Randomic Rybosome

Server side

Implement a Web application that generates every 1 second a random nucleotide, adenine (A), thymine (T), cytosine (C), and guanine (G), thus generating a random DNA sequence.

Once a stop codon is being generated, the application stops streaming nucleotides to the connected user.

A stop codon is a nucleotide triplet (TAA, TAG, TGA), signaling the end of the protein synthesis during translation.

Client side

Everytime a user connects to the application he/she shall be able to see in **real time** the sequence of nucleotides (i.e. a DNA sequence) streaming from the server. The user shall also be notified once a stop codon is been identified.

FAQ

Do I need to store any data?

- No. A different sequence can be generated at runtime for each request and there's no need to implement any login/signup mechanism.

What kind of technologies can I use for the backend?

- The backend must be implemented in Python. You are welcomed to use a Python framework of your choice: Django, Flask or FastAPI.

And what about the frontend?

- Plain HTML and vanilla javascript is enough. If you wish you may use a CSS framework (Bootstrap, Tailwind etc..) to enrich the UI.

What do you value the most?

- We will value the most the scalability and readability of your code.