functionality.
- Add new training scenarios to work with.

1.4.3 Needs:

Each scenario needs to be approved by our sponsor to prove that these scenarios are realistic enough and to our sponsors liking.

2. Functional Objectives:

2.1 High Priority:

- 2.1.1 Existing scenario 1 needs execute with no loops or unintentional halts in them.

- 2.1.2 Explaination between scenarios failures and how to explain what will happen next.

2.2 Medium Priority:

- 2.2.1 Improve UI for menus and end scenarios appearances.

2.3 Low Priority:

- 2.3.1 Added sound input letting the trainee know about the patient's pulse and oxygenation levels.
- 2.3.2 Functionality should be extended to 3 remaining scenarios.

3. Non-Functional Objectives:

3.1 High Priority:

- 3.1.1 Existing assets need to be visibly improved through material layers or new sprites.
- 3.1.2 Enhance codebase and solve discrepancies between flowchart and functional code base.

3.2 Medium Priority:

- 3.2.1 Research and improve existing test scenarios to have more realistic options.

3.3 Low Priority:

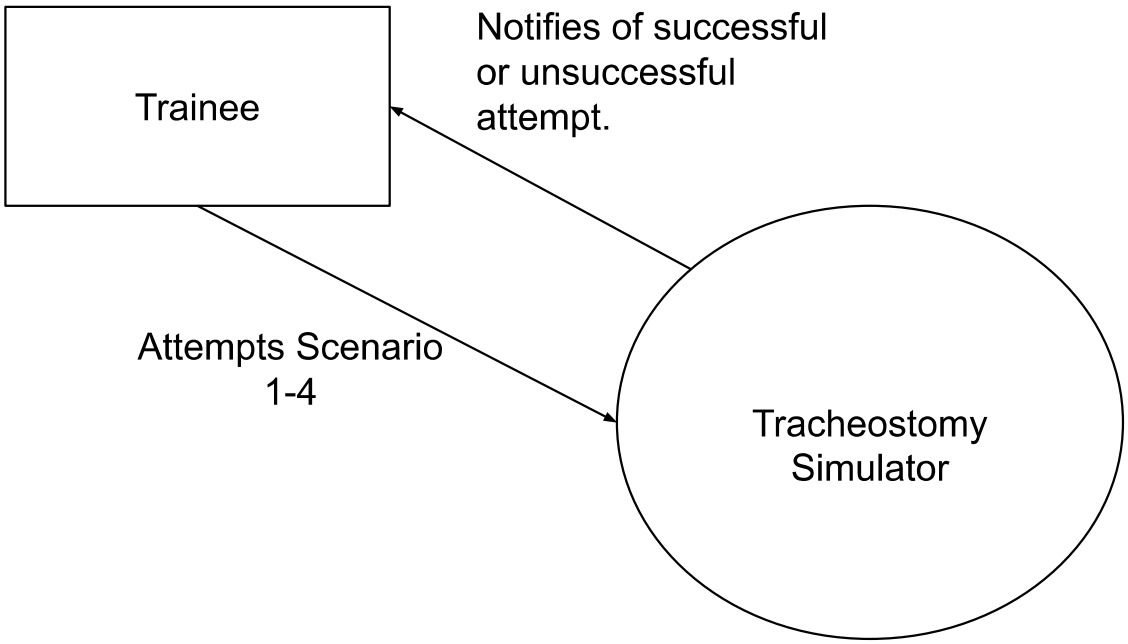
- 3.3.1 Aquire and receive user testing and approval.

4. Context Model

4.1 Goal Statement

The objective of this simulator is to provide accurate and realistic training for medical practitioners.

