

Software Requirements Specification for

TRU Donkor Research Website

Version 1.0 approved

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1 Introduction

It also holds the information of the members of this Research Group.

Here, Professor is the administrator, Research group members are one of the users selected by the administrator and all of the Students and other Browsers of this website are daily viewers of this website. This website will have the related information of this research group including news, topics, current events, publications, contact information, and a survey that is required to be filled in order to become a member of this research group. This survey is also been taken as a satisfaction count of this website's content. This website is using TRU Web Server.

1.1 Description

This website allows an administrator to update the content of the website provided that the administrator logs into an account with the provided credentials. In detail, an administrator has to login using a given username and password to enjoy all the features of this website. The administrator has different tasks given to use functions like editing, updating, formatting, and using several instruments of chemistry. This function enables only admin to update content like research events, news, topics, publications and conferences. Research members, as well as the administrator will be able to create and update a personal profile provided they log in with the provided login credentials. A member can only edit their personal information in the website for ease-of use. A general user can browse the website's content, fill out a website satisfaction survey, and request to become a member.

1.2 Intended Audience

This website is intended for professors to read current research in related fields, for research group members to familiarize themselves with the current research, and for any other interested party.

2 Functional Requirements: The functionality of the website involves some of the core operations and activities that will be mentioned step by step below :

1. The purpose of this website is to provide a platform to students, instructor and other visitors with research materials to develop analytical methodologies to study real world chemical systems in the medical field and food industry.
2. The home page will consist of linked web pages in a horizontal menu bar, with buttons namely, Research, Members, Instrumentations, Publications & Conferences, Gallery and Contact Us i.e a Survey.
3. The home page will have an image-slider designed to show pictures of the gallery, upcoming newsletter and publications.
4. In the home page, a section of recent new and past news through which users of website can get to know about research papers and achievements, including the clickable links for the titles of paper which will direct the reader to their source pages also embedded in the website for more information.
5. The bottom of the home page has the clickable link to instructor's email address, which will direct the user to open the link through browsers like Google Chrome, Mail, Outlook, Opera and Yandex internet browsers, by which a student can contact the instructor to do his own research by emailing him using any of the above mentioned browser.
6. When a user clicks on the Research button, a new page will open in the same window, which has explained the research areas of interests in order to give the visitors a better understanding of the website.
7. The Members button is linked with the email-address of members of the research group which will enable the user to click on the email and get directed to mail that person using browsers like Google Chrome, Mail, Outlook, Opera and Yandex. This page will also have the link to instructor's email address (same as mentioned in the home page) and information about Courses Taught , Honors, Awards, & Grants, Affiliations on clicking the link "~Courses Taught ~ Honours, Awards, & Grants ~ Affiliations~", along with the detail of each member of the research group as given by the admin.
8. The section of Conferences & Publications will have three buttons namely, "Publications", "Conferences", "Students Awards" and "Back to Top" when clicked

on will scroll the page to Publications section, Conferences section and Back to top respectively.

9. The Gallery consists of pictures as uploaded by the admin, it will have clickable links to each photo and requires Adobe Flash Player to open the picture-links. For those users who haven't installed Adobe Flash Player on their systems, will be directed to a new page with a link "Get the free Flash Player here" that will redirect to Adobe Player website.
10. There is a Contact Us button with contact information of the instructor and a link that redirects to email in the same way as above mentioned portion by clicking the blue colored link of email.
11. The contact us part is merely a forum of text fields with requirements Name, Email and a Comment section respectively, that will allow a maximum of 2000 letters as a word limit for the users to give their opinions about the content.
12. The footer has the links to TRU Website, TRU Science, Links of interests and a Sitemap in the bottom of each web page mentioned above.
13. The Admin will be able to log-in to the website by using his username and password. Specifically, the Admin will be able to make changes to research material, add more research, add members onto the group according to his own wish and will be given access to a page of the website to allow for this.

2.1 Non-Functional Requirements: The non functional requirements of our software are:

Software Quality Attributes:

Availability

If the internet service is disrupted while sending information to the server, the information may be sent again for verification. Whenever there is any kind of problem in the server, the user will be notified and the problem will be solved as soon as possible.

For the maintenance of the server, the user will be notified no less than a week in advance so the user can make alternative plans. In a normal situation, our software will be available 24 hours a day, 7 days a week.

