Software Requirement Specification

for
surprise.me

Prepared by,
Team 7

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1. DOCUMENTS OF REQUIREMENT COLLECTION.

1.1 Purpose:

The purpose of this document is to present the requirements and functionalities of the Software to the developing team. This document will be very useful as a reference for the developing team to validate their progress from time to time during the development process of the project. The requirements are collected through requirement gathering techniques. The requirement gathering techniques are research through websites. This document describes "**surprise.me**". While in development, all or some of the features specified in this document may not be available.

1.2 Intended Audience.

The System Requirements Specification (SRS) document describes all data, functional, behavioral and non-functional requirements of the software. The document is intended for the project development team. This document forces the project team to consider and critique all the requirements before the next phase, i.e. Design begins. This document helps in other phases of the Software Development Cycle, where it helps reduce errors, and forces the team to stick to the requirements. All members of the team, irrespective of their role in the group will be referring this document for their respective roles. Any further changes in the requirements will be modified in the SRS.

1.3 Project Scope

Today although it is easy to get the contents that a user need, it is not always possible to get the exact contents that a user really need. A user may be interested in so many things and he might want to read the articles related to the things that excites him. There are so many RSS readers available over the net such as "Google Reader", "Feedly", "LightRead", etc. A user can subscribe to the feeds of the website and using the tools/sites mentioned previously he can regularly visit it and can read the latest contents. This is an easy way to keep ourselves updated with the latest contents.

The problem with this approach is that a user may "skip" the articles which may be really helpful to him because of so many articles in the subscription list. Currently there is no such service which gives the user the most related contents over the web. So our project is to provide a user such a platform where he can keep himself updated with the latest contents in such a way that he can see the most relevant and most rated articles on the top of his reading list. The benefit of this approach is that a user

might not always have time to read the all the posted articles posted on the website so that in a rush situation he comes to know about some articles that he should not miss.

Furthermore, one another tendency that a user is having is that he only wants to see the information that is relevant to him. He does not want any useless things to be displayed on the website and He always wants to read as less as possible for information introduction. A typical case with today's information era is that there is too much informative information so that a normal user may be skipping so much information even though he wants to read it. So that our project is remedy to this situation where articles that are going to be displayed are arranged in such a way that user has to read as less as possible and also getting the information that he wants in easiest way.

We are making a website that will crawl the relevant information from the web based on the user's interests and will provide links to those sources. The content that is crawled will be stored in the database.

1.4   <u>**References:**</u>

1. Project Proposal
2. Feasibility Report

2. OVERALL DECRIPTION

2.1 User Category

There are primary two user categories.

1) General Users:
  ⇨ The general user is the one who can use the website by registering on the website, create his profile, change password and add interests. He can view contents on his account according to his described interests in his/her profile. The user can add or drop his interests from the list of predefined interests only (given by Administrator). He can search users and add them to his user graph. He can manage his profile and graph accordingly.

2) Administrator:
  ⇨ Administrator is the user who manages the general user. He has the permission to block the user if he/she is detected as a spam user or so. He has the log of each user and his activities. Administrator can add/drop the type of interest in the interest list given to the user for selecting his interests. He can manage the sources and prioritize them as needed.

2.2 Assumptions:

⇨ We will be able to crawl only those pages which are crawl-able and there is no violation of security or copyrights issues.
⇨ The page is in text format and not in some encoded format.
⇨ The format of the article and structure of the page is supportive for information extraction.

2.3 Constraints

⇨ Since system is based on the assumptions it might possible that the suggestions that are given to the client are not according to his choice.

3.   SYSTEM FEATURES

3.1   Functional Requirement

3.1.1   Login

3.1.1.1 Description and Priority

This feature is essential for security purpose. All the users are having their log in credentials and through it they can access the system and can access the information which is allowed to them. The details which are not related (not allowed to access) with the user will not be accessible to the user.
As this is the entry point to the system access it is extremely important and having the maximum priority because of system security and access control.

