

# 1 Features

## 1.1 Architecture

1. Add/Edit/Create/Manage content by user-friendly UI
2. Comment/Associate content with rules for graph structure
3. Represent views: graph, content list, guide view, management
4. control of content (remove/prevent bad content/outdated content)

## 1.2 View

1. Graph View
2. Web View : user consumption
3. Print preview
4. CMS View(s) : Backend, holds many views  
e.g add, edit
5. Admin view
6. Login View

## 2 Platform

### 2.1 Responsive

The system should be aware of the user's system environment, and adapt itself accordingly.

#### **Requirement**

It should adapt to the following:

1. Mobile devices
2. Browsers/Webkits
3. Operating Systems

#### **Testability**

System properly responds to:

1. Mobile devices running IOS and Android platforms
2. Firefox and Chrome browser environments.
3. Windows (XP, 7, 8, 10), Linux (Ubuntu, Mint), OSX (Any version)

### 2.2 Scalable

System should be able to accommodate growth in number of users accessing the guides and amount of guides stored, without having to significantly modify the system itself.

#### **Requirement**

System should be able to scale to the following metrics, with only hardware and environment changes needed:

1. 500 concurrent connected users
2. 50,000 registered users

3. 10,000 unique guides
4. Guides with up to 100 sections

### **Testability**

System should, without loss in functionality or usability, handle:

1. Concurrent connections from 10 unique machines and IP addresses
2. 250 registered unique users
  - (a) Fully filled out profile information
  - (b) Able to log in and out multiple times
3. 1000 unique guides
4. 10 guides with up to 30 sections each.

## **2.3 Reliable**

Users should be able to reliably access and use the system.

### **Requirement**

1. Maintain all requirements without loss in accessibility
2. Maintain all requirements with only minor losses in functionality under extreme conditions
- 3.

### **Testability**

System should:

1. Not crash when running tests for other requirements (99% uptime)
2. Functionality should be maintains while stress testing to simulate extreme conditions
3. NOTE: environment or hardware issues do not apply here, refer to environment requirements (TBD)

## 2.4 Secure

Malicious tampering can damage the system's reputation and put users at risk through personal data leakage. Further, it could cause damage to users, by malicious weakening of guides intended to secure systems.

### Requirement

1. Adequately protect user data, especially login information
  - (a) Encryption of login data at rest
  - (b) Enforced privacy settings for user profile data
  - (c) Automatic logout if user disconnects, after a specified time period, or if system crashes
2. Enforce access rights controls to restricted areas of the system
3. Prevent unauthorized or malicious tampering of guides or other content
4. Maintain reliability of system while under attack
5. NOTE: this is separate from system environment and hardware security

### Testability

1. Verify login information for 250 users is encrypted at rest
2. Test all combinations of access rights a user may possess are enforced, on at least 3 users for each combination
3. Test all combinations of user privacy settings are enforced, with at least 3 users for each combination
4. Ensure 10 logged in users are logged out when
  - (a) They disconnect
  - (b) Timeout expires
  - (c) System crashes
5. Pass all reliability tests while under a simulated attack

6. Verify guide and data integrity after:

- (a) A simulated attack
- (b) Attempting manipulation using a suite of common manipulation methods and tools
- (c) Attempting manipulation by 5 different users with different improper access rights

## 3 Usability

### 3.1 Navigation

All guides should be able to be reached by a authorized user in a reasonable amount of navigation time (defined as mouse clicks), depending on the user and their search criteria.

#### Requirement

1. All guides must be reachable, starting from the home page.
2. All guides should be reachable with a maximum of 7 clicks, and average number reasonable for the search criteria.

#### Testability

1. Ensure 1000 guides are reachable by 10 different users with different access permissions from the home page
2. Using scenarios (defined in the scenario document)
  - (a) Create a suite of test guides
  - (b) Have 5 different people (who are not on the project) attempt to perform the scenarios
  - (c) Ensure user feedback regarding navigation time is reasonable for the scenarios performed

## 3.2 Performance

We want reasonable load times viewing guides, navigating the site, and adding content. Additionally, we don't want to overburden the users hardware and Internet connectivity.

### Requirement

1. <5 seconds to initially connect and load the home page
2. <3 seconds to change pages while navigating
3. <4 seconds to fully load a guide
4. Keep user memory, CPU, and network usage (resource usage) below the average for the user environments tested

### Testability

For 10 separate user environments:

1. Maintain time requirements for 100 unique actions (page loads, etc)
2. Ensure measured resource usage is below averages for all tests performed

## 3.3 Accessible

The User Interface should be reasonably intuitive to navigate for average user, with both visual and textual aids. To allow users of all language to access the content, any text should be parsable by common language translators, such as Google Translate.

### Requirement

1. The typical user, with some assumed Internet experience, should be able to intuitively navigate the content
2. There should be visual aides for all actions, and textual aides for unique/important actions.
3. Any displayed text should be parsable by common user language translators

## **Testability**

1. Using scenarios (defined in the scenario document)
  - (a) Create a suite of test guides
  - (b) Have 5 different people (who are not on the project) attempt to perform the scenarios
  - (c) Ensure user feedback regarding intuitiveness is reasonable for the scenarios performed
  - (d) Ensure users can figure out all actions necessary without assistance
2. Verify all actions are properly visually and textually labeled
3. Verify text returned during all tests is parsable by Google Translate