Lab 2 - NGage Prototype Product Specification

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1 Introduction

The lack of student involvement can negatively impact academic performance. Students can get involved by attending events or participating in clubs and organizations and generally being engaged. Students that are not engaged in the campus community may be less likely to seek tutoring help. In 2014 one-third of students dropped out after their first year. (Shapiro, 2014) Team Silver aims to address this issue by helping students find information that will help them achieve academic success and have a positive college experience.

1.1 Purpose

Team Silver is currently developing a web application named NGage. The purpose of NGage is to help students get involved on campus. NGage is a resource for students which provides organized, browsable information gathered from various sources.

The application is primarily intended for students attending Old Dominion University. At ODU 19% of freshman did not return the following year (College Factual). Team Silver would like to help more students have a positive experience attending ODU and increase the freshman retention rate. This application may be especially useful for international students or anyone new to Hampton Roads.

NGage will display information which the user can browse using a menu driven GUI. The main menu features a live feed that can be filtered by category. Information is broken into four main categories: tutoring services, organizations and clubs, houses and apartments, and local dining and entertainment. NGage specifically will not allow users to apply for housing or purchase tickets directly. Users will not be able to set appointments with tutors.
1.2 Scope

The primary objective is to provide students with information that can help them get involved on campus and achieve academic success. The second objective is to help students find safe and affordable living arrangements. NGage also includes fun information such as restaurants, movie theaters, and concert venues to promote an overall positive college experience. By using the NGage web application students will learn about events on campus and could increase participation. NGage is intended to be used as a resource to promote students actively participating in clubs and organizations and making use the tutoring services provided by ODU. Information about the city aims to help students find living arrangements and participate in local culture.

The NGage prototype will not exhibit all features of the final product. To demonstrate the final product the NGage prototype will feature a menu driven GUI which displays information. The prototype will list less information than the final product. The application will focus on its objectives to provide information about clubs, tutors, and rental properties. The live feed will be a functional in the NGage prototype. The web application will be hosted on the ODU server and can be accessed by any compatible device with an Internet browser.
1.3 Definitions, Acronyms, and Abbreviations

Graphical User Interface (GUI): a software interface designed to standardize and simplify the use of computer programs, as by using a mouse to manipulate text and images on a display screen featuring icons, windows, and menus.

Input/output (IO): the communication between an information processing system, such as a computer, and the outside world, possibly a human or another information processing system.

Old Dominion University (ODU): The school Team Silver attends and the application NGage is being developed.

1.4 References


“Interview with Dan Zimmerman” March. 17 2017


Old Dominion University What Outcomes Can You Expect With a Degree From Old Dominion University? (n.d.). Retrieved February 1, 2017, from https://www.collegefactual.com/colleges/old-dominionuniversity/outcomes/
1.5 Overview

This product specification describes the features and capabilities of the NGage prototype and provides the hardware and software configuration. The remaining sections of this document include a detailed description of the hardware, software, and external interface architecture of the NGage prototype. Further detail will be provided about the performance characteristics of features in terms of outputs, displays, and user interaction.

2 General Description

This section provides a description of the architecture and function of the NGage prototype. The Major Functional Components diagram shows the interactions between the individual parts of the web application including where it is stored and how it is accessed. User interaction is achieved through user interfaces. NGage uses menu selection and text input to interface with users.

2.1 Prototype Architecture Description

When the user opens the web application the Live feed window and filter buttons are displayed. Under the live feed window are other menu buttons for browsing. There is a button for each main category, a help button, and a “contact us” button. The user can use the menu buttons and the back button to navigate the information.
The prototype architecture is displayed in Figure 1. NGage is comprised of the following major components:

- **NGage**: The web application itself. The application is accessed through the internet and then runs on computers and mobile devices.

- **Application Server**: This Component hosts the web application. This component provides the NGage software to the client devices.

- **Database Server**: a server which holds the list of registered users and their passwords. This component will allow users to log into NGage and hold associated email addresses.

- **Web enabled device**: a phone, tablet or computer with Internet access and a web browser are required for the user to access and use NGage. This component will display and run the NGage web application and act as the IO device for user input. Users will need access to the Internet through their computer, smart phone, or tablet to use NGage.
2.2 Prototype Functional Description

This section describes the functions provided by the NGage web application. NGage includes the following features:

- **Contact Form**: allows users to type and submit written communication with NGage Administrators

- **Menu driven interface**: This function provides the capability for the user to navigate information within the application. Labeled buttons are clicked or touched to access the data or a sub menu.

- **Live feed**: The main menu of the Prototype displays a list of events and updates listed chronologically. New content appears at the top of the feed.

- **Help Button**: The help button will display information as a quick reference user manual for navigating the prototype.

- **Contact Us button**: The user is given a digital form to fill out and submit. The user may submit up to 500 words. The form features check boxes to select the reason for contact.

2.3 External Interfaces

This section identifies the physical and logical interfaces relative to the prototype. Hardware interfaces implemented into the prototype are physical components necessary for NGage to function. Software interfaces within NGage are used to access and manipulate database content. NGage makes use of Hypertext Transfer Protocol over Transport Layer Security.
2.3.1 Hardware Interfaces

Database Server: The prototype stores user registration in the User Identification Database (UID). Usernames and encrypted passwords are stored in the database. The database is accessed to authenticate user logins or manage user accounts. User accounts may be added or removed.

2.3.2 Software Interfaces

User Identification Database (UID) Interface: The UID is an Oracle database accessed via MySQL query from NGage to the user database. PHP will be used to interface JavaScript with the UID. User ID and encrypted password are stored in and retrieved from the UID.

2.3.3 User Interfaces

Button Selection: Mouse clicks and touch screen pressing will provide the basic user interaction. The user can navigate menu by pushing or clicking menu buttons.

Keyboard: The user will also interact with NGage using either an on screen or physical keyboard to input text used in the contact form submission. The contact form will be the way for users to leave comments for houses, submit additional information for club and organization listings, report issues, and request email notifications.

2.3.4 Communication Protocols and Interfaces

HTTP over SSL: HTTPS is a secure Internet connection for transferring data to the user machines.