Software User Manual (SUM)

CMSC 447 Group 4

Project Vesta

1 Scope

1.1 Identification

Vesta is a website that locates a user's ideal place to live.

1.2 System overview

Vesta is a web based application that will be utilized by an average internet user. This web application is intended to allow users to acquire potential living locations based on abstract specifications regarding the area. To garner said information, the user will specify quality of life attributes desired within a defined interval. These characters may include meteorological data (ie average temperature, average weather conditions), geographical information, etc. The application will compare the inputted information to specified open source databases to determine the locations that fit the criteria. Once the locations have been determined by the software on the back-end, they will be displayed to the user.

1.3 Document overview

This document fully describes the capabilities of the software and the hardware and software that is required to utilize the website. A software summary is provided, detailing the intended uses of the software, the files and computer requirements needed for the software to execute, an organization of the software from the user's perspective, any security considerations, and who to contact with concerns of the software. In addition to providing a summary, this document outlines step-by-step procedures oriented to the first time/occasional user. This outline will provide allow the user to reliably access the software before learning the capabilities of the software. Finally the document will provide the users a procedural reference guide, which informs what the user should do both the case the software is working and when the software is no longer functioning properly.

2 Referenced documents

The document does not reference any other software documents.

3 Software summary

3.1 Software application

The software Vesta should be utilized by users to try to find the most optimal city to live in the United State of America. This web application is intended to allow users to acquire the name of the area that best suits them based of several quality of life attributes. The application will compare the inputted information to specified open source databases to determine the

locations that fit the criteria. The benefits expected from this result is that the user's time spent researching locations is substantially decreased, and that the user is able to focus their efforts on further researching the most viable locations to live instead of searching for cities across the United States.

3.2 Software inventory

The user does not need to install any files to operate the software.

3.3 Software environment

There are only a few software environment requirements needed to utilize the software Vesta. One of the requirements concerns the hardware, which requires that the user's computer has an Intel Pentium 4 processor or later that's SSE2 capable. The last two environment requirements is that when trying to utilize the software Vesta, the user is using either Google Chrome version 66 or Mozilla Firefox 59.

3.4 Software organization and overview of operation

This paragraph shall provide a brief description of the organization and operation of the software from the user's point of view. The description shall include, as applicable:

a. Logical Components

1) Radio Buttons

- These buttons allow the user to select a value concerning specific search criteria. This criteria is utilized by the software to find the cities that have these characteristics.
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2) Text boxes

- The text boxes allow for the user to input a number range for a specific life characteristic. The software then searches for the cities whose life characteristics for that specified value fall within the specified range.

3) Submit Button

- The submit button allows the user to submit their search query to the backend functionality of the software, producing the required results.

b. Performance characteristics that can be expected by the user, such as:

1) The software accepts inputted number values in the text boxes and the selected values of the radio buttons. The user can utilize all eight input values, but must at least select one search value.

2) The software will return city names in a list, and pins on the map of which can be

selected to show the city name. The results page should display a set of results for 95% of queries.

3) The software typically responds within 60 seconds, which can be affected by the user's internet connection.
4) The software will automatically only return 20 city names, unless otherwise Specified by the user on the results page. 5) The software has an expected error rate of 5%.
6) This software has an expected reliability rate of 95%.

c. The submit button parses the inputted search values and these parsed values are searches the software's database for cities that have all the specified living characteristics.

3.5 Security and privacy

Due to the software not requiring any personal information and only utilizing sources open to the public there was no need for any security or privacy considerations to be associated with the software.

3.6 Assistance and problem reporting

To report a problem or provide input concerning the software the user should contact Elizabeth Acoutt at her email address eaucott1@umbc.edu.

4 Access to the software

4.1 First-time user of the software

4.1.1 Equipment familiarization

The user does not require any further equipment configuration for this software, they must only use the software environment requirements noted in Section 3.3 of this document.

4.1.2 Installation and setup

There are no procedures that the user must perform to be authorized to access the software as it is on a public server.

4.2 Initiating a session

1. Open either Google Chrome version 66 or Firefox version 59
2. Go to the web page located at http://18.216.29.25/index.html.
3. Select one or more of the living characteristics presented on the page
4. Hit the submit button

5. On the results page you may:
    a. Select a city name from the list presented on the right panel of the page
    b. Add/change at least two search variables on the left panel of the page
        i. After adding/changing the search criteria hit the submit button
        ii. Restart step 5
    c. Return to the web page located at http://18.216.29.25/index.html to begin a new session.
6. Once the user is satisfied they must exit the web browser.

4.3 Stopping and suspending work

The user can cease and interrupt the software in two ways, either refresh the webpage or exit the webpage. As for determining if the program has normally ceased working is if the webpage is no longer showing new results when new criteria is entered or when the webpage is no longer accepting any changes to the search parameters. If the webpage exits unexpectedly then an abnormal termination occurred.

5 Processing reference guide

5.1 Capabilities

After the submit button is selected by the user the data inputted by the user from both the text boxes and radio buttons is sent to the backend of the software. The backend python code will use the parsed variables from the website to search the server's database for cities that have the subsequent values. After finding a city that fits all the selected criteria, the names/locations of the city are returned both onto the map and in a list of city names. The user can either select the pins on the map to expand it to show the city name, or select the city name of the list to move to the position on the map where the city is located.

5.2 Conventions

The software uses the convention of text boxes to allow for the user flexible inputs, while radio buttons are used for when the user only has limited options. In addition to this, a map is utilized to show the results of the submitted search criteria, allowing the user to gather more information about the outputted city.

5.3 Processing procedures

This paragraph shall explain the organization of subsequent paragraphs, e.g., by function, by menu, by screen. Any necessary order in which procedures must be accomplished shall be described.

5.3.1 Index Page

The index page should be the first menu accessed by the user. From this page, the user shall select a button for one or more of the presented living characteristics. After making the selection, the user should press the submit button, which will initiate the software to search it's database to find the results to submit to the results page. This page can be affected by the user's internet connection, but otherwise this page will just redirect the user to the results page and only provide the desired results.

5.3.2 Results Page

The results page should be the last menu accessed by the user. The user can utilize the list in the right panel or the pins located on the map to acquire more information about the resulting city, or the user can refine their search criteria. To refine the criteria the user must alter the values within the text boxes and/or select a different radio button before hitting the submit again. After selecting the submit button a new list of cities will appear and the user can access these results.
This page can be affected by the user's internet connection, but otherwise this page will demonstrate to the user the resulting cities that match the inputted living characteristics.

5.4 Related processing

There is no processing performed by the software that is not invoked directly by the user.

5.5 Data backup

This software does not store or utilize data saving, so this software does not require any data backup procedures.

5.6 Recovery from errors, malfunctions, and emergencies

To recover from errors or malfunctions the web page only needs to be refreshed, or the user exits that page and return to the index page indicated in section 4.2. Otherwise this software is not necessary in the event of an emergency.

5.7 Messages

1. The error message "Failed to load resource: the server responded with a status of 500 (INTERNAL SERVER ERROR)" will be presented in the console if the search values they have entered have not matched all the criteria, or if no search values have been entered.