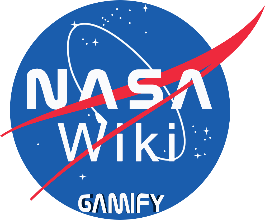
**NASA EVA**

**Gamification**

**P R O J E C T R E Q U I R E M E N T S**

**D O C U M E N T**

**PHASE II**



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**Table of Contents**

[Revision Table 1](#_Toc518220045)

[Introduction 2](#_Toc518220046)

[Purpose of this Document 2](#_Toc518220047)

[Specific Terms and Acronyms 2](#_Toc518220048)

[Assumptions 2](#_Toc518220049)

[Constraints 3](#_Toc518220050)

[Dependencies 3](#_Toc518220051)

[Requirements 3](#_Toc518220052)

[Regulatory Requirements 3](#_Toc518220053)

[User Requirements 3](#_Toc518220054)

[Business Requirements 4](#_Toc518220055)

[Functional Requirements 4](#_Toc518220056)

[Technical Requirements 7](#_Toc518220057)

[Non-Functional Requirements 8](#_Toc518220058)

# Revision Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Version #** | **Change Description** | **Author** | **Date** |
| 1.0 | Initial Release | Charles Milk | 7/1/18 |
|  |  |  |  |
|  |  |  |  |

# 

# Introduction

## Purpose of this Document

This document contains the requirements for the Phase 1 and Phase 2 iterations of the NASA EVA Wiki Gamify project. Phase 1 of this project was undertaken in the Summer 2018 term of the UMUC SWEN-670 class. As the requirements for this phase are still applicable to Phase 2, they have been directly incorporated into this document and noted as “1” in the Phase column of the tables below. The requirements relating to Phase 2, which was undertaken in the Summer 2018 semester, will be noted as “2” in the same column. Requirements to be incorporated by a future class have been noted as “Future” in the Phase column. Based on the document “Project Management Skills for All Careers”, 3 new requirements categories were added and certain existing requirements were re-allocated accordingly. New requirements were also added based on the input gained from requirements solicitation conversations with the customer liaison, Daren Welsh.

## Specific Terms and Acronyms

Requirement prefixes were assigned to identify the particular category to which the requirement belongs as shown in the table below:

|  |  |
| --- | --- |
| Requirement Type | Prefix |
| Regulatory | R |
| User | U |
| Business | B |
| Functional | F |
| Technical - Profile | T-PR |
| Technical - Database | T-DB |
| Technical - Point Allocation | T-PA |
| Technical - Leader Board | T-LB |
| Technical - Badges | T-BG |
| Non Functional | NF |

## Assumptions

The assumptions for this phase of the project are identical to those made for Phase one and are reproduced here:

* The project will continue to be available to Dr. Brown for future semesters to work on
* Dr. Brown will continue to allow future semesters to work on this project

## Constraints

The constraints for this phase of the project are identical to those made for Phase one and are reproduced here:

* The short time period of a semester will force the requirements to be broken out into multiple semesters
* 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)

## Dependencies

The Dependencies for this phase of the project are identical to those made for Phase one and are reproduced here:

* Pre-existing documentation to expedite progress

# Requirements

## Regulatory Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Phase** | **Requirement** | **Source of Requirement** |
| R1 | 2 | All work must be completed by August 12, 2018 | Dr. Michael Brown |
| R2 | 2 | All work should be contained in a single extension | Daren Welsh |
| R3 | 1 | All code should be open source | Daren Welsh |
| R4 | 1 | All back-end code should be PHP | <https://github.com/darenwelsh/Profiler> |
| R5 | 1 | Relational database should be MariaDB/MySQL | <https://github.com/darenwelsh/Profiler> |
| R6 | 1 | Support for PostgreSQL, SQLite and others should be provided. | <https://github.com/darenwelsh/Profiler> |
| R7 | 1 | All code is stored in GitHub | Daren Welsh |

## User Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Phase** | **Requirement** | **Source of Requirement** |
| U1 | 1 | Build an extension that provides a consolidated infrastructure allowing for adding different elements and approaches to gamification. | Daren Welsh |
| U2 | 2 | Support many different personality types in a unified system | Daren Welsh |
| U3 | 2 | System should be scalable to allow for other personality types, for example socialites and explorers | Daren Welsh |
| U4 | 2 | Include point based games | Daren Welsh |
| U5 | 2 | Include Leaderboards | Daren Welsh |
| U6 | 2 | Include Badges | Daren Welsh |
| U7 | 1 | Include Once-And-Done Games | Daren Welsh |
| U8 | Future | Make games scalable | Daren Welsh |
| U9 | Future | Front-end code can be in JavaScript | <https://github.com/darenwelsh/Profiler> |

## Business Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Phase** | **Requirement** | **Source of Requirement** |
| B1 | 2 | The NASA EVA wiki must be the best, most reliable knowledge base available for astronauts and those who support them. | Daren Welsh |
| B2 | 2 | Increase the overall number of people viewing and contributing to the NASA EVA wiki. | Daren Welsh |
| B4 | 2 | Increase user awareness of why their contributions are important (revisions, discussion, pending reviews). | Daren Welsh |
| B5 | 2 | This extension should work with any MediaWiki installation. | Daren Welsh |
| B6 | 2 | The NASA EVA Wiki should be a reliable and trustworthy knowledge base which will enable the users to know how to do their jobs. For the astronauts, this means knowing how to manipulate hardware within limits. For the instructors, this means knowing how to properly teach the astronauts. | Daren Welsh |