3.1.1.2 Stimulus/Response Sequences

In order to access the system the user has to provide his log in credentials in terms of username and password allocated to him. While taking the username and password as input the system will check if any such user exists and username-password pair matches then it will allow the access to the system and it will redirect the user to his corresponding home page.

3.1.1.3 Functional Requirements
Req-1: Database must store the username and associated password for each user. Database should be well maintained by the Administrator so that there cannot be any inconsistencies.
Req-2: As the security is the major concern the database must not disclose the credentials to any person except the user itself. Therefore password should be stored in database in the encrypted/hashed form so that even Administrator cannot see the exact password of any of the user in the system. Advanced encryption mechanism like digital certificates can be used to provide this.
Req-3: User should also be provided the facility of recovering their username/password in case of lost. They should be provided the steps to recover their credentials.
Req-4: According to the type of user category the home pages that will be shown to the users will be different. So that system must take care of these facilities so that proper access control over the system can be maintained.

Req-5: According to the type of user the access control is also differing because there are various user categories and one type of user is supposed to do the specific task only assigned to him. So that all the users must have privileges assigned to them to maintain the system integrity.

3.1.2 Registration

3.1.2.1 Description and Priority

As our site works mainly on the interests selected by the user, the user has to select interest from the list thus the user would be shown the articles which are only of his interest. To achieve this, all the users need to have an account on this system. So the user has to register with basic information like name, email id, password. His email id would be verified and after that only he would be able to login to our system. User Registration will have a high priority.

3.1.2.2 Stimulus/Response Sequences

User can register on the website with no cost and he will be provided link to the registration page. He can fill up the form which has basic information and then can submit it to the system. System will ask the user his personal details like first name, last name, address, contact number, email address. No other details are required at this time. Later on in future time he can update his profile with some more details like date of birth. First time the user logs in the system he has to select his interest and after that, articles will be fetched from local database.

3.1.2.3 Functional Requirements

Req-1: The information that is provided by the user should be verified by the email address. So that system can assure that no fake accounts are registered. This can be accomplished by providing confirmation like account activation link which is sent to the email address of the user while registration and when user go to his mailbox and click on that link then only his account gets activated.

Req-2: At the time of registration the user must be verified with captcha like mechanisms so that system can ensure that the person is not spamming.

3.1.3 Manage User Profile

3.1.3.1 Description and Priority

The system should provide user a profile which he can modify according to his wish. It includes updation of personal details.

3.1.3.2   Stimulus/Response Sequences

The User once registered will have to fill in a few basic details for his profile. That will include Name, Country, Birthday (visibility adjustable by the user), Email ID, user type (student, employee, etc), work location/college (visibility adjustable by the user). The email ID and name will be fetched from his registration details and the user can edit it if want to but email ID if changed will be verified again.

3.1.3.3 Functional Requirements

Req-1: Database should store all the personal details of the user and it should be secured enough so that no one can hack into someone's personal details.

3.1.4 Manage User Interest

3.1.4.1 Description and Priority

User interest are selected by the users to get the relevant data that they want to read and the interest is specified by the user when he creates the account and the data is crawled according to his interest and displayed to him. User can also update his interest and also remove or add interest to his profile. The data crawled is displayed to him according to his interest on the basis of higher rating. The Administrator provides the list of interest that is available for the user to select any area that he is interested in. Priority of this feature is high.

3.1.4.2 Stimulus/Response Sequences

The user must be registered with the site and he needs to login to the system to make the changes to his area of interest. He is provided a predefined list of the area of interest by the Administrator. This list of interest is available to the user to choose his are of interest for which he wants to view the article. The user is not allowed to enter his own area of interest. The Administrator can update the interest list that he had specified he can add, remove, update the area of interest. As the user selects the area of interest and updates his profile he will also get the information related to the new interest that the user has updated.

3.1.4.3 Functional Requirements.

Req-1: The registered user must login to the system and then he can view the articles that he has already subscribed and also can updates his subscriptions for the new articles that are in the list.

Req-2: The Administrator should login to the system and make changes to the interest list.

