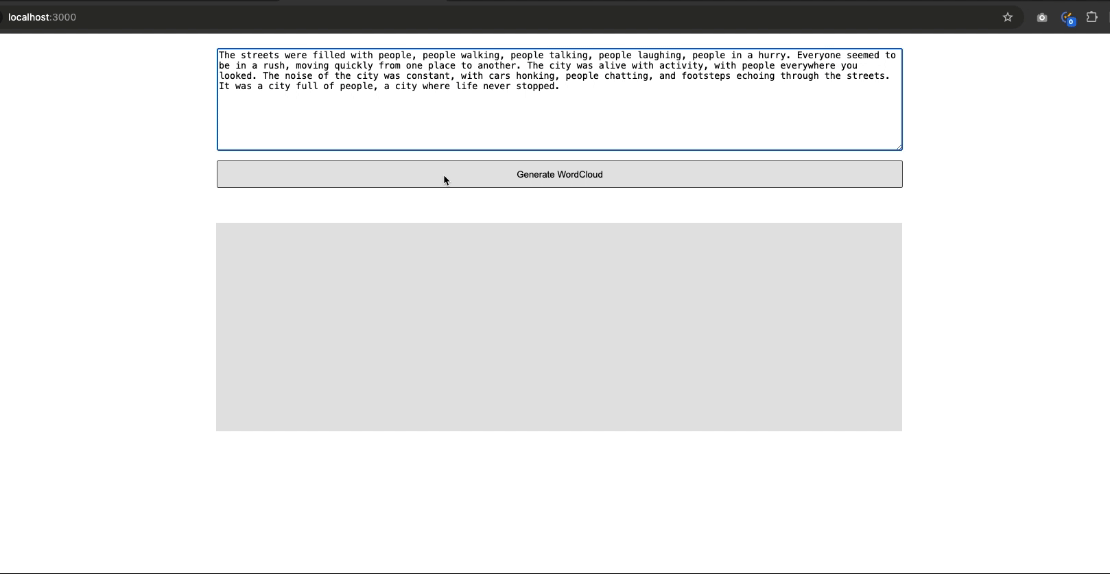
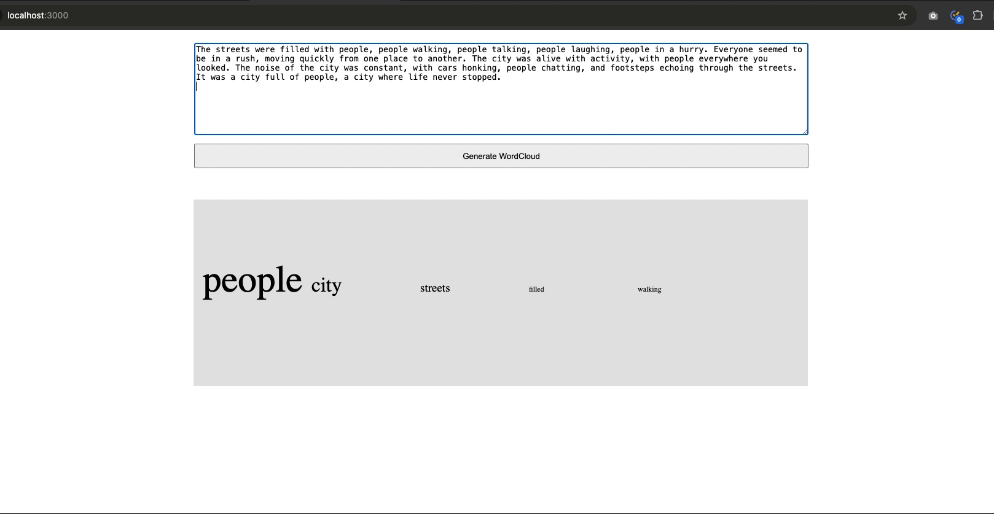
A word cloud is a type of visualization that displays the frequency of words in a given text. More frequent words appear larger, while less common words are shown smaller. This method is commonly used in data analysis to quickly identify key themes or topics in large text datasets, offering an intuitive way to summarize and present information. In this assignment, you will create a dynamic word cloud using React and D3.js to visualize the frequency of words from user-inputted text, helping users grasp the main themes.

**User Interface and Animation Description:** The interface will feature two main components: a textarea for user input and a button labeled "Generate WordCloud." When the button is clicked, the app will calculate word frequencies and update the component's state with the new data. The word cloud will be automatically generated or updated to display the top 5 most frequent words whenever there is a change in the textarea. Words will appear larger based on their frequency, with less frequent words being smaller. You’ll use D3's scaleLinear() to scale both the word positions and their font sizes. The size of the words will visually reflect their frequency in the text. Animation will be applied to the font size when words are appended to the svg. For updated texts, animation will affect both font size and word position to reflect changes.



For example, if you enter the following text in the textarea, you will see the animation above, where only the font size is animated. You are required to implement the same animation in your program.

“The streets were filled with people, people walking, people talking, people laughing, people in a hurry. Everyone seemed to be in a rush, moving quickly from one place to another. The city was alive with activity, with people everywhere you looked. The noise of the city was constant, with cars honking, people chatting, and footsteps echoing through the streets. It was a city full of people, a city where life never stopped.”



Now, if you update the textarea with the following text, you will see the animation above, where both the position and text size are updated with animation. You are also required to implement the same animation in your program.

“The streets stretched endlessly, weaving through the heart of the city, connecting neighborhoods in a seamless flow. In every corner of the city, there was something happening, whether it was the vibrant market stalls or the quiet parks hidden amidst the urban landscape. The city skyline towered above, a reminder of the ambition and drive that defined the city. As night fell, the lights of the city illuminated the streets, casting a glow that reminded everyone just how alive the city truly was.”

[This folder](https://drive.google.com/drive/folders/1ITWPT9yp220-dhVgBhtoi1uYI5eNid19?usp=sharing) contains the starter code. Write your code in the App.js file, and then host your app on GitHub.

**Note:** You will only use D3, HTML and CSS to complete this assignment.

**Submission**: Submit the following on Canvas:

* The App.js component
* A link to your deployed webpage on GitHub Pages.