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Abstract

Giving everyone an equal opportunity and chance at life.

BLINDR

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## INTRODUCTION (Concept)

Welcome to Blindr, a Software Solution for Blind people who want to use an online calculator. Blindr’s main challenge is connecting people who are blind to a calculator that can serve them right. Blindr User Interface design is simple but visually intentional. It has a completely black background that contrasts with it’s white, almost completely white color. This helps people with low vision see the calculator up to some extent because of the two high contrast colors. It also has a hover effect for the buttons so that the user can be able to tell that they are on a button waiting for a click. The equal button is also differentiated in terms of color from the rest of the other buttons to make it distinctive and rememberable for the user’s experience. As for the people who are completely blind, Blindr has a voice feature that get triggered when each distinct button is pressed. Say the button one is pressed, an audio pronouncing one will be played in the background to alert the user that they have clicked to enter the number one as an input in the calculator that will be used for calculations. The same applies for number two, three and the rest of the buttons in the calculator.

## SYSTEM ARCHITECTURE

This is the conceptual model that defines the structure, behavior, and views of a system. The figure below is Blindr’s System architecture. It comprises of two sections, the Frontend part containing the look of the Calculator and how it responds visually to user interaction and the Backend part that contains the logic part that does all the numeric calculations when given an input and gives back a result and the hosting/storing part that is basically GitHub pages enabling a user to access the calculator online.

Diagram

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System Architecture

### Scalability

Since Blindr is hosted on GitHub pages, its usability is limited to the values provided by GitHub These limits include:

* Job execution time of up to six hours while in a workflow. Past that, the job gets terminated and fails to complete.
* Workflow runtime of up to 35 days which includes execution duration and time spent on waiting and approval. Past that, the workflow run is cancelled.
* API requests of up to 1000 times in an hour across all actions within a repository. Past that, additional API calls will fail, which might cause jobs to fail.
* The concurrent job limit is 40 for total concurrent jobs and 5 maximum concurrent macOS jobs.
* A limit of 256 jobs per workflow run for a job matrix.
* A limit of 500 workflow runs to be queued in a 10 second interval per repository. Past this, the workflow run is terminated and fails to complete.

## USE CASE DIAGRAM

This shows how the user (actor) interacts with the system and all the process within. The user interacts with the use case that gets arithmetic input from the user. That use case then includes the functionality of two other use cases with the first one reading out keyed in values as they are being keyed in by the user and the second one that performs arithmetic operations and gives back the results of those operations.

Diagram

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Use Case Diagram