**Project Requirements**

**NASA EVA Gamification**

*Group 3*

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Table of Contents

[Introduction 3](#_Toc510294152)

[Purpose of this Document 3](#_Toc510294153)

[Specific Terms and Acronyms 3](#_Toc510294154)

[User Roles 3](#_Toc510294155)

[Assumptions 3](#_Toc510294156)

[Constraints 4](#_Toc510294157)

[Dependencies 4](#_Toc510294158)

[Requirements 4](#_Toc510294159)

[Business Requirements 4](#_Toc510294160)

[Functional Requirements 5](#_Toc510294161)

[Non-Functional Requirements 7](#_Toc510294162)

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| **Version Number** | **Description of Change** | **Author** | **Date** |
| 1.0 | Initial Creation of Document | Victoria Guadagno | 03/11/2018 |
| 1.1 | Adjusted requirements per Milestone 2 feedback | Victoria Guadagno | 03/25/2018 |
| 1.2 | Added Montrell to title page | Michael Salgo | 03/27/2018 |

# Introduction

## Purpose of this Document

This document contains all of the requirements for the SWEN 670 (Software Engineering Project Spring Semester 2018 NASA EVA Gamification Project. Some requirements have been identified within this document that will not be implemented until future semesters. These future requirements will be included in this document but will be clearly marked as future requirements.

Note that once a requirement is defined and assigned an ID, the ID will not be changed, even if it is moved to a different section. Additionally, requirements will not be renumbered if a requirement is deleted.

## Specific Terms and Acronyms

|  |  |
| --- | --- |
| **Term/Acronym** | **Description** |
| Gamification | The application of game-design elements and game principles in non-game contexts |
| Rewards | Includes extrinsic rewards such as points, achievement badges or levels, the filling of a progress bar, or providing the user with virtual currency and intrinsic rewards such as meaning, freedom of choice, development of competence, and a progression over time (which may have more lasting effects than extrinsic rewards) |
| Game | Any activity that can be quantified and tracked (for example, verifying a user name, editing 100 pages) |

## User Roles

|  |  |
| --- | --- |
| **Role** | **Description of Role and Activities Performed** |
| Administrator | Responsible for naming and maintaining games  -Create names for badges  -Define ranks for each badge  -Select images for each badge |
| End User | Participate in games View badges |

## Assumptions

|  |  |  |
| --- | --- | --- |
| **ID** | **Assumption** | **Related To** |
| A1 | The project will continue to be available to Dr. Brown for future semesters to work on | Availability |
| A2 | Dr. Brown will continue to allow future semesters to work on this project | Availability |

## Constraints

|  |  |  |
| --- | --- | --- |
| **ID** | **Constraints** | **Related To** |
| C1 | The short time period of a semester will force the requirements to be broken out into multiple semesters | Availability |
| C2 | The project team cannot view NASA’s EVA wiki (though public MediaWiki wikis are available, as seen on <https://www.mediawiki.org/wiki/Sites_using_MediaWiki/en>, or self-hosted MediaWiki wikis that the team configures) | Availability |

## Dependencies

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| --- | --- | --- |
| **ID** | **Dependency** | **Related To** |
| D1 | Pre-existing documentation to expedite progress | Efficiency |

# Requirements

## Business Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Semester** | **Requirement** | **Source of Requirement** |
| B1 | Spring 2018 | Allow for the wiki system administrator(s) to configure variables via a configurable PHP File | <https://github.com/darenwelsh/Profiler> |
| B2 | Future | Build an extension that provides a consolidated infrastructure allowing for adding different elements and approaches to gamification | <https://learn.umuc.edu/d2l/le/content/287871/viewContent/11764296/View> |
| B4 | Future | Support many different personality types in a unified system | <https://learn.umuc.edu/d2l/le/content/287871/viewContent/11764296/View> |
| B5 | Future | System should be scalable to allow for other personality types, for example socialites and explorers | <https://learn.umuc.edu/d2l/le/content/287871/viewContent/11764296/View> |
| B6 | Future | Clear documentation should be created documenting how to install, configure and use the extension; it should include screenshots and animated GIFs | <https://github.com/darenwelsh/Profiler> |
| B7 | Future | Design and build an extension to make use of real-time events through the use of hooks for immediate feedback while also making use of the entire history of the wiki | <https://github.com/darenwelsh/Profiler> |
| B8 | Future | User Profile should analyze text added in revisions by person over time and compare users with similarly used words who may share common backgrounds, job roles, or interests | <https://github.com/darenwelsh/Profiler> |

