Requirements Documentation

Web-Based Decision-Making Framework

## Scope

To create a web-based decision-making framework that assists researchers in making decisions about how they should de-identify their data.

## Definitions

User: The person using the solution, i.e., a researcher that is publishing a data set and needs to de-identify the data set before release.

Manager: A person who is in a position role where they are responsible for reviewing the work of a user.

The Solution: This is software that is being built for the application of de-identification.

Dataset: The data that is uploaded to the solution for analysis and de-identification.

## Importance Scale

Nice to have: Requirements that or features that the client has stated they would like but has agreed are not required.

Important: Requirements that the system needs but should not be prioritized over critical requirements.

Critical: Requirements that if not met the project would be considered to have failed.

## Functional requirements:

### General

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| --- | --- | --- | --- | --- |
| ID: | Requirement: | Validation Strategy | Source: | Importance: |
| FR01 | The solution shall inform the user when operations are running asynchronously so they know the process is not yet complete. | Observation | Client | Nice to have |
| FR03 | The solution shall run operations that take longer than 3 seconds asynchronously so that the user can continue to use the solution while the process is loading. | Automated end-to-end testing | Analysis | Nice to have |

### Risk Analysis

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| ID: | Requirement: | Validation Strategy | Source: | Importance: |
| FR04 | The solution shall ask questions about the characteristics of the researcher's dataset so the user can make informed decisions when de-identifying data. | Observation & Testing to ensure accurate output | Literature Review | Critical |
| FR07 | The solution shall allow the user to specify the environment which the data set will be used in influencing the outcome of the risk analysis. | Observation & Testing effect of changes | Literature Review | Important |

### Risk Analysis Reports

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| --- | --- | --- | --- | --- |
| ID: | Requirement: | Validation Strategy | Source: | Importance: |
| FR05 | The solution shall present the user with a report which outlines the results of the data risk analysis so they can make informed decisions when de-identifying the data. | Observation & Testing to ensure accurate output | Client | Critical |
| FR06 | The solution shall provide the user with recommendations for de-identification based on the results of the risk analysis to simplify the de-identification process. | Observation & Testing to ensure accurate output | Client | Important |
| FR11 | The solution shall create a managers de-identification report detailing recommended changes and user responses so a manager can review de-identification has been performed correctly. | Observation, Testing accuracy of logs | Client | Important |

## Non-functional Requirements:

### General

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| --- | --- | --- | --- | --- |
| ID: | Requirement: | Validation Strategy | Source: | Importance: |
| NR03 | The solution shall maintain the integrity of user provided data. | Testing | Analysis | Important |
| NR11 | The solution shall be web-based. | Observation | Client | Critical |

### Security/Privacy

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| ID: | Requirement: | Validation Strategy | Source: | Importance: |
| NR04 | The solution shall not allow unauthorized users to gain access to uploaded information. | Observation/Testing | Client | Critical |
| NR05 | The solution shall not store research datasets. | Observation | Client | Critical |
| NR07 | The solution shall not provide information that would be in violation of the 1988 privacy act. | Observation | Analysis | Critical |
| NR08 | The solution shall encrypt all data transferred between the web server and the user’s web client. | Observation | Client | Critical |

### Usability

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| ID: | Requirement: | Validation Strategy | Source: | Importance: |
| NR01 | The solution shall be able to run on major web browsers, include, Google Chrome, Safari, Firefox, and Microsoft Edge. | Observation, platform specific testing | Analysis | Critical |
| NR02 | The solution shall be easy to install on the user’s computer and not require technical knowledge such as using command line interface. | Observation | Analysis | Critical |
| NR06 | The solution shall load each new page in 3 seconds or less. | End-to-end testing | Analysis | Important |
| NR09 | The solution shall have a consistent look, navigation, and design elements across all pages. | Observation & Client Review | Client | Important |
| NR10 | The solution shall be easy to navigate and use, using standard symbol conventions and page layouts. | Observation & Client Review | Client | Important |