
Software Requirements Specification

For

NUST Connect

Version 1.3

Prepared by **Web & IT Team**

NUST Entrepreneurs Club

Monday, October 24, 2016

Table of Contents

- Table of Contents ii**
- Revision History iii**
- 1. Introduction 4**
 - 1.1 Purpose 4
 - 1.2 Document Conventions 4
 - 1.3 Intended Audience and Reading Suggestions 4
 - 1.4 Product Scope 4
 - 1.5 References 4
- 2. Overall Description 5**
 - 2.1 Product Perspective 5
 - 2.2 Product Functions 5
 - 2.3 User Classes and Characteristics 5
 - 2.4 Operating Environment 5
 - 2.5 Design and Implementation Constraints 5
 - 2.6 User Documentation 6
 - 2.7 Assumptions and Dependencies 6
- 3. External Interface Requirements 7**
 - 3.1 User Interfaces 7
 - 3.2 Hardware Interfaces 8
 - 3.3 Software Interfaces 8
 - 3.4 Communications Interfaces 8
- 4. System Features 9**
 - 4.1 Registration Profile 9
 - 4.2 Profile Page 9
 - 4.3 Search Accounts 9
 - 4.4 Post status updates 10
 - 4.5 Timeline 10
 - 4.6 Newsfeed 10
 - 4.7 Unfollow 10
 - 4.8 Subscribe 11
 - 4.9 Mentorship 11
- 5. Non-Functional Requirements 12**
 - 5.1 Scalability 12
 - 5.2 Performance 12
 - 5.3 Availability 12
 - 5.4 Security 12
 - 5.5 Safety 12
- 6. Other Requirements 12**
- Appendix A: Glossary 13**
- Appendix B: Analysis Models 13**
- Appendix C: To Be Determined List 13**

Revision History

Name	Date	Reason For Changes	Version
Initial version (draft)	16/10/2016	Introduction of initially proposed system	1.0
Refined proposal	18/10/2016	Added system details	1.1
Approval version (from NEC authorities)	19/10/2016	Changed document author	1.2
Detailed version (for approval from NUST authorities)	24/10/2016	Renamed system 'NUST Connect'. Added user interfaces, hardware and software interfaces, and non-functional requirements. Added system feature 'Mentorship'	1.3

1. Introduction

1.1 Purpose

This system, named the NUST Connect is a platform where the whole community of National University of Sciences and Technology can come together and interact with each other. This SRS focuses on the subsystem of NUST Connect system which deals with the student community of the university, and specifies requirements only for the system which will be used by the students.

1.2 Document Conventions

No particular typographical or otherwise conventions are followed in this document. Sections marked TBD have not been completed yet. A list of such sections is available in *Appendix C: To Be Determined List*.¹

The priority of system features and interdependencies between different requirements are not implied by the amount detail provided for system features or by the relative position of requirements in the document respectively. Each system feature and system requirement is to have an associated priority score on the scale of 1 (low) to 10 (high) written next to each feature and requirement.

1.3 Intended Audience and Reading Suggestions

This intended audience of this document includes project managers, system developers, system designers, interface designers, marketing staff, publications staff and documentation writers.

Project managers should use the document to track the progress of the task and to ensure compliance to schedule and functionality requirements. Section **Error! Reference source not found.**, which lists the system features, should be used to maintain a checklist of the system features and to track implementation progress of the system.

System developers should refer to system features and focus on the functional requirements of the system while implementing the system. The analysis models in Appendix B would be useful during the system implementation phase.

System and interface designers should refer to system features and focus on the non-functional requirements while designing the system. System design includes designing database structure, and analysis models of the system. Interface design includes designing user interfaces and graphics for the system.

Marketing and publications staff should read the introductory sections of the document and the introductions of system features to better understand the system and to use the information for marketing purposes and in publications.

Documentation writers should understand the system models and functional and non-functional requirements before documenting each system feature.

1.4 Product Scope

The main purpose of the system is to provide the NUST community with a LinkedIn-like platform which they can use to connect with other people in the university. NUST community is defined as the students, faculty members, administration and organizations operating within NUST.