## Functional Requirements

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| **ID** | **Semester** | **Requirement** | **Source of Requirement** |
| F7 | Spring 2018 | Be able to instantly update score as activities are done | Daren Welsh |
| F8 | Spring 2018 | Include Badges | Daren Welsh |
| F9 | Spring 2018 | Include Once-And-Done Games | Daren Welsh |
| F10 | Spring 2018 | User Profile will display all badges earned | Daren Welsh |
| F11 | Spring 2018 | User Profile will display user name | Daren Welsh |
| F12 | Spring 2018 | User Profile will display full name | Daren Welsh |
| F13 | Spring 2018 | User will get a badge for verifying his/her user name | Spring 2018 Team |
| F14 | Future | Make games scalable | Daren Welsh |
| F15 | Future | Front-end code can be in JavaScript | <https://github.com/darenwelsh/Profiler> |
| F16 | Future | User Profile should display date of first page viewed | <https://github.com/darenwelsh/Profiler> |
| F17 | Future | User Profile should calculate the number of days being a viewer | <https://github.com/darenwelsh/Profiler> |
| F18 | Future | User Profile should display unique pages viewed ever | <https://github.com/darenwelsh/Profiler> |
| F19 | Future | User Profile should display unique pages viewed over a specified period of time | <https://github.com/darenwelsh/Profiler> |
| F20 | Future | User Profile should display the number of unique pages revised ever | <https://github.com/darenwelsh/Profiler> |
| F21 | Future | User Profile should display the number of unique pages revised over a specified period of time | <https://github.com/darenwelsh/Profiler> |
| F22 | Future | User Profile should display a list of categories of pages revised in descending order by percentage of pages in that category that the user has revised | <https://github.com/darenwelsh/Profiler> |
| F23 | Future | User Profile should display a list of friends/colleagues based upon categories of pages that both users heavily contribute to, in descending order | <https://github.com/darenwelsh/Profiler> |
| F24 | Future | User Profile should display the Page Diversity Percentage - defined as percentage of all pages the user has edited - over all time and over a specified period of time | <https://github.com/darenwelsh/Profiler> |
| F25 | Future | User Profile should display the Category Diversity Percentage - defined as percentage of all categories the user has edited - over all time and over a specified period of time | <https://github.com/darenwelsh/Profiler> |
| F26 | Future | User Profile should determine colleagues by similar technical content based on similarities in words used | <https://github.com/darenwelsh/Profiler> |
| F27 | Future | User Profile should display a graph displaying revisions over time in one color and discussion page revisions in another color | <https://github.com/darenwelsh/Profiler> |
| F28 | Future | User Profile should display a GitHub-like contribution visualization showing how much a user contributes each day | <https://github.com/darenwelsh/Profiler> |
| F29 | Future | User Profile should display streaks (for example, how many days in a row has the user contributed?) | <https://github.com/darenwelsh/Profiler> |
| F30 | Future | User Profile should display the pages that the current user has edited that others view the most | <https://github.com/darenwelsh/Profiler> |
| F31 | Future | User Profile should display the User's score-view ratio - current value and plot over time which would be used to see the number of pages viewed versus which pages were edited | <https://github.com/darenwelsh/Profiler> |
| F32 | Future | User Profile should plot user activity and average activity over time with standard deviation (box plot over time) which would track a user’s revisions over time as compared to the average contribution for the wiki | <https://github.com/darenwelsh/Profiler> |
| F33 | Future | User Profile should display the date of first revision | <https://github.com/darenwelsh/Profiler> |
| F34 | Future | User Profile should calculate the number of days being a contributor | <https://github.com/darenwelsh/Profiler> |
| F35 | Future | User Profile should display the number of unique page view per day | <https://github.com/darenwelsh/Profiler> |
| F36 | Future | User Profile should display the number of recent revisions to pages | <https://github.com/darenwelsh/Profiler> |
| F37 | Future | User Profile should display the number of thanks by other users | <https://github.com/darenwelsh/Profiler> |
| F38 | Future | User Profile should display type cast which designates revising size frequency (large edits versus small edits), number of pages revised, grammar correctors, source documentation citers – breaking these behaviors out can allow for user comparison/grouping | <https://github.com/darenwelsh/Profiler> |
| F39 | Future | Be able to show page contributor diversity over time on every page - plot showing how many people have contributed to the page as a function of time | <https://github.com/darenwelsh/Profiler> |
| F40 | Future | Be able to show Next Page to revise suggestions on every page to provide calculated pages that the user may wish to revise based on historical information | <https://github.com/darenwelsh/Profiler> |
| F41 | Future | Be able to show the history page revisions on every page | <https://github.com/darenwelsh/Profiler> |
| F42 | Future | Be able to show the history of viewer count on every page | <https://github.com/darenwelsh/Profiler> |
| F43 | Future | Be able to show the history of user diversity count on every page | <https://github.com/darenwelsh/Profiler> |
| F44 | Future | Be able to get points for activities done before extension is installed | Daren Welsh |
| F45 | Future | Include collaborative games | Daren Welsh |
| F46 | Future | Include competitive games | Daren Welsh |
| F47 | Future | Include point-based games | Daren Welsh |
| F48 | Future | Include Leader Boards | Daren Welsh |

## Non-Functional Requirements

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| **ID** | **Semester** | **Requirement** | **Source of Requirement** |
| B3 | Future | All work should be contained in a single extension | <https://learn.umuc.edu/d2l/le/content/287871/viewContent/11764296/View> |
| F1 | Spring 2018 | All code should be open source | <https://learn.umuc.edu/d2l/le/content/287871/viewContent/11764296/View> |
| F2 | Spring 2018 | All back-end code should be PHP | <https://github.com/darenwelsh/Profiler> |
| F3 | Spring 2018 | Database should be MariaDB/MySQL | <https://github.com/darenwelsh/Profiler> |
| F4 | Spring 2018 | A database should be used to track metadata and calculate metrics | <https://github.com/darenwelsh/Profiler> |
| F5 | Spring 2018 | All events and hooks used should be clearly documented | <https://github.com/darenwelsh/Profiler> |
| F6 | Spring 2018 | All code is stored in GitHub | Daren Welsh |