Periodic Table

Concept

Develop an HTC Vive VR application for exploring and learning about the periodic table of elements.

Preliminary Prototype Goals

1. Develop an explorable periodic table of elements.
    a. High-quality visual periodic table of elements.
    b. Ability to select at least 10 elements.
    c. Display of detailed symbol and name when an element is selected.
    d. Display of high-fidelity atomic structure when an element is selected.
    e. Ability to unselect or dismiss a selected element.

2. Develop an interface for manipulating the atomic structure of a selected element.
    a. Ability to add and remove electrons from atomic structure.
    b. Ability to add and remove neutrons from atomic structure.
    c. Ability to add and remove protons from atomic structure.
    d. Automatic update of detailed symbol and name when protons are added/removed.
    e. Automatic update of element selected on the visual periodic table.

Final Prototype Goal

1. Develop an interface for quizzing the user's knowledge of the periodic table.
    a. Empty atomic structure with available electrons, neutrons, and protons.
    b. Randomly presented element quiz prompts with accompanying audio.
    c. Visual and audio feedback when the structure is stable and correct.
    d. Ability to quit and have the system solve the atomic structure.
    e. Final feedback with information on number of correct solutions and total time.

Stretch Prototype Goal

1. Create a high-quality video that showcases all the features of the application from the user's perspective and includes a picture-in-picture view of the user using the HTC Vive.