1.5 References

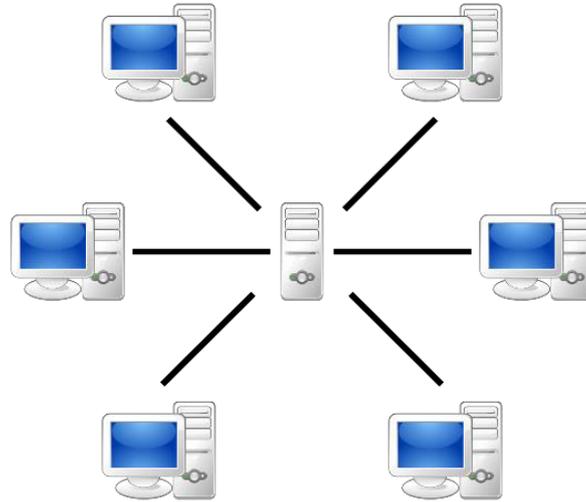
N/A

¹ Project managers, please see Appendix C to see which sections are incomplete and who has to do them.

2. Overall Description

2.1 Product Perspective

NUST Connect is a new self-contained system. This SRS defines only the client-end application which would be used by the application users. This application would communicate with a server side program and database which are not defined in this SRS.



2.2 Product Functions

The major functions to be supported by the system are listed below. Detail of the same could be read in Section 3.

1. Registration portal
2. Profile page
3. Search for other users
4. Browse user accounts
5. Post status updates
6. Timeline
7. Newsfeed
8. Unfollow users
9. Subscribe to users

2.3 User Classes and Characteristics

The particular subsystem of this system covered by this document has only one user class; the students of NUST university. This user class is the most important user class for the whole system. Other user classes, which are not covered by this particular SRS, include the university administration, student bodies, organizations within the university, and faculty members.

2.4 Operating Environment

This system would be developed as a smartphone application targeting the Android and iOS operating systems. The application should be compatible with Android 4.0+ and iOS 9.0+ devices.

The interface should be designed primarily for smartphones but should also be usable with tablet PCs and other devices running Android or iOS operating systems such as emulators or virtual machines.

2.5 Design and Implementation Constraints

MySQL database to be used. The web server to support PHP. The end-system to be developed with native support for Android and iOS platforms.

2.6 User Documentation

User manual in form of in-app help will be provided to make users feel at home with the system.

2.7 Assumptions and Dependencies

N/A

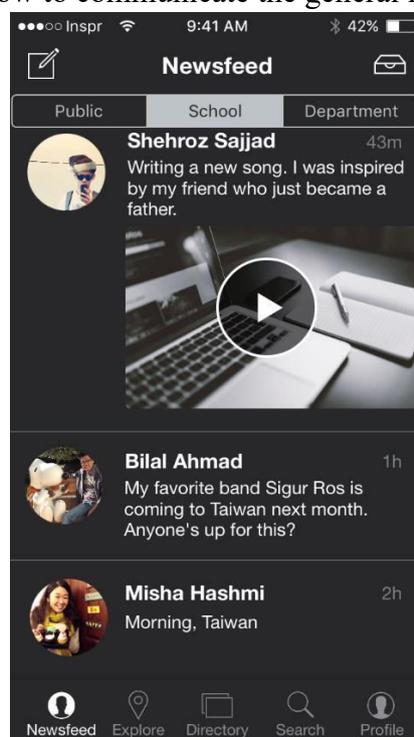
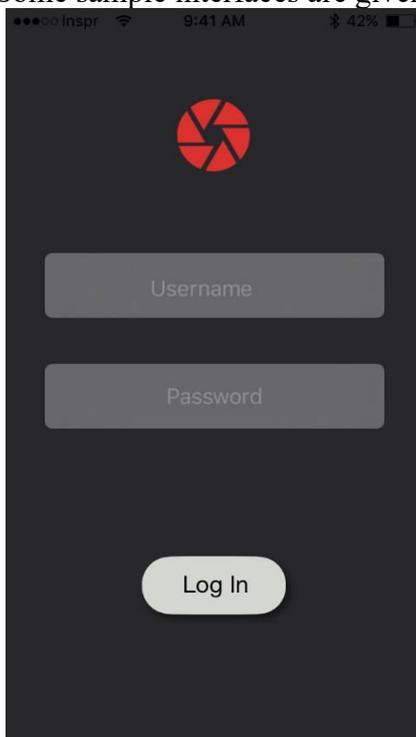
3. External Interface Requirements

