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Signatory Page

This document accepted by:

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Signature (Calvin Caldwell) Date

This document submitted by:

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Table of Contents

[1. Introduction 6](#_Toc70718270)

[1.1. Purpose 6](#_Toc70718271)

[1.2. Scope 6](#_Toc70718272)

[1.3. Intended Audience 6](#_Toc70718273)

[2. Project Management 7](#_Toc70718274)

[2.1. Change Management Procedure 7](#_Toc70718275)

[2.1.1. CAT Team 7](#_Toc70718276)

[2.1.2. Medium 7](#_Toc70718277)

[2.1.3. Protocol 7](#_Toc70718278)

[2.1.4. Impact Analysis 7](#_Toc70718279)

[2.1.5. Archive 7](#_Toc70718280)

[2.2. Software Delivery 7](#_Toc70718281)

[2.3. Installation 7](#_Toc70718282)

[2.4. Acceptance Criteria 7](#_Toc70718283)

[2.5. Documentation and Online Help 8](#_Toc70718284)

[2.6. Project Risks 8](#_Toc70718285)

[2.7. Customer Responsibilities 8](#_Toc70718286)

[2.8. Status Reporting 8](#_Toc70718287)

[3. System General Description 9](#_Toc70718288)

[3.1. Project Summary 9](#_Toc70718289)

[3.2. Relation of System to Existing Systems 9](#_Toc70718290)

[3.3. Hardware Platform Description 9](#_Toc70718291)

[3.4. Software Platform Description 10](#_Toc70718292)

[3.5. Third Party Libraries 10](#_Toc70718293)

[4. Product Requirements 11](#_Toc70718294)

[4.1. Functional 11](#_Toc70718295)

[4.2. Performance 12](#_Toc70718296)

[4.3. Data Transfer Description 12](#_Toc70718297)

[4.4. Security/Safety/Constraints 12](#_Toc70718298)

[5. User Profiles 13](#_Toc70718299)

[6. Glossary 14](#_Toc70718300)

[7. Appendices 15](#_Toc70718301)

1. Introduction
   1. Purpose

The purpose for this document is to present a design and implementation strategy for Taskbar Resources. The rest of the document is responsible for defining the documents format and the proposed project design. Once accepted, this proposal document will exist to guide the implementation and development of the project.

* 1. Scope

Information about project management, system descriptions, requirements, and discussions about user profiles are discussed in this document. Items not discussed include the billable rate, work estimate, and other resource/financial information.

* 1. Intended Audience

This document is for Calvin Caldwell and other unlisted entities that are interested in the project.

1. Project Management
   1. Change Management Procedure
      1. CAT Team

Any changes that are made to the project during development will be reviewed by the Change Acceptance Team (CAT). This team will consist of Morgan Anderson and Calvin Caldwell. Any changes will be reviewed by the team and a decision about whether to accept or reject the changes will be made with reasoning for the decision. Any changes will be logged to this document.

* + 1. Medium

All changes will be submitted by a member of the CAT Team and will conform to the change request form (Appendix).

* + 1. Protocol

Any change requests ill be processed and determined within 7 days of the submission. Once accepted, the CAT Team will inform the requestor of the decision to move forward or reject the request per email communication.

* + 1. Impact Analysis

Each request for changes will be reviewed for impacts on the timeline of the project. If a requested change is likely to have significant impacts on the project timeline, it will likely be rejected while disregarding any other factors.

* + 1. Archive

All change requests will be logged for reference and will be logged on Google Drive. Archived change submissions will be available when requested to Morgan Anderson.

* 1. Software Delivery

The completed software will be distributed to Calvin Caldwell by the end of winter term. Delivery will include a link to the downloadable application from the development website, which will include written documentation for using and modifying the application settings.

* 1. Installation

Installation will consist of an installation package download from the development website. The user will install the package once downloaded.

* 1. Acceptance Criteria

Acceptance criteria will be determined by Calvin Caldwell based on the functionality and completeness of the project.

* 1. Documentation and Online Help

Documentation about the operation of the program will be created on the development website. This documentation will detail how to use the configuration options.

* 1. Project Risks

Project risks for this project are most likely going to be a result of time constraints. These time constraints primarily include the research of applicable 3rd party libraries.

* 1. Customer Responsibilities

The consumers will be responsible for providing the computer and operating system that adheres to the system requirements.

* 1. Status Reporting

Status reports will be sent by Morgan Anderson to Calvin Caldwell weekly on a day agreed upon by all members of the CAT Team. The status report will include a list of work which has moved to complete from the previous week. The status report will also include work which is scheduled to be worked on in the upcoming week(s). Any issues encountered will also be reported with suggestions for resolving the issues.

1. System General Description
   1. Project Summary

For my senior project, I would like to create a toolbar for the task bar on Windows 10 that displays the resource usage of the system. The resources able to be measured includes CPU usage, CPU temperature, RAM usage, Disk read/write, network upstream/downstream, GPU usage, and GPU temperature. The user will be able to add this toolbar to their taskbar and customize it.

