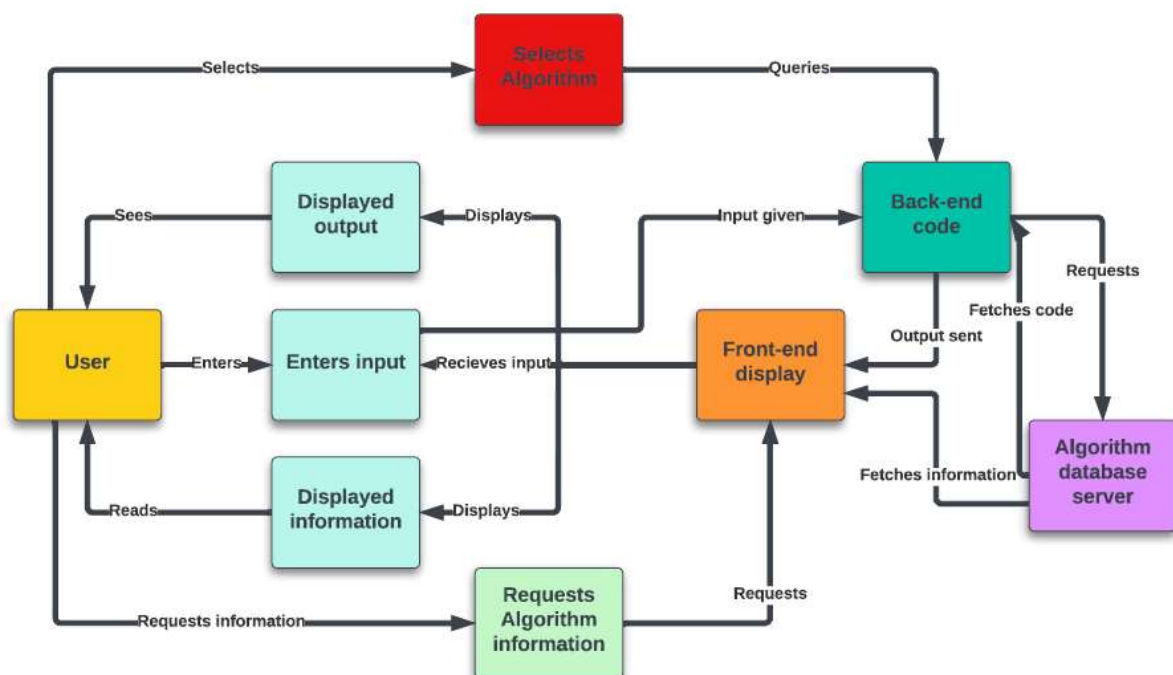


SE Project Week 5 – Algorithm Visualizer

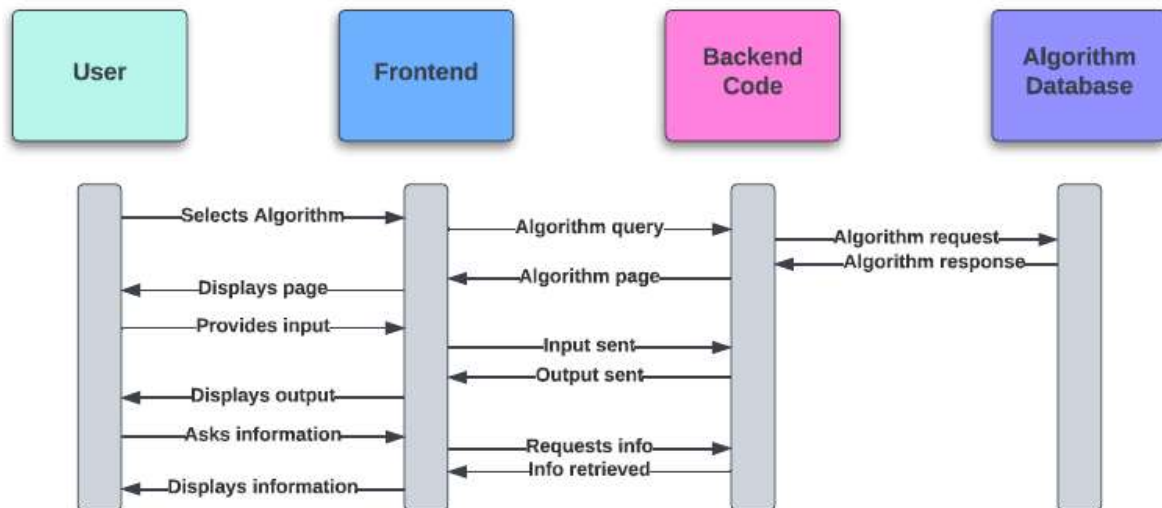
Architecture and Design Document

Architecture:

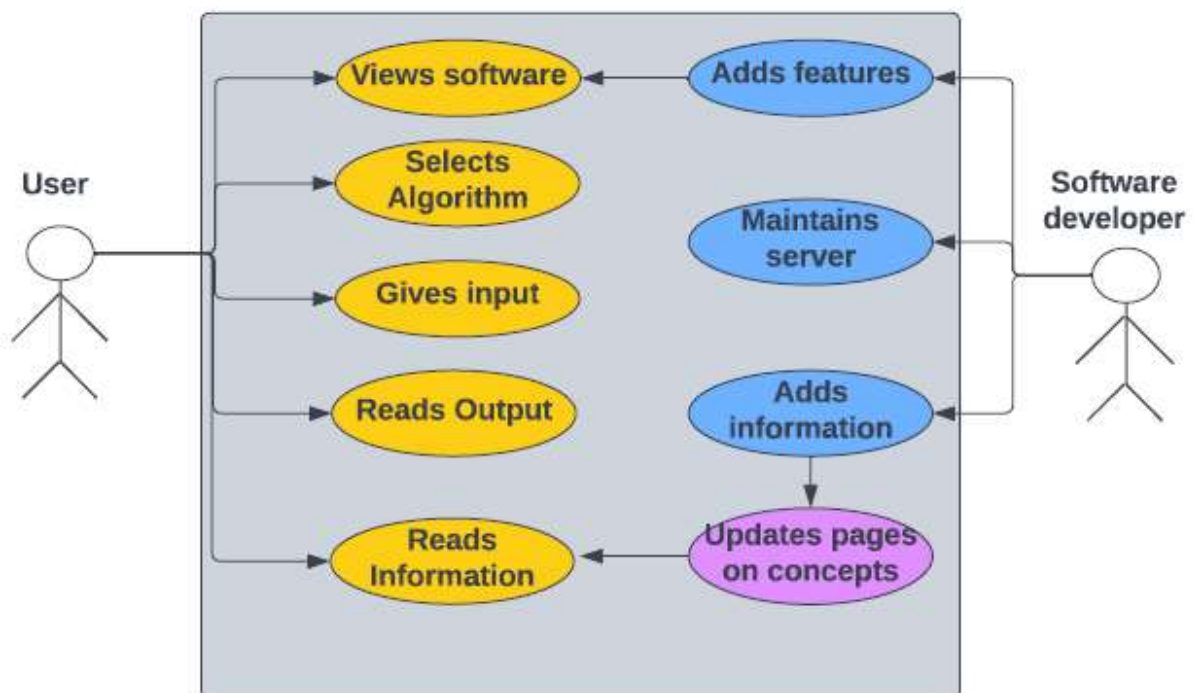
Architecture Diagram



Sequence UML Diagram



Use Case Diagram



Quality Attributes for Algorithm Visualizer

1. Reliability:

Measure if the product is reliable enough to sustain in any condition. Should give the correct results consistently.

2.Maintainability:

For development, it should be easy to add code to the existing system, should be easy to upgrade for new features and new technologies from time to time.

3.Usability

This can be measured in terms of ease of use. The application should be user-friendly. It should be easy to learn.

4.Correctness

The application should be correct in terms of its functionality, calculations used internally and the navigation should be correct.

5.Efficiency

If the system is using all the available resources, then the user will get degraded performance failing the system for efficiency. If the system is not efficient, then it cannot be used in real-time applications.

Design

Software Design Principles

1. Divide and Conquer

It means breaking a problem into smaller bite-sized subproblems. The idea behind this is that those problems are hard to solve due to their complexity. To make it easier, you can divide these problems into smaller problems.