3.1.5 Manage User Graph

3.1.5.1 Description and Priority

The end user of the system will be able to enjoy the privilege to create and manage his own user graph. A user graph is similar to a user's friends list or circle which is usually found in social networking sites and messenger services. Every end users of the system will be blessed with privileges like updating his friends list, recommendation of friends, friend search etc. A user will also be notified in case of any updates from a user

within his graph. User graphs are important to lure visitors back to our site. User graph gives the feeling of learning in group (especially with friends) to the users. User graph enhances the site visit experience as every user is indirectly connected with his peers and shares his interests.

3.1.5.2 Stimulus/Response Sequences

Once the user has completed creating his profile and specified his interest, he will be allowed to populate his user graph. Initially, as user will be have to search another user (friend) and can request him to add him in his circle. Moreover, as and when his user graph expands, the system will get more and more capable to suggest him more users which he might know. The system will be monitoring all the activities which each user performs and will notify important updates related to him (regarding articles read by him) to friends in his user graph. User will also be allowed to remove any friend from his graph.

3.1.5.3 Functional Requirements.

Req-1: The user must have registered.
Req-2: The users graph must be saved into the database in a proper format.
Req-3: The user should receive only relevant notifications.
Req-4: The user should be able to report abuse or poke other user.

3.1.6 Article Search

3.1.6.1 Description and Priority

Article Search deals with the retrieval of the desired article that we have maintained in the database. Suppose, if the user wants an article to read then the priority to fetch the content is given to the user's history i.e from the past records of the user the behavior of his analyzed in terms of mostly visited site for article. So the result will be displayed based on his history. The priority for this feature is high.

3.1.6.2 Stimulus/Response Sequences

The foremost thing required for getting the desired content to be displayed before the user is the query or the keyword , the query is filled on the search engine then only the user will be able to fetch the desired article.

3.1.6.3 Functional Requirements.

Req-1: Observe user's browsing pattern for better search results.
Req-2: Articles are about to be searched from the database.

3.1.7 Article Suggestion

3.1.7.1 Description and Priority

This feature based on the user history pattern and their choices will suggest articles to the user in which he might be interested. this feature is important as a user can't possible to have idea of all the different articles on site and he may like a certain article but may not have any idea of its existence. The priority of this feature is high.

3.1.7.2 Stimulus/Response Sequences

Whenever user makes a choice based on pattern observation of all the users the system would suggest articles that user might be interested in.

3.1.7.3 Functional Requirements.

Req-1: We will have a database of all the articles.
Req-2: The articles will be categorized in user interest group.
Req-3: The system will observe and record the user observation pattern
Req-4: Perform data mining on observation pattern to make most relevant suggestion to the user .

3.1.8 Report a User

3.1.8.1 Description and Priority

All the users will have a user graph which contains all the users having connection with that user. This feature allows you to report a user from your graph to the Administrator to block him i.e. a user may choose to block another user from his user graph. For that, he can report the Administrator to remove that user from his user graph. The Administrator will block the user if he is reported by other user. The blocked user will not be able to find that user (which reported him) in friend search, will not be able to view his profile, will no longer be in his user graph and will not be able to suggest him any article for some duration of time decided by the Administrator. Blocking someone will not prevent him to login his account, read articles or any other feature of the website. The user whose account is blocked will not get any notification before his account is blocked. Any user can report block user for any reason such as fake user, giving spam suggestions, bringing unwanted attention or any other.

This feature will be given low priority because, it does not interact with other essential functionalities of the system not does it stop the functioning of the system without this feature. It is just a feature to enhance the comfort and rights of the user.

3.1.8.2 **Stimulus/Response Sequences**

To make use of this *Report/Block a user* feature, user will have to select that user and click to report user button. Also appropriate reasons for reporting a user should be given to the admin in order to block a user.

3.1.8.3 **Functional Requirements.**

Req-1: A user will be able to use this feature only on those users will all exists in his user graph. A user cannot report/block a user not in his user graph.
Req-2: Only admin can block any user account. So to block any user, the user has to report it to the admin giving valid reasons.