4.2 Context Diagram

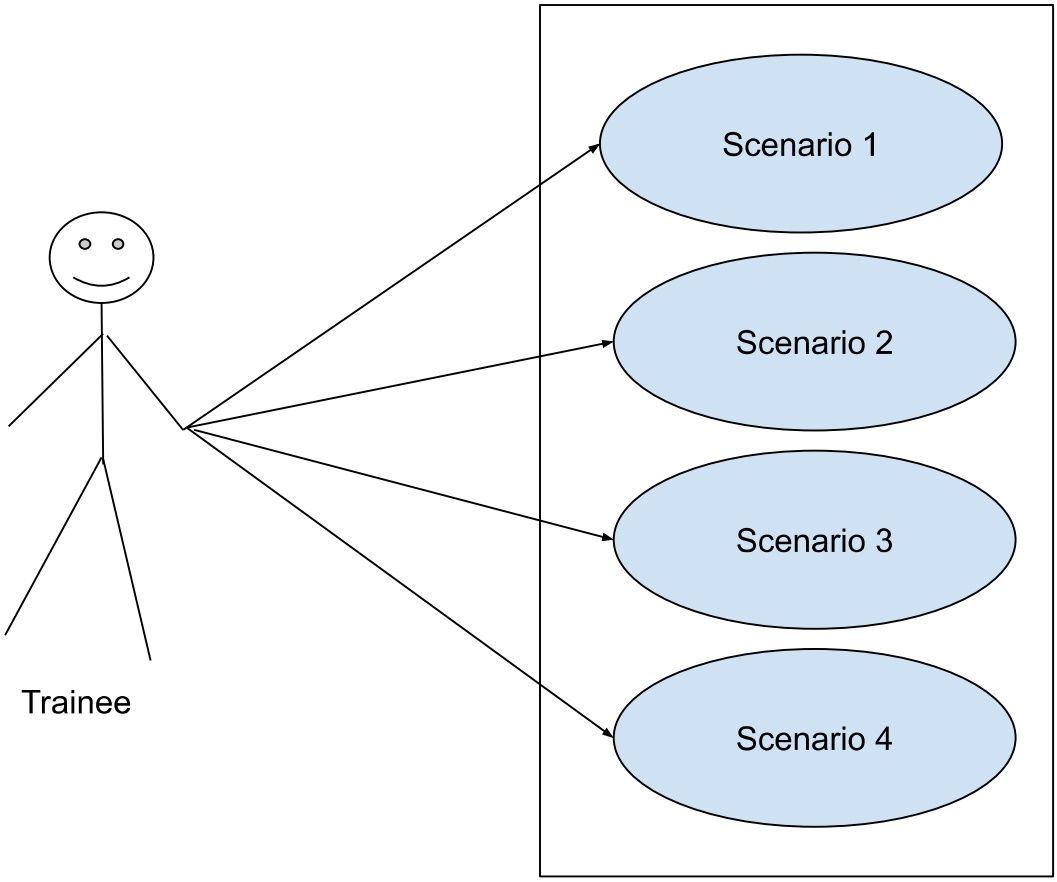


4.3 System Externals

Trainee: ENT, Nurse, PT or anyone seeking to learn how to care for a child with a tracheostomy.

5. The Use Case Model

5.1 Use Case Diagram



5.2 Use Case Descriptions

Use Case Name:	Scenario 1
Summary:	11 year old female patient requires immediate medical assistance or may expire.
Basic Flow:	Admisiters Care to patient as expected.
Alternative Flows:	Scenario fails as patient expires or the trainee is asked to try again.
Extension Points:	NA
Preconditions:	NA
Postconditions:	NA
Business Rules:	Rulings and proper steps is pertinent to just this scenario.

Use Case Name:	Scenario 2
Summary:	11 year old female patient requires immediate medical assistance or may expire. There may be a complications that need to be addressed.
Basic Flow:	Admisiters Care to patient as expected.
Alternative Flows:	Scenario fails as patient expires or the trainee is asked to try again.
Extension Points:	NA
Preconditions:	NA
Postconditions:	NA
Business Rules:	Rulings and proper steps is pertinent to just this scenario.

Use Case Name:	Scenario 3
Summary:	4 year old male patient requires immediate medical assistance or may expire.
Basic Flow:	Admisiters Care to patient as expected.
Alternative Flows:	Scenario fails as patient expires or the trainee is asked to try again.
Extension Points:	NA
Preconditions:	NA
Postconditions:	NA
Business Rules:	Rulings and proper steps is pertinent to just this scenario.

Use Case Name:	Scenario 4
Summary:	4 year old male patient requires immediate medical assistance or may expire. There may be a complication.

Basic Flow:	Admisiters Care to patient as expected.
Alternative Flows:	Scenario fails as patient expires or the trainee is asked to try again.
Extension Points:	NA
Preconditions:	NA
Postconditions:	NA
Business Rules:	Rulings and proper steps is pertinent to just this scenario.