Left clicking the toolbar area will open task manager to allow you to see what programs are using the most resources. Right clicking the toolbar area will open the settings page for the program. The settings page for the program will have 4 tabs, general settings, layout, history, and about. This toolbar can be added or removed by right clicking the taskbar and checking or unchecking the toolbar under the toolbar dropdown menu.

The general settings page will give the user settings which include color schemes, startup options, and managing saved settings. Users will be able to save their settings as a preset and switch between them as they would like by loading them from a save file. This is the page they will open to by default when starting the program or right clicking the toolbar.

The layout page will allow the user to fully customize the look and layout of each system resource. The customization options will include font modifications, refresh rate, prefix/suffix/title text, and units. There will also be options for choosing which driver to get the resource information from if multiple of the same type are installed on the computer.

The history page will allow the user to see the recorded history of their resource usage. Usage history will be stored in a database and displayed when on the history tab. The user will be able to choose how often the resource usage values are recorded to the database. The user will also be able to export this history as an excel spreadsheet.

The about page will give the user the standard version and contact information and an option to check for updates. Clicking the developer email will open a new email prompt. Check for updates will call the development server and query if there are any new updates to be downloaded and installed.

* 1. Relation of System to Existing Systems

This project is very similar to an existing software called XMeters.

* 1. Hardware Platform Description

Windows PC:

\*CPU: Intel I3 3rd Gen or better

\* RAM: 4 GB or better

\* GPU: Intel 400 series or better

* 1. Software Platform Description

Windows PC:

\* OS: Windows 10 20H2 or later

* 1. Third Party Libraries

Third party libraries will include those provided by Microsoft for creating taskbar applications.

1. Product Requirements
   1. Functional

**General:**

1. Users will download the installation package from the website the software is available on. Users will then install the application on their computer.
2. Users will be able to toggle if the taskbar program runs on startup. By default, it is set to run on startup when enabled on the taskbar.
3. Users will be able to open the configuration application by selecting the program icon from the desktop/start menu or right clicking on the taskbar display.

**Settings Application:**

1. Users will have access to a general settings page in the settings application.
2. Settings for changing the theme of the settings application.
3. Settings for selecting the startup behavior of the program.
4. Settings for saving and loading settings.
5. Users will have access to a layout page in the settings application.
6. Settings for choosing which resources will be displayed.
7. CPU
8. RAM
9. Disk
10. Network
11. GPU
12. Settings for choosing which drivers to get the resources from.
13. Settings for adjusting the font attributes of each resource.
14. Settings for choosing the refresh rate of each resource.
15. Settings for modifying the string (prefix, suffix, title) of each resource.
16. Settings for choosing the units of each resource.
17. Users will have access to a history page in the settings application.
18. Settings for choosing which resources are included in the history.
19. Settings for modifying the recording rate of each resource.
20. Settings for displaying the history of each resource in the application window.
21. Settings for displaying the history of each resource on an exported excel spreadsheet table.
22. Settings for exporting the resource history as an excel spreadsheet table.
23. Users will have access to a about page in the settings application.
24. Displays the current version and allows the user to check for updates.
25. Displays the contact information of the developers.
26. Allows an email to be sent when clicking the developer emails.

**Taskbar Application:**

1. Users will be able to add or remove the taskbar application using the taskbar menu and toggling it on or off.
2. Users will be able to open task manager by left clicking on the taskbar display.
3. Users will be able to open the settings application by right clicking on the taskbar display.
   1. Performance

The program should start in no more than 10 seconds after first launched from the desktop or start menu. Right clicking the taskbar application will bring up the configuration window in less than 3 seconds.

* 1. Data Transfer Description

There are no defined data transfer limits needed for this project, as there will only be a call to the development website to check for updates.

* 1. Security/Safety/Constraints

The primary security concerns are a result of reading network traffic to determine the upstream and downstream rates.

1. User Profiles

There is one user profile, and that is for computer enthusiasts who like to track their resource usage, especially when gaming or doing other high resource tasks.

1. Glossary

CAT Team – Change Acceptance Team.

1. Appendices
   1. Change Request Form

|  |  |
| --- | --- |
| **Project:** | **Date:** |
| **Change Requestor:** | **Change #:** |
| **Change Category:**  Schedule  Cost  Scope  Requirements/Deliverables  Testing/Quality  Resources | |
| **Change Affects:**  Corrective Action  Preventative Action  Defect Repair  Updates  Other | |
| **Describe the Change:** | |
| **Describe the Reason:** | |
| **Describe any Alternatives:** | |
| **Describe any Technical Changes:** | |
| **Describe any Risks:** | |
| **Estimate Resources:** | |
| **Describe Quality Implications:** | |
| **Disposition:**  Approve  Reject  Defer | |
| **Description of Disposition:** | |

|  |  |  |
| --- | --- | --- |
| **Change Board Approval:** | | |
| **Name:** | **Signature:** | **Date:** |
| Morgan Anderson |  |  |
| Calvin Caldwell |  |  |