Taskbar Resources

Chart

Description automatically generated

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Signatory Page

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Signature (Calvin Caldwell) Date

This document analyzed by:

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Signature (Morgan Anderson) Date

Revision History

|  |  |  |  |  |
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|  |  |  |  |  |
|  |  |  |  |  |

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# **Class Diagrams**

## **Part 1: Settings Application**

Graphical user interface

Description automatically generated with medium confidence

## **Part 2: Taskbar Application**

Graphical user interface, text

Description automatically generated

# **Class Specifications**

## **Part 1: Settings**

|  |
| --- |
| **Class Information** |
| **Class Name:** Settings  Abstract Type: N Persistence: N |

|  |  |  |
| --- | --- | --- |
| **Trace-ability Information** | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 300 | General Settings | 3,4 |
| 400 | Taskbar Settings | 3,4 |
| 500 | Profile Settings | 3,4 |
| 600 | History Settings | 3,4 |

|  |  |  |
| --- | --- | --- |
| **Public Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| List<Pair<key, value>> ReadSettings() | Object is initialized, file exists. | N/A |
| Void WriteSettings(List<Pair<key, value>> settings) | List is initialized. | The settings file was updated. |
| String GetSetting(string key) | Object is initialized. | N/A |
| Void SetSetting(string key, string valie) | List is initialized. | The local settings list was updated. |
| Void ResetSettings() | Object is initialized. | Settings are all at default values. |
|  |  |  |
|  |  |  |

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| --- | --- | --- |
| **Protected Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Private Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | | |
| **Name** | **Type** | **Object (Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| settingsFile | File pointer | Y | Instance | Private | A file descriptor for the settings file. |
| settings | List of pairs of strings | Y | Instance | Private | A list of all the settings. |

|  |  |
| --- | --- |
| **Concurrency** | |
| **Threading Issue** | **Description** |
| (N/A) |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Major Exceptions** | | |
| **Name** | **Trigger** | **Action** |
| Corrupt/Bad settings | Settings file is incorrect/corrupt | Reset to default settings. |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Instance Information** | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
| N/A |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **General Comments** | | |
| **Author** | **Date** | **Comment** |
| N/A |  |  |
|  |  |  |

## **Part 1: Profiles**

|  |
| --- |
| **Class Information** |
| **Class Name:** Profiles  Abstract Type: N Persistence: N |

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| --- | --- | --- |
| **Trace-ability Information** | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 600 | Profile Settings | 3,4 |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Public Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| List<Pair<Settings, Name>> GetProfiles() | Object is initialized. | N/A |
| Void CreateProfile(string name) | Object is initialized. | A new profile is in the profile list. |
| Settings ReadProfile(string name) | Object is initialized. | N/A |
| Void UpdateProfile(Settings settings, string name) | Profile exists. | Profile settings are updated. |
| Void DeleteProfile(string name) | Profile exists. | Profile has been removed from the list. |
| Void DefaultProfile() | N/A | Current profile is set to default. |
|  |  |  |

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| --- | --- | --- |
| **Protected Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Private Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

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| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | | |
| **Name** | **Type** | **Object (Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| profiles | List<Pair<Settings, Name>> | Y | Instance | Private | A list of pairs of settings and profile names. |
|  |  |  |  |  |  |

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| --- | --- |
| **Concurrency** | |
| **Threading Issue** | **Description** |
| N/A |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Major Exceptions** | | |
| **Name** | **Trigger** | **Action** |
| Corrupt/Incorrect profile | Corrupt settings in a profile | Set to default profile |
|  |  |  |

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| --- | --- | --- | --- |
| **Instance Information** | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
| N/A |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **General Comments** | | |
| **Author** | **Date** | **Comment** |
| N/A |  |  |
|  |  |  |

## **Part 1: History**

|  |
| --- |
| **Class Information** |
| **Class Name:** History  Abstract Type: N Persistence: N |

|  |  |  |
| --- | --- | --- |
| **Trace-ability Information** | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 500 | History Settings | 3,4 |
|  |  |  |

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| --- | --- | --- |
| **Public Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| Void \* ReadHistory(string query) | The SQLite file exists. | The query was executed successfully. |
| Void \* WriteHistory(string query) | The SQLite file exists. | The query was executed successfully. |
| Void \* ExportHistory(string filename, string query) | The SQLite file exists. | The query was executed successfully, a excel spreadsheet was created. |
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| --- | --- | --- |
| **Protected Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Private Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | | |
| **Name** | **Type** | **Object (Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| File | SQLite file pointer | Y | Instance | Private | A file pointer to an SQLite file. |
|  |  |  |  |  |  |

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| --- | --- |
| **Concurrency** | |
| **Threading Issue** | **Description** |
| N/A |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Major Exceptions** | | |
| **Name** | **Trigger** | **Action** |
| SQL file corrupt/missing | The SQL file is corrupt or missing | Create a new empty SQL file |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Instance Information** | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
| N/A |  |  |  |
|  |  |  |  |

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| --- | --- | --- |
| **General Comments** | | |
| **Author** | **Date** | **Comment** |
| N/A |  |  |
|  |  |  |

## **Part 1: Hardware**

|  |
| --- |
| **Class Information** |
| **Class Name:** Hardware  Abstract Type: N Persistence: N |

|  |  |  |
| --- | --- | --- |
| **Trace-ability Information** | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 400 | Taskbar Settings | 3,4 |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Public Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| Void \* GetCPUs() | Object is initialized. | N/A |
| Void \* GetMemorys() | Object is initialized. | N/A |
| Void \* GetDiscs() | Object is initialized. | N/A |
| Void \* GetNetworks() | Object is initialized. | N/A |
| Void \* GetGPUs() | Object is initialized. | N/A |
| Void GetHardware() | Object is initialized. | N/A |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Protected Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Private Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