Security

The main security concern is for user's login. Hence, proper login mechanism will be used to avoid hacking. The registered login id is a way to spam check for increasing the Security. You have to login again after 5 minutes of inactivity. Hence, security is provided from unwanted use of recognition software.

Usability

The website is easy to navigate by modelling current trends of websites.

2.2 Performance Requirements

1. Performance

The system must be interactive and the delays to that interactivity will cease to exist under normal load. So, in every action-response of the system, there are no immediate delays. Response time of the software depends on the speed of the internet. In case of saving all the updations and settings, the delay will be below 2 seconds.

2. Safety

Information transmission should be securely transmitted to the server without any changes in the information.

3. Reliability: As the system provides information easily accessible on the website, it must make sure that the system is reliable in its operations and for securing the sensitive details.

Some other non functional requirements of our software are:

Capacity

The throughput of the system would be 99% and the maximum storage of the software would be 30 MB.

Speed

All the pages on our website load in less than 2 seconds for 99% of customers

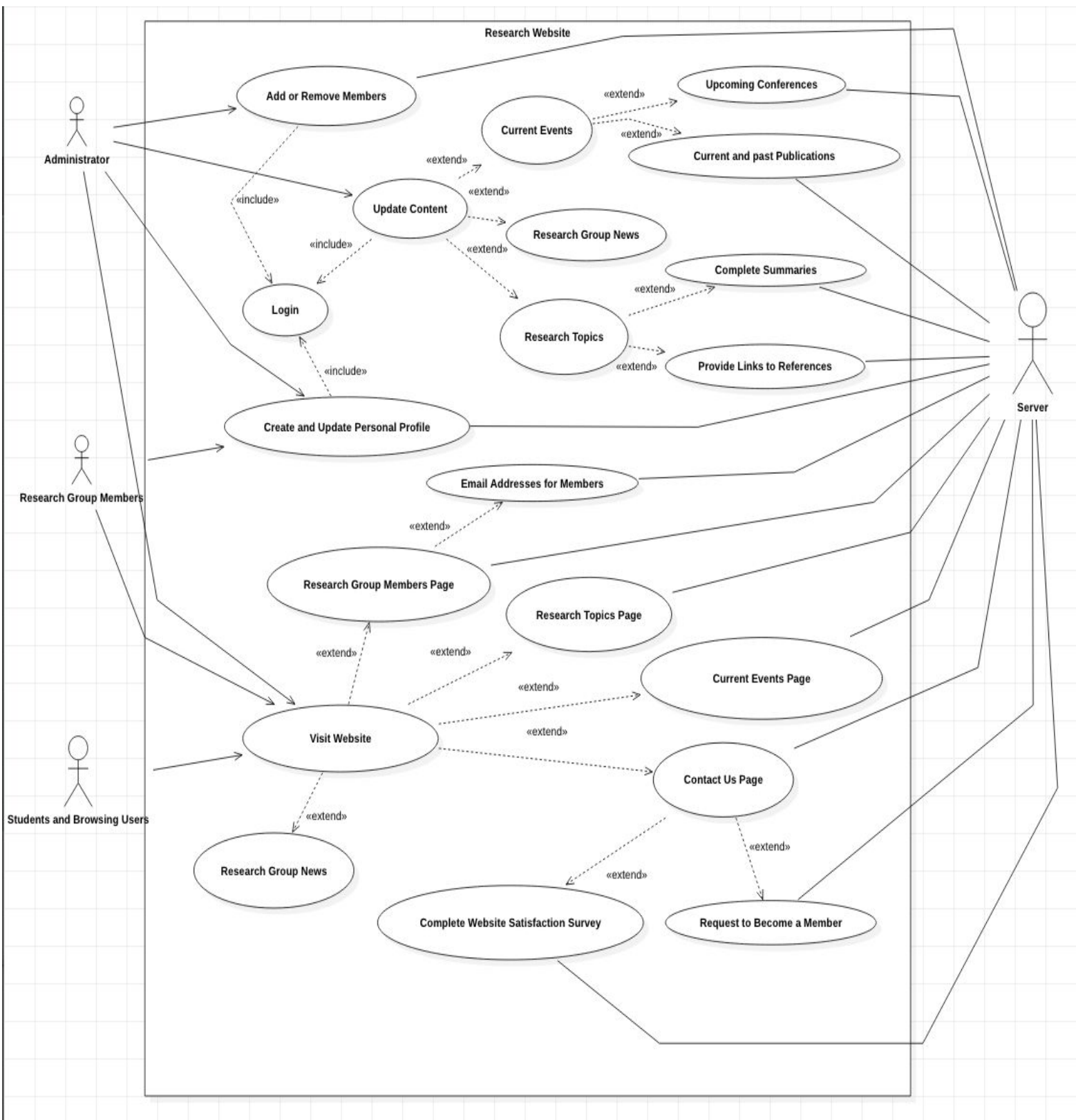
considering their location, bandwidth and latency.

