Computer Science and Engineering

Software Engineering Standards

System Requirements Specification

Version 1.0

Document Number: SRS-001

Team A6

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REVIEW AND APPROVALS

Printed Name and Title	Function (Author, Reviewer, Approval)	Date	Signature
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REVISION LEVEL

Date	Revision Number	Purpose
March 7, 2016	Version 1.0	Initial Release

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1. INTRODUCTION

1.1 Purpose

The purpose of this document is to specify the software requirements for the website Sharit. This document will outline the format, design, functionality, and purpose of Sharit. This document is intended for the client, the designers, and the developers.

2. SCOPE

2.1 Identification

This document is the Software Requirements Specifications for Sharit. This document is revision 1.0 with number 1.

2.2 Bounds

Our idea stems from the need to share files/documents in an organized, coherent manner that is also accessible to many others who you want to share with. There are services out there that do this job but is disorganized and does not provide any kind of feedback system.

Students can use this service to post notes for the underclassmen and receive feedback on their work. Students will be able to collaborate and create notebooks that can be shared with other students in the class. This will benefit those who may not have been able to attend school for that day or those who want to use this platform to study for an upcoming exam. The key to our platform is organization of uploaded files; we want people to be able to look up the file they want and quickly access it or ask the owner of the file to grant permission to access.

The project is a website that facilitates conversations and file sharing between people from a common organization. The layout will be a clean and simple format for easy intuitive understanding. Organizations will have a domain that will be split into

smaller pieces, such as the subdomain and topics. Users will will have permissions regarding which organization domain and subsequent subdomains they may access.

2.3   Objectives

The priority is to release the Software Project Management Plan. The project will be utilizing an incremental life cycle with the deliverables listed below:

Project Proposal	February 17, 2016
Software Requirements Specifications	March 21, 2016
Software Project Management Plan	March 30, 2016
Software Analysis Specification	April 11, 2016
Software Design Document	April 25, 2016

3.   OVERALL SYSTEM OVERVIEW

3.1   CONTEXT DIAGRAM
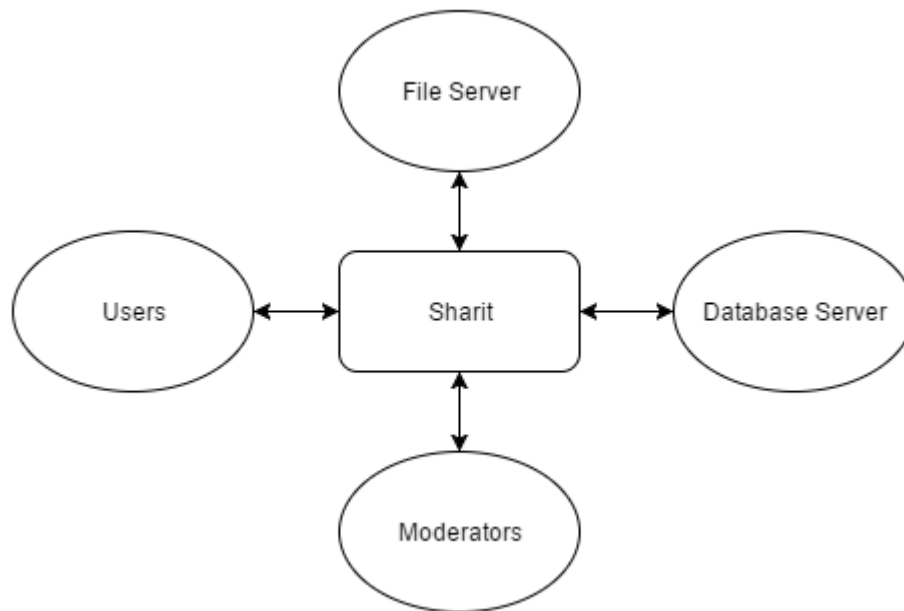
3.2   ADDITIONAL DESCRIPTIVE ITEMS

a. Product Functions:
- i.   User login and registration to ensure that maintain permissions and file access for each user.
- ii.   Files can be uploaded and edited by users and is maintained by a database.
- iii.   Communication systems between users with access to same files.
- iv.   Comment system for users to leave behind on files
- v.   Database tracks permissions for every file and user.

b.   User characteristics: This product is meant to be used by college students as well as staff. It can be used to serve corporations as well.

c. Constraints: Access to the system is maintained by login. Files are also managed by the user who uploaded it. This permission can be changed only by the user and may provide difficulties in sharing to a large group of people.
d. Assumptions: This product will be programmed in C++ and Postgres. Any changes will not impact the product largely.
e. Requirements subset: The product will be broken down into three phases. Website front-end, database management, Website back-end. Database management and the backend are the most important while the design of the website is secondary.

