# Introduction

## Background

This document provides the Test Summary for the testing activities within iteration version 2.0.1 for the *Neighborhood Informant* software package.

The purpose of the *Neighborhood Informant* is a single-user desktop application to assist someone in finding information about various neighborhoods throughout the Chicago Metropolitan Area.

The *Neighborhood Informant* is dependent upon local database files which can be manually updated by the end-user.

## Structure of the Report

This report is structured in the following manner:

* Section 2, Overview, provides an overview of the significant events and activities documented within the iteration version 2.0.1 testing of the *Neighborhood Informant* software package.
* Section 3, Variances, records any variances of the artifacts from those areas agreed on previously, especially in areas that may cause concern to the group accepting the test results, including any references to supporting documentation that covers the reasons for the deviations.
* Section 4, Assessment, provides a brief assessment of the comprehensiveness of the testing process for the iteration version 2.0.1 of the *Neighborhood Informant* software package.
* Section 5, Results, provides a summary of the results of the iteration version 2.0.1 testing of the *Neighborhood Informant* software package.
* Section 6, Evaluation, provides an overall evaluation of the testing process including any observed problems and/or limitations.
* Section 7 provides a summary of the major testing activities and events for the iteration version 2.0.1 testing for the *Neighborhood Informant* software package.

## References and Relationship to Other Documents

This document frequently refers to the client’s *Neighborhood Informant Project Description* document to outline certain features for test.

# System Overview

This section provides a high level overview of the significant events and activities documented during the iteration version 2.0.1 testing of the *Neighborhood Informant* software package.

This section also specifies the scope of the testing (what was and what was not tested), and specifying the test environment details (including the hardware, software and data used in the testing).

* The iteration version 2.0.1 website registration functionality test for the *Neighborhood Informant Website* was begun on November 17th, 2014 and completed on November 17th, 2014. During this testing only the registration section of the website and corresponding *MySQL* user database was considered. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1*, and running *Google Chrome*.
* The iteration version 2.0.1 website login functionality test for the *Neighborhood Informant Website* was begun on November 17th, 2014 and completed on November 17th, 2014. During this testing only the login section of the website and corresponding *MySQL* user database was considered. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1*, and running *Google Chrome*.
* The iteration version 2.0.1 website software download functionality test for the *Neighborhood Informant* *Website* was begun on November 17th, 2014 and completed on November 17th, 2014. During this testing only the download section of the website was considered. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1*, and running *Google Chrome*.
* The iteration version 2.0.1 website logout functionality test for the *Neighborhood Informant* *Website* was begun on November 17th, 2014 and completed on November 17th, 2014. During this testing only the logout section of the website was considered. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1*, and running *Google Chrome*.
* The iteration version 2.0.1 website “home” page was not tested for the *Neighborhood Informant* as it does not directly affect the user obtaining the software package.
* The iteration version 2.0.1 website “contact us” page was not tested for the *Neighborhood Informant* as it does not directly affect the user obtaining the software package.
* The iteration version 2.0.1 website “about us” page was not tested for the *Neighborhood Informant* as it does not directly affect the user obtaining the software package.
* The iteration version 2.0.1 application installation test for the *Neighborhood Informant* desktop application was begun on November 18th, 2014 and completed on November 18th, 2014. During the testing only the software installation features were considered. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1*.
* The iteration version 2.0.1 application launch test for the *Neighborhood Informant* desktop application was begun on November 18th, 2014 and completed on November 22th, 2014. During this testing only the software launch features were considered. For example: loading default and saved user preferences and reading and loading the database data. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1*
* The iteration version 2.0.1 application navigation test for the *Neighborhood Informant* desktop application was begun on November 18th, 2014 and completed on November 18th, 2014. During this testing only the software navigation features were considered. For example: switching from the main page to the search page by the means of button click events and keyboard shortcut key strokes. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1*.
* The iteration version 2.0.1 application search functionality test for the *Neighborhood Informant* desktop application was begun on November 18th, 2014 and completed on November 21st, 2014. During this testing only the software search features were considered. For example: searching by community, block, or statistic. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1.*
* The iteration version 2.0.1 application mapping functionality test for the *Neighborhood Informant* desktop application was begun on November 18th, 2014 and completed on November 19st, 2014. During this testing only the software mapping features were considered. For example: confirming the Chicago Area map displays when navigating to the map page. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1.*
* The iteration version 2.0.1 application settings functionality test for the *Neighborhood Informant* desktop application was begun on November 18th, 2014 and completed on November 19st, 2014. During this testing only the software settings features were considered. For example: confirming application text is updated upon selecting a preferred language. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1.*
* The iteration version 2.0.1 application help functionality test for the *Neighborhood Informant* desktop application was begun on November 18th, 2014 and completed on November 18st, 2014. During this testing only the software help features were considered. For example: confirming the help topics display when displaying the help page. The testing was conducted using a *Lenovo Y50-70 Laptop* with 8 GBs of memory, an *Intel Core i7* @ 2.50 Ghz, a 64-bit version of *Microsoft Windows 8.1.*

# Variances

This section is used to record any variances of the artifacts from those areas agreed on previously, especially in areas that may cause concern to the group accepting the test results, including any references to supporting documentation that covers the reason for the deviations.