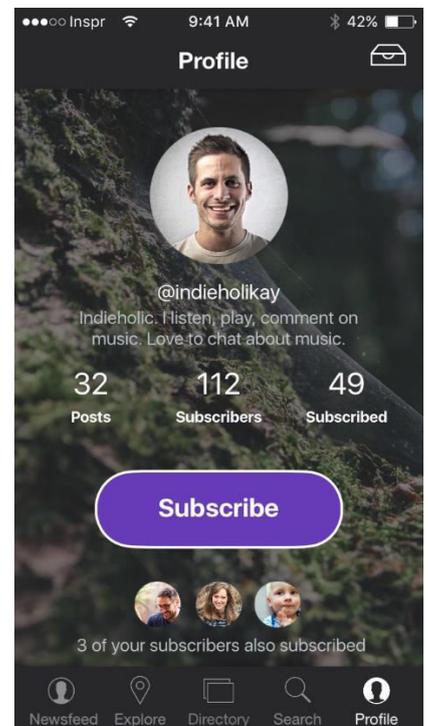
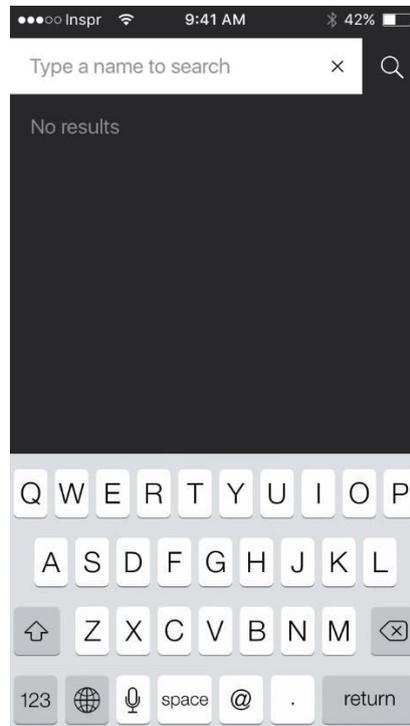
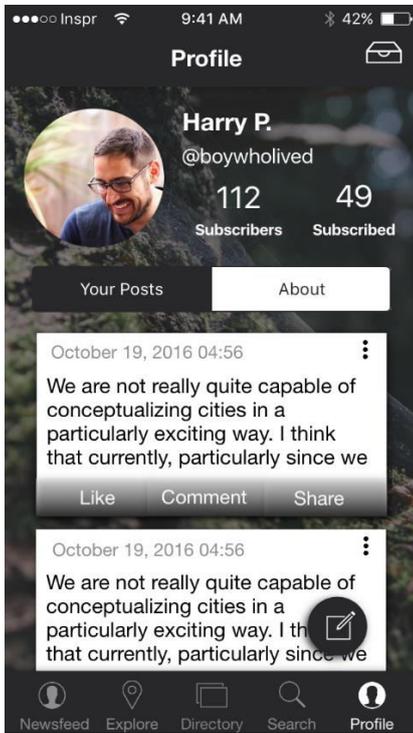
3.1 User Interfaces

The following user interfaces are expected to be developed in the smartphone application:

1. Login
2. Registration
3. Profile Completion
4. Newsfeed
5. Timeline (Your Own)
6. Timeline (Someone Else's)
7. User Profile (View)
8. User Profile (Edit)
9. Post An Update
10. Ask For Mentorship

Some sample interfaces are given below to communicate the general idea of the system.





3.2 Hardware Interfaces

The hardware involved in the system include

- Client devices, which would be smartphones, for example, such as
 - Android
 - iOS
 - Blackberry
 - Nokia Symbian
 - Windows Phone.
- The backend web server which will host an admin panel.
- The database server.

