Computational Pipeline for Full Plasmid Validation

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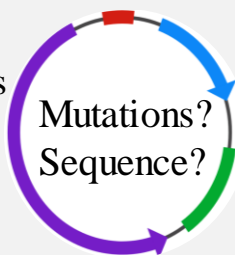
Need

No existing software that assembles raw reads and visualize the plasmid and its mutations
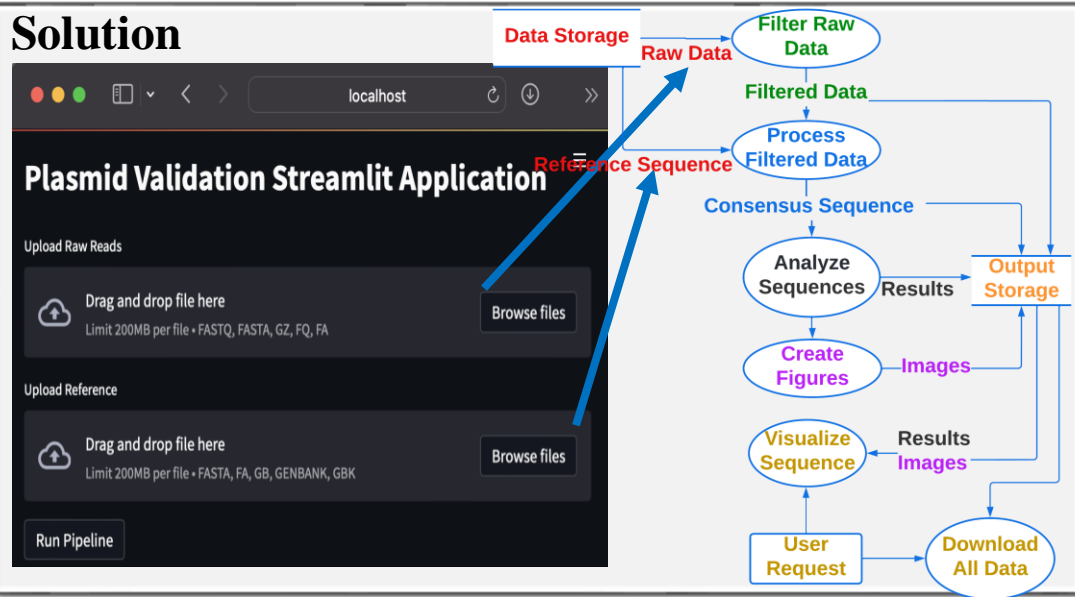
Objective

Develop an app that **analyzes plasmid sequences** and **visualizes mutations**

Requirements

- Accurate detection of features and mutations with a resolution of 1 base pair
- Visualization of results

Solution

Results

Highly accurate and fully functional web application

Original Seq.	Changed Seq.	Mutation Shown
CGGCAA	GGTTCA	GGTTC ➤ CGGCA
TGCCCATT CGAC	CCGAGAACT TAA	10 mutations

Element	Visual
Plasmid Map	Yes
Features List	Yes
INDEL	Yes

Future

Impact – Simplify plasmid validation by encapsulating all the steps into one application

Revisions – Include de novo assembly and a suite of synthetic biology computational tools