## Functional Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Phase** | **Requirement** | **Source of Requirement** |
| F1 | 1 | Be able to instantly update score as activities are done | Daren Welsh |
| F2 | 2 | A user will progress through different badge levels by earning a configurable amount of points | Summer 2018 Team |
| F3 | 2 | A user will earn badges in the following order: Bronze Silver  Gold  Platinum | Summer 2018 Team |
| F4 | 2 | On navigating to the user’s profile page, a leaderboard is displayed containing data related to the user’s activity on the wiki and the user’s status related to other users of the wiki | Summer 2018 Team |
| F5 | 2 | The user will be able to display the name of the pages the user has created. | Summer 2018 Team |
| F6 | 1 | User Profile will display all badges earned | Daren Welsh |
| F7 | 1 | User Profile will display user name | Daren Welsh |
| F8 | 1 | User Profile will display full name | Daren Welsh |
| F9 | 1 | User will get a badge for verifying his/her user name | Spring 2018 Team |
| F10 | 2 | A user will be given points for creating a new wiki page | Summer 2018 Team |
| F11 | 2 | A user will be given points for editing an existing wiki page | Summer 2018 Team |
| F12 | Future | User Profile should display date of first page viewed | <https://github.com/darenwelsh/Profiler> |
| F13 | Future | User Profile should calculate the number of days being a viewer | <https://github.com/darenwelsh/Profiler> |
| F14 | Future | User Profile should display unique pages viewed ever | <https://github.com/darenwelsh/Profiler> |
| F15 | Future | User Profile should display unique pages viewed over a specified period of time | <https://github.com/darenwelsh/Profiler> |
| F16 | Future | User Profile should display the number of unique pages revised ever | <https://github.com/darenwelsh/Profiler> |
| F17 | Future | User Profile should display the number of unique pages revised over a specified period of time | <https://github.com/darenwelsh/Profiler> |
| F18 | 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> |
| F19 | 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> |
| F20 | 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> |
| F21 | 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> |
| F22 | Future | User Profile should determine colleagues by similar technical content based on similarities in words used | <https://github.com/darenwelsh/Profiler> |
| F23 | 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> |
| F24 | Future | User Profile should display a GitHub-like contribution visualization showing how much a user contributes each day | <https://github.com/darenwelsh/Profiler> |
| F25 | Future | User Profile should display streaks (for example, how many days in a row has the user contributed?) | <https://github.com/darenwelsh/Profiler> |
| F26 | Future | User Profile should display the pages that the current user has edited that others view the most | <https://github.com/darenwelsh/Profiler> |
| F27 | 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> |
| F28 | 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> |
| F29 | Future | User Profile should display the date of first revision | <https://github.com/darenwelsh/Profiler> |
| F30 | Future | User Profile should calculate the number of days being a contributor | <https://github.com/darenwelsh/Profiler> |
| F31 | Future | User Profile should display the number of unique page view per day | <https://github.com/darenwelsh/Profiler> |
| F32 | Future | User Profile should display the number of recent revisions to pages | <https://github.com/darenwelsh/Profiler> |
| F33 | Future | User Profile should display the number of thanks by other users | <https://github.com/darenwelsh/Profiler> |
| F34 | 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> |
| F35 | 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> |
| F36 | 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> |
| F37 | Future | Be able to show the history page revisions on every page | <https://github.com/darenwelsh/Profiler> |
| F38 | Future | Be able to show the history of viewer count on every page | <https://github.com/darenwelsh/Profiler> |
| F39 | Future | Be able to show the history of user diversity count on every page | <https://github.com/darenwelsh/Profiler> |
| F40 | Future | Be able to get points for activities done before extension is installed | Daren Welsh |
| F41 | Future | Include collaborative games | Daren Welsh |
| F42 | Future | Include competitive games | Daren Welsh |
| F43 | 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> |
| F44 | 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> |
| F45 | 1 | A database should be used to track metadata and calculate metrics | <https://github.com/darenwelsh/Profiler> |

## Technical Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Phase** | **Requirement** | **Source of Requirement** |
| T-PA1 | 2 | Users shall earn 100 points when a page is created | Summer 2018 Team |
| T-PA2 | 2 | Users shall earn 50 points when a page is edited | Summer 2018 Team |
| T-BG1 | 2 | User with 50 total points shall earn a bronze badge | Summer 2018 Team |
| T-BG2 | 2 | User with 100 total points shall earn a silver badge | Summer 2018 Team |
| T-BG3 | 2 | User with 200 total points shall earn a gold badge | Summer 2018 Team |
| T-BG4 | 2 | User with 500 total points shall earn a platinum badge | Summer 2018 Team |
| T-BG5 | 2 | Badges shall be displayed on top of the user’s profile page in a tabular form with the earned badge images | Summer 2018 Team |
| T-LB1 | 2 | Add count, edit count, points earned, and the user’s position among others will be displayed in leaderboard | Summer 2018 Team |
| T-LB2 | 2 | Other users with 100 points more or less than the current user will be displayed in the leaderboard | Summer 2018 Team |
| T-LB3 | 2 | Users shall be able to click on the edit count to view the name of the pages created | Summer 2018 Team |
| T-LB4 | 2 | Leaderboard will only be visible in user profile page | Summer 2018 Team |

## Non-Functional Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Phase** | **Requirement** | **Source of Requirement** |
| NF1 | 1 | Allow for the wiki system administrator(s) to configure variables via a configurable PHP File | <https://github.com/darenwelsh/Profiler> |
| NF2 | 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> |
| NF3 | 1 | All events and hooks used should be clearly documented | <https://github.com/darenwelsh/Profiler> |