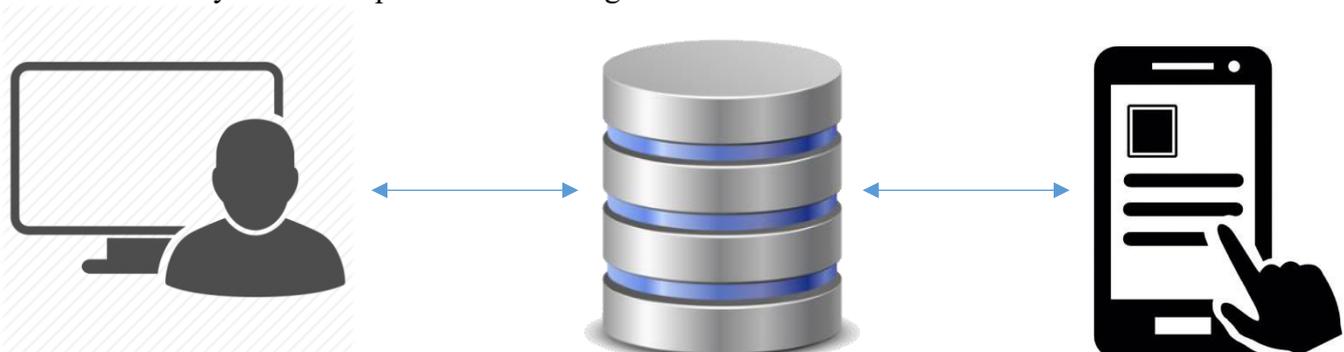
3.3 Software Interfaces

The software systems which include the client-side smartphone application and a server-side program would be separately implemented using a layered architecture. The three main software components in this system are:

1. Smartphone application (to be used by Students)
2. Admin Panel in form of a web application (to be used by System Admin)
3. MySQL database

3.4 Communications Interfaces

The following diagram, modelling the high-level architecture of the system, shows how the communication channels in the system are expected to be arranged.



4. System Features

4.1 Registration Profile

4.1.1 Short Description

Registration Portal is where the new users sign-up for accounts. Only students of NUST would be allowed accounts.

4.1.2 Detailed Description

1. Current students of NUST should be able to register for an account with the system.
2. Users should provide basic information including their name, father's name, registration number, school, department, batch and email address through the registration form.
3. Users would choose a username and a password when registering for the account. These will be used by the user to later access their account.
4. Upon submission of the registration form, a temporary account with a pending approval status would be created for the user.
5. The user would only see a pending approval screen while their account has not yet been approved by the authorities after verification.
6. Upon approval, the user's account would be elevated to confirmed status and made permanent.
7. Upon disapproval, the user's temporary account would be removed and the username reserved for this user would be available for use by other users.
8. User would be informed of the decision about their account approval via email sent to the email address provided in **Error! Reference source not found.** (see above).

4.2 Profile Page

4.2.1 Short Description

Profile Page is the place where other users can see details about a user.

4.2.2 Detailed Description

1. Once the user's account has been approved, the user will be asked to complete his profile with information including a profile photo, phone number, education and work history. Each information will have a visibility control to limit audience.
2. Apart from the profile photo, uploading which would be compulsory, user should be able to skip other details initially and complete them at a later time through the Edit Profile option.
3. Once the profile information has been filled in, the registration process would be complete. The user would now be able to access the actual system.
4. User would be able to view profile of other users, and vice versa.

4.3 Search Accounts

4.3.1 Short Description

The user should be able to search for accounts of other users who are registered with the system.

4.3.2 Detailed Description

1. The user should be able to search for other users registered with the system, either by name or by email address.
2. The user should be able to browse accounts of other registered users by schools, departments or batches.
3. There should be a browse interface which lists all schools, the departments in each school, and the batches.
4. The users should be able to navigate this interface and select and view any user account.

4.4 Post status updates

4.4.1 Short Description

Status updates are textual posts which the user can write on their timelines.

4.4.2 Detailed Description

1. The user should be able to post status updates.
2. The status updates could contain only text or links with previews.
3. Each status update will have a visibility setting with possible values of Department, School, and Public.
 - Department means status update will be visible to other users in the same department as this user.
 - School means status update will be visible to other users in the same school as this user.
 - Public means the status update will be visible to every other user of the system.