3 Interface

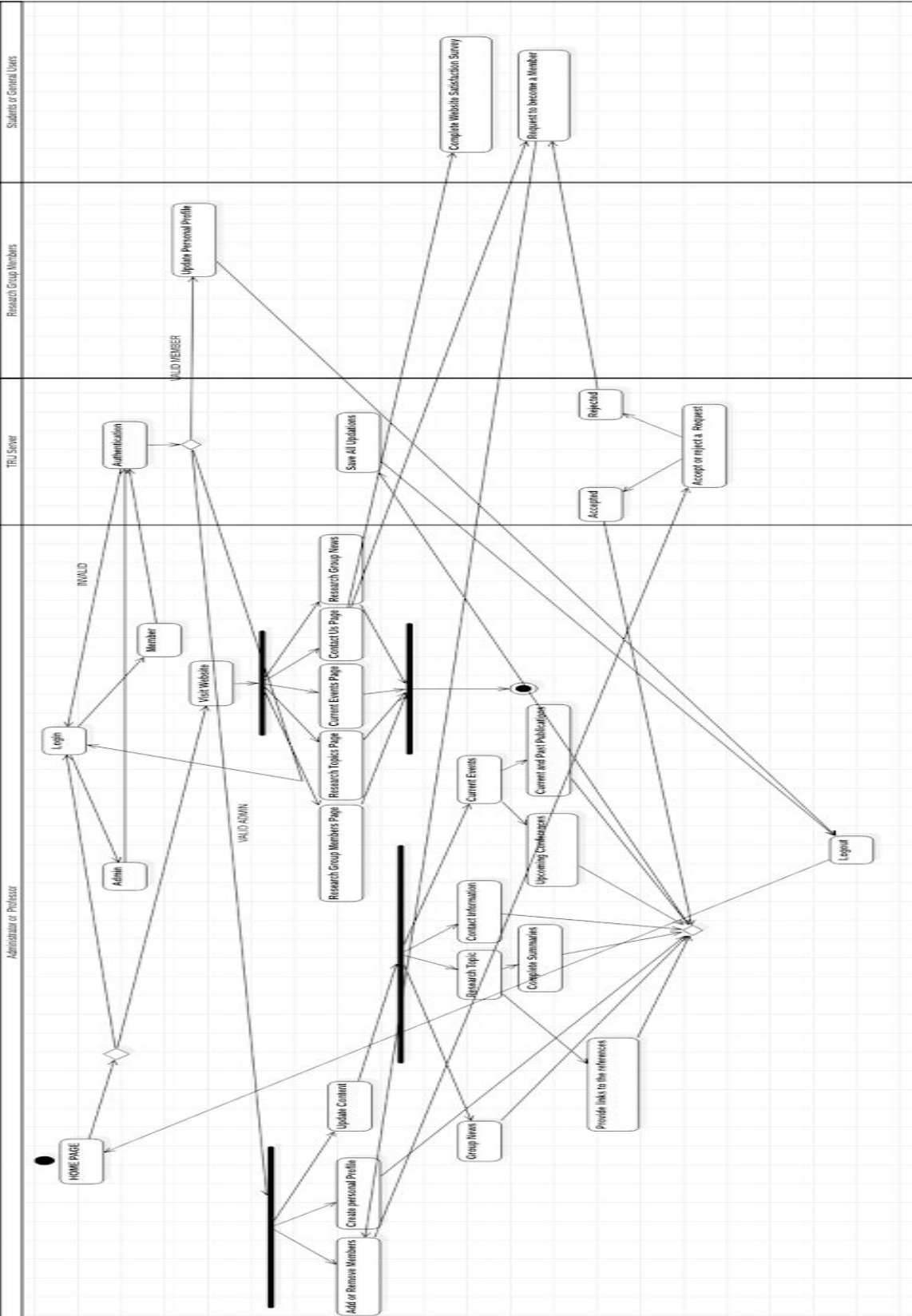
The user interface of this website is made easy to access, understand, and use for different types of users like daily visitors, members, and the admin of the website. Interface elements include following elements but is not limited to:

1. **Cutting edge** web design that provides interactive behaviour for the casual and serious user alike.
2. **Input Controls:** clickable links and buttons, drop down lists, toggles, last-updated date field.
3. **Navigational Components:** sliders, tags, footers, icons.
4. **Informational Components:** pictures, tooltips, icons, notifications, newsletters.
5. **Purposeful Page Layout:** Every page is designed with careful placement of items that helps to draw attention of users to the right place. Important pieces of information is highlighted.
6. **Strategic use** of color and texture to direct or redirect attention towards relatively more important information.

4 Use Case Diagram



4.1 Activity Diagram



5 Software Architecture

We will be adhering to the Iterative and Incremental model as our design implementation will be iterative and ever-increasing in quality. We want our clients to deliver feedback after updates, and with that feedback, provide the client with a product that is more in line with the desired solution.

Objective:

To create a responsive, user-friendly website for the Donkor Research Group.

Risks:

The client has provided guidelines that request a website that is limited in its functionality. This requires our development process to stick to static functionality and ignore some practical features that would create more interactivity. Some features commonly implemented on websites of this nature will be ignored, and so, creates risk that our development team stray from the requested functionality. We will be mindful of this risk by remaining steadfast in following our design plan in order to provide the client with a product that satisfies the client's specifications.

There is a risk that we do not provide the look and feel that the client expects. To combat this risk, we will incrementally expose our client to the current state of the website. This will ensure that we are meeting the client's needs, and subvert any potential for our team to stray from the desired presentation of the website.

Development:

We will develop the website incrementally, beginning with a homepage and a defined theme that will reverberate throughout the website. This home page will be presented to the client for evaluation. Any alterations that the client requests will be made, and then presented again for evaluation. When the client is satisfied we will then carry out development of the main pages: Research Topics, Research Members, Publications and Conferences, and Contact Us. These pages will be presented for approval from the client and following approval we will implement the remaining, more specific pages: Request to Become a Member, Member Profile Pages, and Website Satisfaction Survey. The final product will then be presented to the client for approval. Following approval, we will begin training for the client and his chosen administrators. After training is completed, we will carry out our release plan.

5.1 Release Plan

Since this website is static in nature, the release plan will be simple. When the project is complete, we shall seek approval from the client. Upon approval, we will upload the website.

If, in the future, the client requests more functionality or the client's needs for the website change, we will be open to satisfying the client. The same strategy will be followed in the event of a future change.

5.2 Training Plan

Since the platform of our site is the web, our training will not be extensive. The lead administrator and any administrators he chooses will be provided with a training session regarding updating the content of the website, as well as how to add or remove members, and the general functioning of the website. In order to create a clear understanding of how this is done, an interactive 2 hour session will be carried out with the administrator, and any other administrators he deems necessary.

The interactive session will include a step-by-step tutorial of each of the functionalities of the website. The session will be carried out on two machines. The trainer will operate their own machine and the administrators will operate their own machines. Each step of every process on the website will be performed by the trainer while the administrator watches, then, the administrator will perform the same step on his machine. If the administrator encounters any difficulties, the trainer will be able to provide clarification, and if needed, demonstrate how to overcome the difficulty in real-time. Following the tutorials, the administrators will be able to ask questions and the trainer can provide in depth feedback to create more understanding before the session is over.

Following the training session, the administrators will be provided contact details of the trainer. If any future, unforeseen difficulties arise, the administrators need only call upon the trainer, and additional training can be provided. With this training process, the administrators will be able to take control of their website, and produce the content that they see fit for their website.

6 Domain Analysis: Most of the resources were taken from the original plan of website and our client, Mr. Donkor Kingsley who has given us all the required content and details of this website as his research software. We have searched over the internet to

look for functionality a research website should have and have kept the ground rules that were set by our client. In this process we gathered knowledge from Wikipedia and W-3 schools.