4. DOCUMENT OVERVIEW

The rest of this document contains referenced documents, business requirements, specific requirements of Sharit, system test plan requirements, quality guidelines for this document, and an overview of the changes in this document. A general guideline can be seen in the table of contents.

5. REFERENCE DOCUMENTS

Team A6 Project Proposal

6. BUSINESS REQUIREMENTS

6.1 TECHNOLOGY

1. The technology to service fast, reliable, and high quality service

6.2 ECONOMICS

1. Domains will be sold to organizations.

2. Revenue comes from selling disk space to organizations

6.3 REGULATORY AND LEGAL

1. Must comply to general academic guidelines found in most courses' syllabus.

6.4 MARKET CONSIDERATIONS

1. There are no market drivers at this time.

6.5 RISKS AND ALTERNATIVES

1. Risk of plagiarism
    1.1. Can be discouraged by linking anonymity with nyu.edu accounts upon signing up.
2. Work that are not acceptable to be shared
    2.1. Can be removed by moderators

6.6 HUMAN RESOURCES AND TRAINING

1. Student programmers
2. Full stack training
    2.1. HTML
    2.2. CSS
    2.3. Javascript
    2.4. PHP/Python - general purpose language
    2.5. postgres/oracle - database system
    2.6. C++ - web server
    2.7. Windows - operating system
    2.8. Git - version control

7.   SPECIFIC REQUIREMENTS (DESCRIPTIVE FUNCTIONAL AND NONFUNCTIONAL REQUIREMENTS)

7.1   FUNCTIONAL DESCRIPTIVE DETAILED REQUIREMENTS

1.0   The website will provide functions for the user to login and register as well as a profile
- 1.1.   A user will be able to register using their student or company email
- 1.2.   Existing users will be able to log in using the credentials they registered with
- 1.3.   Each user will have a profile with information such as name and school/company
- 1.4.   Options will be provided to change basic information

2.0   Each organization will be allowed to create a domain on the server
- 2.1.   Domains are only accessible to users in the organization or with permission
- 2.2.   Domains will have administrators or moderators
- 2.3.   Admins can modify aspects of the domain as well as grant permissions
- 2.4.   Each domain can have subdomains that correspond to different parts of the organization

3.0   Users will be able to upload and download files
- 3.1.   A user will be able to create a thread where the file will be uploaded
- 3.2.   Threads will be part of a subdomain
- 3.3.   A user that is part of the subdomain may choose to view or download the file

4.0   Each thread will support feedback/comments
- 4.1.   A thread can be upvoted/downvoted to show popularity within a domain
- 4.2.   Users can leave comments on the thread
- 4.3.   Other users can respond to a previous user's comment

4.4.   Users will be able to upvote/downvote other user's comments
5.0   A search will be provided to look up specific information in the system
    5.1.   Users can look up specific files/threads in the domain
    5.2.   Users can search for other users and view their profile
    5.3.   Users can search for domains or subdomains to join

7.2 REQUIREMENT USE CASES

This will be provided at a later version of the document

7.2.1 USE CASE DIAGRAMS

7.2.2 USE CASE DESCRIPTIONS

7.3 NON-FUNCTIONAL DESCRIPTIVE DETAILED REQUIREMENTS

This will be provided at a later version of the document

7.3.1 SYSTEM CAPABILITIES, CONDITIONS, AND CONSTRAINTS

7.3.2 PHYSICAL RESOURCE REQUIREMENTS

7.3.3 ENVIRONMENTAL CONDITIONS

7.3.4 SYSTEM PERFORMANCE CHARACTERISTICS

7.3.5 SAFETY REQUIREMENTS

7.3.6 SECURITY AND PRIVACY REQUIREMENTS

7.3.7 SYSTEM HUMAN INTERFACES

7.3.8 SYSTEM MAINTAINABILITY

7.3.9 SYSTEM QUALITY FACTORS

7.3.10   DESIGN AND CONSTRUCTION CONSTRAINTS

7.3.11   PERSONNEL-RELATED REQUIREMENTS

7.3.12   TRAINING-RELATED REQUIREMENTS

7.3.13   LOGISTICS-RELATED REQUIREMENTS

7.3.14   PACKAGING REQUIREMENTS

7.3.15   PRECEDENCE AND CRITICALITY REQUIREMENTS

7.3.16   OTHER NONFUNCTIONAL REQUIREMENTS

8.   SYSTEM TEST PLAN REQUIREMENTS

This test plan will assess the requirements as specific in section 7.1. The following test scenario will demonstrate how a user might use Sharit.