3.1.9 **Article Management**

3.1.9.1 **Description and Priority**

Article management deals with tagging the articles. Tagging means an Administrator can tag the article as "Article of the month", "article of the week", "article of the day" etc. The priority of this feature is low.

3.1.9.2 **Stimulus/Response Sequences**

The Administrator views all the recent articles and from the view states he decides to give any specific tag to the article. Then he selects the article and then he gives article a tag and saves it.

3.1.9.3 **Functional Requirements.**

Req-1: Tag information must be stored in the database so that any point of time we can get the list of the articles for some kind of article searching. It is probable that this kind of articles will be viewed more times than a regular article.

3.1.10 **Search Friends**

3.1.9.1 **Description and Priority**

This feature is for enlarging a user network like in a social site. For adding his/her friend in his/her graph, user need to first find them from network. For that this feature is given to the user. User can find a person by giving a name and if that named person is there in the system network then user add him in his own network.

Priority can be given based on user that is he wants to enlarge his friend graph and want to use Suggest Link feature of our system. If user only interested in the reading articles then we can give medium priority. Else user will use this feature than it

gets high priority because the use of user graph and suggest link module both depends on the use of this feature.

3.1.9.2 **Stimulus/Response Sequences**

For that Find Friend tag would be given to the user in his profile. User will just need to type a name of his/her friend and single click on FIND FRIEND tag. System will check in database for that person. If that named people is there then it will fetch and give that list to the user with one new tag called ADD TO GRAPH and little information like person's location.

3.1.9.3 **Functional Requirements.**

Req-1: That named person should be there in the system database. If searched person is not registered on this site then system will not show that person. If system would not found the single person with that given name then system will give the message like not found or not there in network.

3.2 EXTERNAL INTERFACE REQUIREMENTS

3.2.1 <u>User Interfaces</u>

- **Clients:**

  1) Clients are one of the user category and they cannot access all the data of system.
  2) They can access their personal information.
  3) They can view article links and can also view a limited portion of the articles.
  4) They can also provide feedback for the site.

- **Administrator:**

  1) They should be responsible for updating data whenever needed.
  2) They are also responsible for taking regular backup of the data.

3.2.2 <u>Hardware Interfaces</u>

- Computers need to have network interface card.
- Servers should have efficient algorithms and hardware support for data backup.
- Computers must be connected to the internet to access the system.

3.2.3 <u>Software and Communication Interfaces</u>

- Servers should have Operating Systems which are capable of running SQL language.
- User computers need to be able to access the browsers which are HTTP and HTTPS compatible.
- Server should have maximum bandwidth available in that area so that many client requests can be handled concurrently.

3.3 <u>OTHER NON FUNCTIONAL REQUIREMENTS</u>

3.3.1 <u>Performance Requirements</u>

As the website is client centric the response time of the system must be as low as possible so that client doesn't get any inconvenience. The server may be heavily loaded but we may provide the low bandwidth so that database can respond quickly without long delay. And furthermore the database should also be able to handle concurrent requests.

The loading time of the Web Pages must be as low as possible otherwise it may lower the popularity of the system.

3.3.2 <u>Safety Requirements</u>

As the database is storing very crucial details about all the users and articles, system cannot afford the loss of the data. So on periodic intervals, backup of the data should be taken on any physical storage to prevent data from loss due to power supply or the hardware failure. This physical storage can be used later on to recover the data back. So this safety concern must be taken into consideration.

3.3.3 <u>Security Requirements</u>

As there is confidential data about the account details in the database, the confidentiality of the user must be maintained in the database. For that some password encrypting techniques must be used so that no one can know the credentials of others. And some privileges must be given to the each user category so that its functionality is limited to that domain only, he cannot access the data which is not allowed to her to use. And as the system is online it might possible that two operations may be performed at the same time on the database so that database must support concurrency control. The data integrity must also be maintained.

3.3.4 <u>Software Quality Attributes</u>

The software is able to fetch the data from various sources and it is able to display the most relevant contents. So one of the most desirable attribute of the system is that it should be able to function as expected in any circumstances. In order to make software widely available over the dispersed geographic locations we can use localization and internationalization also but it is not desirable at this stage.

