**Title: Requirements Analysis Document for Image Optimizer**

**1. Introduction** This document provides a comprehensive analysis of the requirements for the Image Optimizer, a web-based solution aimed at graphic designers. The application will facilitate image quality adjustment to reduce file sizes. This document serves as a reference point for developers, clients, and stakeholders to ensure a shared understanding of the project objectives, scope, and requirements.

**2. Purpose** The purpose of this Requirements Analysis Document is to outline the functional and non-functional requirements for the Image Optimizer. It provides a formal definition of the project's deliverables and serves as a contract between the development team, stakeholders, and clients, ensuring all parties are aligned on the expectations and features of the final product.

**3. Scope** The scope of the Image Optimizer project includes the design, development, testing, and deployment of the application. The key deliverables include:

* A web-based platform accessible via modern web browsers.
* Core functionalities such as image upload, quality adjustment, and displaying the new image.
* User documentation and training materials.

The project excludes saving the modified images.

**4. Functional Requirements**

* **Image Upload**: The application must provide a mechanism for users to upload images for optimization.
* **Quality Adjustment**: Users should be able to adjust the quality of the uploaded image to reduce file size.
* **Image Display**: The application must display the modified image after adjustments are made.

There are no CRUD operations, dashboards, or notifications required for this application.

**5. Non-Functional Requirements**

* **Performance**: The system must handle up to 10 concurrent users with response times not exceeding 1 second for key operations.
* **Security**: The application must comply with industry-standard security practices, including data encryption in transit and at rest.
* **Usability**: The user interface must be intuitive and comply with WCAG 2.1 accessibility standards.
* **Scalability**: The architecture should allow for easy scaling to accommodate increased user load.
* **Reliability**: The system should have an uptime of at least 99.9%, excluding scheduled maintenance.

**6. Stakeholder Analysis**

* **Graphic Designers**: Utilize the application to optimize images for reduced file sizes.
* **Developers**: Responsible for coding, implementation, and unit testing of the application.
* **Project Managers**: Oversee project progress, manage timelines, and ensure stakeholder communication.
* **Quality Assurance Team**: Validate functionality and non-functional aspects to ensure project quality.

**7. Assumptions and Dependencies**

* **Assumptions**:
  + No specific assumptions are required for this project.
* **Dependencies**:
  + No external services or APIs are required for this project.

**8. Constraints**

* **Budget**: The project must be developed within the budget of 1 million dollars.
* **Timeframe**: The application must be delivered within one week from the start date.
* **Technological**: The application must be built using Flask for the backend and React for the frontend.

**9. Acceptance Criteria**

* **Functional Completeness**: All features listed in the functional requirements are implemented and tested.
* **Performance Benchmarks**: The application meets the specified performance requirements under load testing.
* **Security Verification**: The application passes security assessments, including vulnerability and penetration testing.
* **User Acceptance Testing (UAT)**: Positive feedback from end users and stakeholders during UAT.
* **Documentation**: Complete user guides and technical documentation provided for all system components.

**Conclusion** This Requirements Analysis Document establishes a clear and detailed plan for the development of the Image Optimizer. By adhering to these requirements, all stakeholders can ensure that the final product meets the expected quality and functionality standards.