# Technical Design Doc: Phantom Take Home Assessment

## Requirements

* User can add/edit/remove links
* Site displays a list of links
* List of links are paginated (20 items at a time)
* User can switch between pages
* Show results page on successful link addition
* Links are persisted on reload
* User can only add valid and reachable links

## Design Decisions

### React

The site will be built in React for flexibility and ease of development.

### Persisting Data across page reload

After consideration it has been decided that browser Local storage will be used to persist the list of links across the site. Local storage is easily written to/accessible on the browser at runtime, but is also easily read by a client, meaning sensitive information should not be stored there. As all data in the list is not sensitive, local storage is a viable solution.

### State Management

React has many state management solutions; component state, redux, Context API, etc. The most applicable to this solution is component state, as the complexity of requirements is low.

### Deployment

The solution will be deployed on *Vercel*, as it is front-end only, supports continuous deployment integration with Git repositories, and is easy and reliable.

### URL Validation

To ensure a submitted URL is valid, the string will be compared against a Regular Expression to check that it is in a valid format. To check whether the URL is reachable, a HTTP request will be sent to the URL. If the request returns a valid response code, it is fair to assume that the URL is reachable. If the request returns an error response code, then it is likely that the URL is unreachable.

A HEAD request will be initially sent, as this ignores any response body decreasing response time compared to other request methods such as GET. If however this request fails, a fallback GET request will be sent.

NOTE: after exploration in development, it was found that only a HEAD request was necessary.

A possible issue may be CORS (Cross-Origin Resource Sharing) errors. If these arise we will assume the URL is unreachable.

## Routes

“/” - list at page 1

“/page/:pageNumber” – list at page number

“/link-saved:linkID” – success page

## Component Tree

App

- Header

- Overview

- Link List

- Add Link Form

- Bookmark Link

- Page Switcher

- Results Page

- Success Animation Graphic (?)

- Bookmark Link

- Return to Overview Link

## Initial Wireframes

<https://www.figma.com/file/sjRvfJK3I89pzvurYNr5ui/Phantom?node-id=0%3A1>