4   SYSTEM REQUIREMENT ANALYSIS

4.1   Interview

4.1.1 Interview Plan

Agenda: Know about what a user thinks for the proposed system.

Participants: Dwaipayan Vora (Interviewee)
                   Harjeet Singh Chhabda (Interviewee)
                   Kushal Pandya (Interviewee)
                   Meherzad Lahewala (Interviewee)
                   Faishal Saiyed (Interviewee)
                   Soham Soneji (Interviewee)
                   Renish Dobaria (Interviewee)
                   Chintan Sarvaiya (Interviewee)
                   Raj Tamakuwala (Interviewee)

Date: 27-Sep-2012   **Time:** 22:00

Duration: 45 Minutes   **Place:** DA-IICT (Web Conference)

Purpose of Interview:

A conference held for knowing the current problem and finding out the feasibility of the proposed system.

Agenda:

- Problem with the current feed readers.
- In depth understanding of what a user wants from the system.
- Know the feasibility of the system.

Document to be brought to the Interview:

Documents of general understanding of system and basic idea about how system is going to work.

4.1.2 <u>Interview Details</u>

- **how frequent would you like to use application like "surprise me" in your daily life and how useful would it be to you ?**

   From the description about the system that you have given I would be very happy to use it since I don't have to read everything on the web that comes and it will give me recent updates with relevance.

- **Do you find this concept useful at all ?**

   Yes, definitely. Through the interests specified in the system I can be active on what I like. Even If I haven't used this kind of system/RSS Readers before due to this kind of facilities I will be tend to use it.

- **What do you like the most in it? The graph for suggesting it to your friend or only relative contents to you?**

   Main purpose of visiting your sites would be making myself updated on latest stuff. So contents are the main things I would be going for.

- **Would you really like to suggest it to your friend on daily basis ?**

   Not daily basis but on regular basis.

- **Do you think user graph is needed?**

   Yes. It will give social feeling.

- **Can you now recall any such related sites which we might miss?**

   www.checkdeck.com

- **Do you think it can help a large number of audience ? Do you think it will help geeky people only?**

   Yes if properly implemented it can help a lot number of users. And no we cannot say that it will help only geeky people. Reading is the done by every user and every one like to know about what he likes so it can help every one. You can use this anywhere so that is also plus.

- **Would you like pictures in articles ?**

   Yes. It will be a great feature.

4.2   Event Management Questionnaire

Please give your answer to the following questions:

1) Do you know about any site which gives you RSS feeds according to your browsing pattern and interest types? If yes please specify.

Yes / No

2) Do you ever use any Social Bookmarking Sites, like stumbleupon, digg, delicious?

Yes / No

3) Do you always find the relevant content that you are looking for?

Yes / No

4) Do you think our system should provide entire articles or just links to them with some introduction?

Articles/Links

5) Do you think if this kind of system will be developed it will help everyone ?

Yes ,everyone will be benefited / No, not everyone

6) What additional functionalities should be there in our system?

Text

7) If such a site is developed what you think how often do you use such sites?

Daily / Weekly / Monthly

8) Do you follow any sites to keep yourself updated?

Yes / No

9) Please write if you are having any comment/ suggestion.

4.3 <u>Fact-finding Chart</u>

Objective	Technique	Subject	Time commitment
Feasibility study	Background Reading	Project Proposal, Problem Description, Feasibility document	1 Day
Necessity of the system	Questionnaires, Interviews, Observation	End users	2 Days
Determine operations	Questionnaires, Interviews, Observation	End users, Similar Websites	5 Days
Determine features	Background reading, Interviews, Questionnaires, Discussions with development team	End users, Requirements traceability matrix,	5 Days
Determine users	Background reading Observation	Problem Description, Requirements traceability matrix2 Days	2 Days
Determine user roles	Interview, Questionnaire, Observation	End users, Requirements traceability matrix	3 Days