4.5 Timeline

4.5.1 Short Description

Each user should have a timeline which contains this user's activity history.

4.5.2 Detailed Description

1. Status updates by the user should appear in the user's timeline.
2. Profile changes by the user should appear in the user's timeline.
3. User's timeline should be viewable by other users.
4. Each post in the timeline should have a visibility setting restricting target audience.

4.6 Newsfeed

4.6.1 Short Description

Each user should have a newsfeed which should show the updates from other users.

4.6.2 Detailed Description

1. Only those status updates will appear in a user's newsfeed which have a target audience (set through the visibility setting) that includes this user.
2. For example, posts shared by User A with visibility 'School' would appear in newsfeeds of people who are also in the same school as User A.

4.7 Unfollow

4.7.1 Short Description

The user should be able to unfollow another user.

4.7.2 Detailed Description

1. There should be an unfollow button on each user's profile.
2. This button should be visible to other users only.
3. The user would be able to unfollow from updates from a particular user.
4. No status updates from unfollowed users would appear in this user's newsfeed.

4.8 Subscribe

4.8.1 Short Description

The user would be able to subscribe for notifications from a particular user. The user would be notified whenever another user they are subscribed to posts a new status update.

4.9 Mentorship

4.9.1 Short Description

This system feature would allow a user to ask another user for help on a particular topic. The discussion topic would be visible to other users, but the two participating users would have control over the visibility of content of the discussion.

4.9.2 Detailed Description

1. A user would be able to ask another user for guidance through the other user's profile page.
2. The requesting user would specify the topic of discussion and a short description while requesting guidance.
3. Optionally, the requesting user would be able to request the discussion to be private.
4. The person who has been asked for guidance (called the Mentor) would be able to either reject or accept the discussion request.
5. If the discussion is private, the topic and initial request message would be visible in the both users' timelines.
6. If the discussion is public, the topic as well as the content of the discussion would be visible in the both users' timelines.
7. Either of the participants of the discussion would have the ability to end the discussion at any time, or report anything said by the other user to the System Admin.

5. Non-Functional Requirements

5.1 Scalability

The system should be designed such that it is highly scalable. Keeping in view the ever growing community of National University of Sciences and Technology, the system should be easily upgradable to support more users and, if need be at a later stage, should allow scaling it up or down for a user base other than community of NUST, such as for the general public.

5.2 Performance

The servers should be able to facilitate user requests and should be designed to deliver full services to the user even when under stress.

5.3 Availability

This requirement is highly important because the client applications depend on the server for communication with each other, and hence it must be ensured that the server application is available 24/7.

5.4 Security

The communication between the clients would be through an intermediary server, and hence the data shared by the users would be travelling over the public channel (i.e. the Internet) and through the server before reaching the receiving user. This functional requirement spawns the security requirement which means that a secure channel of communication must be provided, through implementation of a Secure Communication Layer such as SSL, etc.

5.5 Safety

The data in the database server should be made safe from any kind of physical or digital harm by using regular backups, for example. This requirement basically entails that there should be a mechanism to keep the user data safe, as well as secure.

6. Other Requirements

- The system to be developed in International English language.
- The system to follow the regional privacy laws.

Appendix A: Glossary

This document uses the following acronyms.

<i>ACRONYM</i>	<i>DEFINITION</i>
<i>SRS</i>	System Requirements Specifications
<i>NUST</i>	National University of Sciences and Technology
<i>NEC</i>	NUST Entrepreneur Club
<i>TBD</i>	To be determined
<i>SSL</i>	Secure Socket Layer
<i>HTTP</i>	Hypertext Transfer Protocol
<i>N/A</i>	N/A

This document uses the following technical terms.

<i>TERM</i>	<i>DEFINITION</i>
<i>N/A</i>	N/A

Appendix B: Analysis Models

TBD.

Appendix C: To Be Determined List

The following elements of the system and/or this document are yet to be determined.

1. *Analysis Models (Appendix B) to be designed by the system designers.*