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| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | | |
| **Name** | **Type** | **Object (Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| cpus | List<Void \*> | Y | Instance | Private | List of available CPUs. |
| memorys | List<Void \*> | Y | Instance | Private | List of available memorys. |
| discs | List<Void \*> | Y | Instance | Private | List of available discs. |
| networks | List<Void \*> | Y | Instance | Private | List of available networks. |
| gpus | List<Void \*> | Y | Instance | Private | List of available GPUs. |

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| --- | --- |
| **Concurrency** | |
| **Threading Issue** | **Description** |
| N/A |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Major Exceptions** | | |
| **Name** | **Trigger** | **Action** |
| No available hardware for function | No hardware detected for one of the categories | Display an error message. |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Instance Information** | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
| N/A |  |  |  |
| N/A |  |  |  |

|  |  |  |
| --- | --- | --- |
| **General Comments** | | |
| **Author** | **Date** | **Comment** |
| N/A |  |  |
|  |  |  |

## **Part 2: Settings**

|  |
| --- |
| **Class Information** |
| **Class Name:** Settings  Abstract Type: N Persistence: N |

|  |  |  |
| --- | --- | --- |
| **Trace-ability Information** | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 400 | Taskbar Settings | 3,4 |
|  |  |  |
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|  |  |  |
| --- | --- | --- |
| **Public Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| List<Pair<key, value>> ReadSettings() | Object is initialized, settings file exists. | N/A |
| String GetSetting(string key) | Settings have been read. | Setting is applied to taskbar app. |
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| --- | --- | --- |
| **Protected Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Private Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | | |
| **Name** | **Type** | **Object (Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| settingsFile | File pointer | Y | Instance | Private | A file descriptor for the settings file. |
| settings | List of pairs of strings | Y | Instance | Private | A list of all the settings. |

|  |  |
| --- | --- |
| **Concurrency** | |
| **Threading Issue** | **Description** |
| N/A |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Major Exceptions** | | |
| **Name** | **Trigger** | **Action** |
| Corrupt/Bad settings | Settings file is incorrect/corrupt | Reset to default settings. |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Instance Information** | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
| N/A |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **General Comments** | | |
| **Author** | **Date** | **Comment** |
| N/A |  |  |
|  |  |  |

## **Part 2: History**

|  |
| --- |
| **Class Information** |
| **Class Name:** History  Abstract Type: N Persistence: N |

|  |  |  |
| --- | --- | --- |
| **Trace-ability Information** | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 600 | History Settings | 3,4 |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Public Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| Void \* WriteHistory(string query) | SQLite file exists. | SQLite file was updated. |
|  |  |  |
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|  |  |  |
|  |  |  |
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| --- | --- | --- |
| **Protected Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Private Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | | |
| **Name** | **Type** | **Object (Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| File | SQLite file pointer | Y | Instance | Private | A file pointer to an SQLite file. |
|  |  |  |  |  |  |

|  |  |
| --- | --- |
| **Concurrency** | |
| **Threading Issue** | **Description** |
| N/A |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Major Exceptions** | | |
| **Name** | **Trigger** | **Action** |
| SQL file corrupt/missing | The SQL file is corrupt or missing | Create a new empty SQL file |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Instance Information** | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
| N/A |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **General Comments** | | |
| **Author** | **Date** | **Comment** |
| N/A |  |  |
|  |  |  |

## **Part 2: Hardware**

|  |
| --- |
| **Class Information** |
| **Class Name:** Hardware  Abstract Type: N Persistence: N |

|  |  |  |
| --- | --- | --- |
| **Trace-ability Information** | | |
| **Use Case ID** | **Use Case Name** | **Steps** |
| 400 | Taskbar Settings | 3,4 |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Public Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| Void \* GetCPUPerformanceData(Void \* cpu) | Object is initialized, hardware is selected. | N/A |
| Void \* GetMemoryPerformanceData (Void \* memory) | Object is initialized, hardware is selected. | N/A |
| Void \* GetDiscPerformanceData (Void \* disc) | Object is initialized, hardware is selected. | N/A |
| Void \* GetNetworkPerformanceData (Void \* network) | Object is initialized, hardware is selected. | N/A |
| Void \* GetGPUPerformanceData (Void \* gpu) | Object is initialized, hardware is selected. | N/A |
|  |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Protected Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Private Methods** | | |
| **Signature** | **Preconditions** | **Post Conditions** |
| N/A |  |  |
|  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | | |
| **Name** | **Type** | **Object (Y/N)** | **Instance/Static** | **Visibility** | **Description** |
| N/A |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
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| --- | --- |
| **Concurrency** | |
| **Threading Issue** | **Description** |
| N/A |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Major Exceptions** | | |
| **Name** | **Trigger** | **Action** |
| No available hardware for function | No hardware detected for one of the categories | Display an error message. |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Instance Information** | | | |
| **Minimum** | **Maximum** | **Mean** | **Fixed** |
| N/A |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **General Comments** | | |
| **Author** | **Date** | **Comment** |
| N/A |  |  |
|  |  |  |

# **CRUD Matrix**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Use Case ID | Use Case Name | Person | Tx | C3 | C4 | C5 | C6 | C7 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |