**What does the system do?**

Provides visualisation for the top 20 google search engine results in a grid format. These results consist of three popular musicians and a corresponding song as the search phrase. The grid presents the data under the column headings:

* Rank: Number between 0 and 20 based on the order of the results in the search.
* Search phrase: Phrase that is used to search google.
* Uniform resource identifier: The link to the corresponding web page of the result.
* Title: Title of the web page.

Additionally, with the click of a button the user can save the search results into a CSV file within the projects ‘Debug’ folder.

**Functional requirements**

|  |  |
| --- | --- |
| **Functional requirement #** | **Description** |
| FR 1 | User needs to be able to view a maximum of 20 recent song-related search data. |
| FR 2 | CSV file with google search data should be available at the click of a button. |

**Potential risks/alternative flows**

Exception handling. Such as the grid’s ‘onclick’ functionality. If this is not handled an exception will be thrown. Additionally, in-case there is no grid contents and the user attempts to save to a CSV file.

Using alternative mechanisms to the Google API risks violating Google’s terms of service. See Google’s terms of service Chapter 5.3:

“You agree not to access (or attempt to access) any of the Services by any means other than through the interface that is provided by Google, unless you have been specifically allowed to do so in a separate agreement with Google. You specifically agree not to access (or attempt to access) any of the Services through any automated means (including use of scripts or web crawlers) and shall ensure that you comply with the instructions set out in any robots.txt file present on the Services.”

**Design pattern**

Separation of concerns will provide easier maintainability for any future development. Model-view-view model is a solution in the form of a design pattern. The model is responsible for communication to the Google search engine and populating an external CSV file. The ‘Mainwindow.xaml’ class is responsible for the view. Along with the ‘MainViewModel’ class as the intermediary, performing business logic, routing, and exception handling.

**Additional practices**

* Solid design principles.
* Object orientation.
* Class documentation.
* Use of HtmlAgilityPack: Nu-Get package, providing the functionality to access the HTML for the search results.
* Risk of being blacklisted by Google.
* Use of Google’s search API: alternative technique limiting the number of search results to 10.