**Software Implementation and Testing Document**

**For**

**Group 6**

Version 1.0

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# Programming Languages

* Python was selected for database management within our project, for its third-party libraries, which streamline website development and efficient database handling.
* HTML was selected as the language for structuring the website, providing a framework for content organization.
* CSS was selected to enhance the visual dynamics of the website.
* SQL, integrated within python, was selected for relational database management, ensuring effective data storage and retrieval functionalities.

# Platforms, APIs, Databases, and other technologies used

* Flask is being used as the foundational platform for our website, providing a framework for web development.
* Pandas is being used for data frame management, enhancing data handling capabilities.
* SQLite3 is being used as the primary database technology, facilitating SQL operations and efficient database management.
* Socket is being used for network communication.
* Hmac and Hashlib are being used for secure message hashing within the network, which will enhance data security protocols.

# Execution-based Functional Testing

We conducted comprehensive functional testing for our project by creating synthetic examples and examining edge cases. Our testing strategy focused on verifying the operation of all website mechanics, ensuring functionality for data storage within the database.

# Execution-based Non-Functional Testing

We conducted thorough non-functional testing for our project by examining the limits of our code, including the inner and outer loops. This allowed us to assess the performance and scalability aspects of our system.

# Non-Execution-based Testing

We conducted non-execution-based testing by focusing on enhancing readability and understanding of the code. This involved adding relevant comments for clarity and ensuring proper organization of classes.