Spec. #	Action	Input	Expected Output
7.1.1.1	Sign up for account	smith@nyu.edu	Account created
7.1.1.1	Sign up for account	jane@gmail.com	Fail
7.1.1.2	Login to account	smith@nyu.edu	Login Successful
7.1.1.2	Login to account	foo@nyu.edu	Fail
7.1.1.3	View profile	Smith's profile	Smith's information(name, company/school)
7.1.1.4	Change information	John	Smith's name is now John
7.1.2.1	Access domain	Smith's domain	Success
7.1.2.1	Access domain	Jane's domain	Fail
7.1.2.2	Check administrator	Smith	True
7.1.2.3	Delete thread	Ice skating	Thread deleted
7.1.2.3	Grant permission	Jane	Permission granted
7.1.2.4	Create subdomain	Tests	Subdomain successfully created
7.1.3.1	Create thread	Prof. Bob's Fall 2015 midterm	Thread successfully created
7.1.3.3	Upload file	fall_2015_midterm .pdf	File upload success

7.1.3.3	Download file	fall_2015_midterm .pdf	Download success
7.1.4.1	Upvote/downvote thread	-1	Vote success
7.1.4.2	Comment on thread	"Useful sample"	Comment posted
7.1.4.3	Comment on comment	"Incorrect info"	Comment replied
7.1.4.4	Upvote/downvote comment	+1	Comment upvoted/downvoted
7.1.5.1	Search file/thread	fall_2015_midterm	File/thread found
7.1.5.2	Search user	John	User profile found
7.1.5.3	Search subdomain	CS2214	CS2214: Computer Architecture course found

9.   QUALIFICATION PROVISIONS

This document will be reviewed by each of the four members of team. The qualities that the team will look for are: correctness, clarity, completeness, consistency, stability, verifiability, modifiability, and traceability. Each team member will understand every aspect of the document and will look for faults in the document. Once a fault has been found, it will be noted down and promptly corrected. Once the team feels like all the faults have been corrected, the document will be redistributed to the team for another review. This is done as many times as needed for all the faults to be corrected.

10. REQUIREMENTS TRACEABILITY

The functional and non-functional requirements listed in section 7.1 will be thoroughly traced throughout the life of the software engineering process. Each specification will be corresponded with an artifact in each of the workflows and be traced. Requirements tracing is done to avoid litigation and also mitigates liabilities. Keeping track of requirements will make sure everything is implemented and meets the requirements as described in section 7.1.

11. EVOLUTION OF THE SRS

Version 1.0 will cover the scheduled trajectory of the project; all estimates and planning will be ordered and initialized. This version is designed to allow maximum leeway for changes regarding future deficiencies, shortcomings, inaccuracies, or changes in the system environment. As project progression continues, tasks in the schedule will be marked completed and upgrades or deprecates of various parts of the project will be noted.

12. RATIONALE

Finding information relevant to coursework can drastically improve one's grades. NYU-Poly has historically incurred an usually low graduation rate (50~60%). Information, pertaining previous semester student notes, tests, and possibly homeworks, should be upheld as samples for students currently taking the course to help them review. In the requirements, we aim to answer general questions posted by students that not even google.com, NYUClasses, and instructors could not provide. This is most often phrased "what's the format" or "is there a sample midterm?". To uphold integrity of information, we provide and limit information and registration to students with a nyu.edu email address.

We also have in the requirements 7.2.1 and 7.4.4, that inappropriate content posted by students will reviewed by moderators and also by other students. These students could provide anonymous feedback by upvoting or downvoting what they deemed to be inappropriate.

13. NOTES

Initial release will be limited to people with a nyu.edu email address. This product will currently only serve only NYU students and staff. This will allow us to track errors without having to modify a huge database. Once we have ascertained the product to be sufficiently good enough for an increase in users, we will allow distribution to other universities as well as possible start-ups.

14. APPENDICES

14.1 SCHEDULE TRACKING

Artifact or Deliverable	Whom	Estimated	Actual	Difference
Initial SRS	Allen Zheng	3 hr	4 hr	1 hr
	Hui Huang	3 hr	5 hr	2 hr
	Kenneth Liang	3 hr	7 hr	4 hr
	Warlon Zeng	3 hr	5 hr	2 hr
	Summary	12	21 hr	9 hr

Cumulative

Whom	Estimated	Actual	Difference
Allen Zheng	3 hr	4 hr	1 hr
Hui Huang	3 hr	5 hr	2 hr
Kenneth Liang	3 hr	7 hr	4 hr
Warlon Zeng	3 hr	5 hr	2 hr
Summary	12 hr	21 hr	9 hr

14.2 DEFECT TRACKING

Artifact or Deliverable	Whom	Estimated	Actual	Difference
Initial SRS	Allen Zheng	5	3	2
	Hui Huang	5	2	3
	Kenneth Liang	5	4	1
	Warlon Zeng	5	2	3
	Summary	20	11	9

Cumulative

Whom	Estimated	Actual	Difference
Allen Zheng	5	3	2
Hui Huang	5	2	3
Kenneth Liang	5	4	1
Warlon Zeng	5	2	3
Summary	20	11	9