2. Low Coupling

In simple terms, coupling occurs when packages, modules, classes, or files are very interdependent. If one package has some changes to it or breaks, the whole system could be compromised because some of its parts depend on the package that has malfunctioned. So it has to be reduced

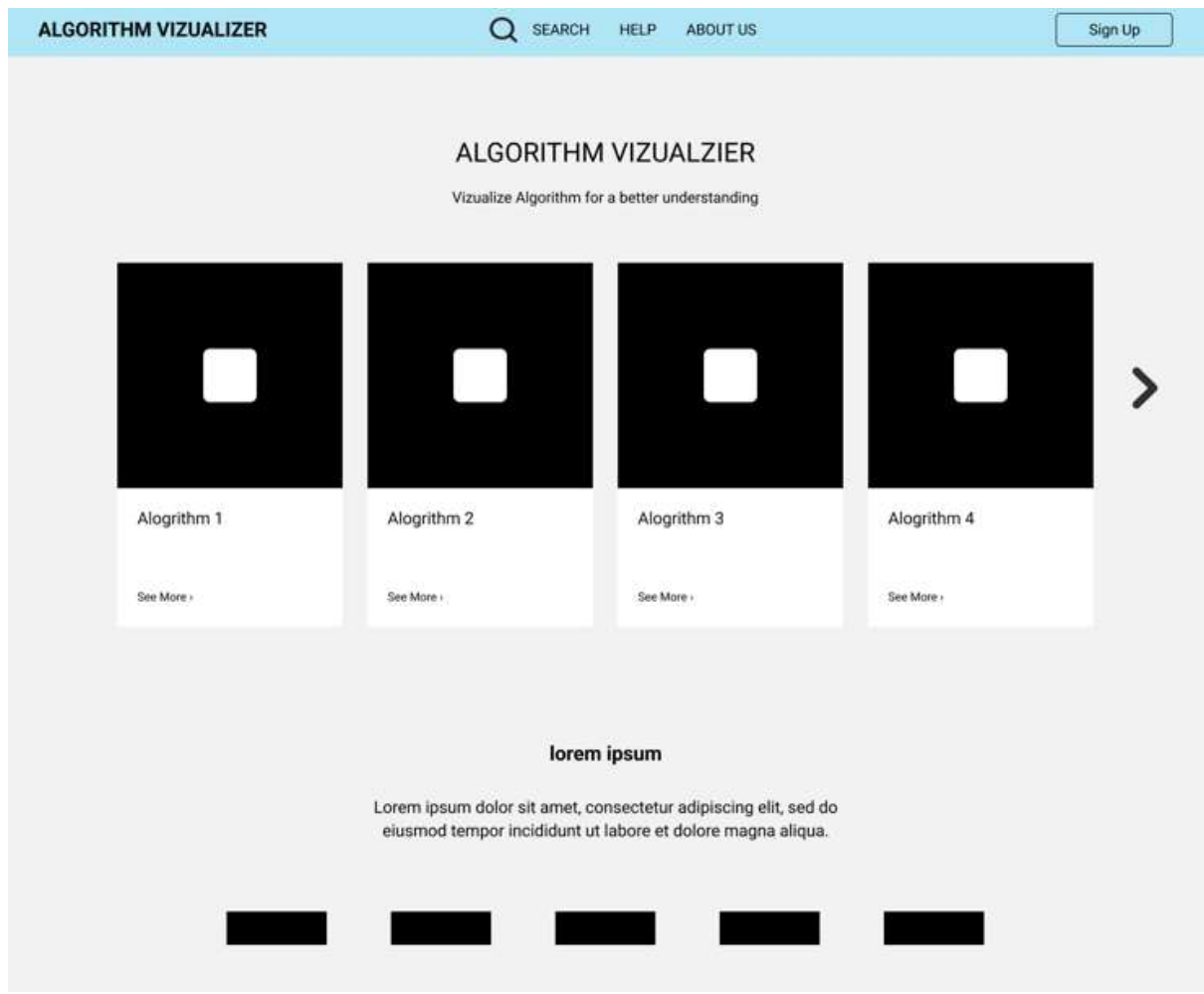
3. High Cohesion

Cohesion brings about the organization of your code, and it will make it much easier to find things, thus simplifying the system. Everything will make more sense.

4. Abstraction

Something is more abstract if it is a simplified version of something technical. Useful because you would want the end-user to see only relevant components.

Design Demo – Example model





ALGORITHM -1

Refresh

Speed



Total Numbers



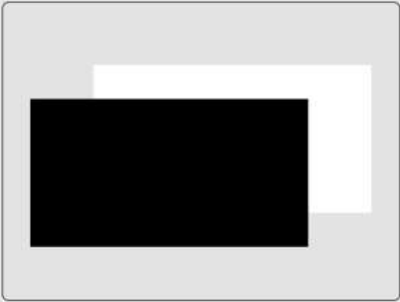
Custom Input

Vizualize

Details

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- Time complexity
- Space complexity
- Applications



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