# Introduction

Rationale

Create a website with layout similar to the one shown in the video. Main functionality of the website is to display decay information about nuclides.

Proposed Design

The solution will have a table that will display nuclide information and a button to add to the table. When this button is clicked, a form slides in where the nuclide information is entered. When the form is submitted, the table is updated.

System Architecture

The interaction of components is shown below in the diagram
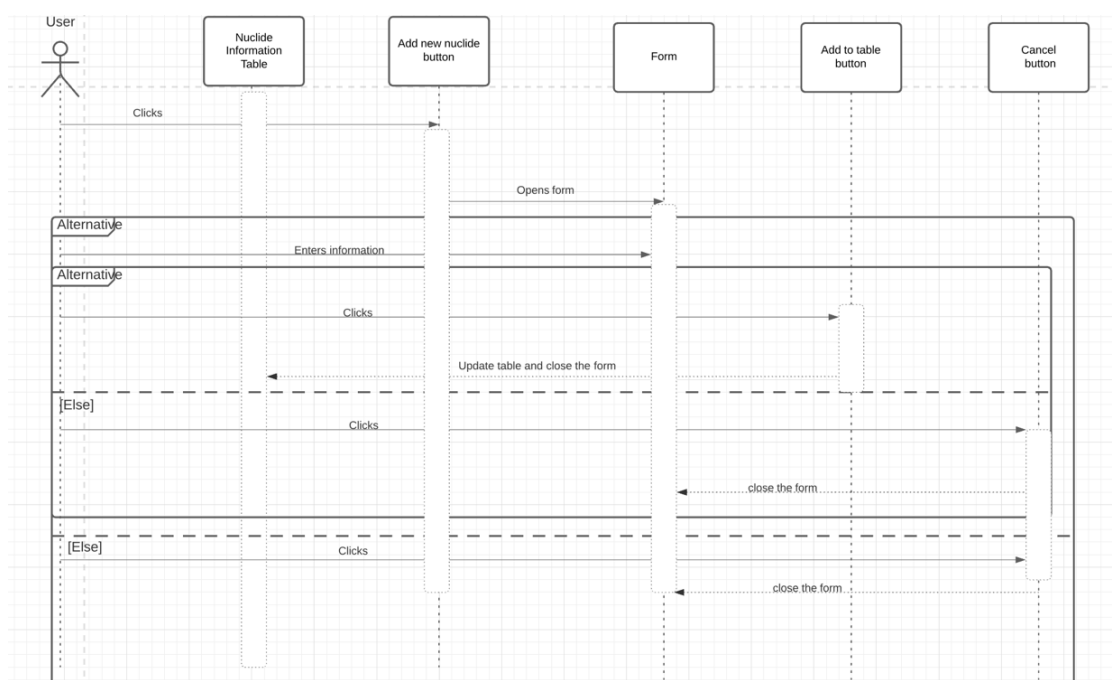
Business Logic

Binary search algorithm: The lower bound would be supplied as a parameter. The upper bound is 1 million. The midpoint is calculated by adding the bounds and dividing by two. The activity is calculated using the midpoint as the number of days. If the activity is less than one, the upper bound is reduced to less than the midpoint and the number of days is set equal to the midpoint to find the minimum possible number of days for activity to become less than one. If the activity is more than one, the lower bound is increased to more than the midpoint. This is repeated until the lower bound becomes larger than the upper bound. The number of days rounded up to the nearest whole number is returned.