* Additional informational database variance (hardship index)
  + Conditions observed during the course of testing resulted in the decision to add an additional informational database result (hardship index per community) to enhance the by community search results. After the additional database information was added and processed, subsequent tests were implemented and successfully re-tested. References to the included databases can be found in the client-supplied *Neighborhood Informant Project Description*.
* Removal of zip code entry option to search by community variance
  + Conditions observed during the course of testing resulted in the decision to remove the search by zip code feature. Some communities span across multiple zip codes and was found to not properly reflect the desired search result. After the search by zip code option was removed, subsequent tests were implemented and successfully re-tested. References to the initial search by zip code option can be found in the client-supplied *Neighborhood Informant Project Description.*
* Top 10 search results criteria variance
  + Conditions observed during the course of testing resulted in the decision to allow the user to provide the number of top results performed in the search functionality. The top search result feature was changed to allow the user to provide the number of top search results desired. After the top results by search was adjusted, subsequent tests were implemented and successfully re-tested. References to the return top 10 search results can be found in the client-supplied *Neighborhood Informant Project Description.*
* Map view variance
  + Conditions observed during the course of testing resulted in the decision to supply a static map which outlined the Chicago Area communities by boundary and color-code instead of a *Google Maps* interactive experience. The *Google Map* API was found difficult to constrain to the limits of the Chicago Area communities. Selecting a community, or region outside of the communities listed in the Chicago Area communities database yielded an error in database queries and results. After the *Google Map* API option was removed and replaced with a static map, subsequent tests were implemented and successfully re-tested. References to the initial *Google Map* API option can be found in the client-supplied *Neighborhood Informant Project Description.*
* Export search results in CSV variance
  + Conditions observed during the course of testing resulted in the decision to change the search result export file format from CSV to a readable text format. The CSV exported file format was found to not be easily human readable. After the export CSV option was removed and replaced with a textual file format, subsequent tests were implemented and successfully re-tested. References to the CSV export file format option can be found in the client-supplied *Neighborhood Informant Project Description.*
* Search query input variance
  + Conditions observed during the course of testing resulted in the decision to limit the search queries by the user to a predefined set of selection options (predefined community names, predefined block names). Allowing users to input custom queries often generated errors if given community name or block name did not exist within the context of the provided databases. After adjusting the user interface to allow users to select from a predefined set of search options, subsequent tests were implemented and successfully re-tested. References to the search query options can be found in the client-supplied *Neighborhood Informant Project Description.*

# Assessment

This section provides a brief assessment of the comprehensiveness of the testing process for the completed testing phase against the test objectives and constraints specified in the Test Plans section found in the client-supplied *Neighborhood Informant Project Description Report*.

This section also identifies any aspects of the *Neighborhood Informant* that were not tested as thoroughly as planned (due to insufficient time or resources).

* All test cases were executed with the exception of:
  + The products ability to interface with *Google Maps*. The *Google Maps* API feature was removed from the application (see variances).
  + The products ability to accept custom user input search queries. The custom search query option was removed from the application (see variances).
  + The products ability to be installed and properly function on *Windows* operating systems that are older than *Windows 7, Windows8,* or *Windows 8.1*.

# Results

This section provides a summary of the results of the iteration version 2.0.1 testing the *Neighborhood Informant* software package, identifies all resolved issues and summarizes the details of their resolution, and lists any outstanding issues.

* The website registration functionality test revealed there were no checks in place to prevent the same user registering multiple times with the same account username and password. The development team corrected the observed defects and the amended code passed the re-test.
* The website login functionality test revealed that the initial PHP global session cookie was not properly being stored and would not remember that the user was logged in when navigating to different pages on the website. The developers corrected the observed defects and the amended code passed the re-test.
* The website login functionality test revealed that visitors to the website could still access the secure software download page without being logged in. The visiting user could access the secure download by simply manually typing the address of the executable file. The developers corrected the observed defects and the amended code passed the re-test.
* The website download functionality test revealed that there were no problems with the initial code and passed all functionality tests.
* The website logout functionality test revealed that upon the user logging out, the times visited attribute in the database schema relation was not being updated properly. The developers corrected the observed defects and the amended code passed the re-test.
* The application installation procedure test revealed that during the installation procedure a desktop icon (shortcut) was not being placed, or added to the desktop. The developers corrected the observed defects and the amended code passed the re-test.
* The application launch test revealed that the local database reading and loading into memory procedures were blocking the user interface (UI) thread effectively stalling the application load time (the time between executing the application and when the user sees the GUI). The developers amended the code and created a background worker thread which handled the database reading and loading and the amended code passed the re-test.
* The application navigation test (switching between different views in the graphical user interface) passed all tests and did not require re-tests.
* The application search functionality test revealed that search queries provided by the user would often not match specific data in the database relations used to compile meaningful search results and would throw unhandled exceptions in the software package. The developers restricted user search input by allowing the user to select from predefined community names or block names that will match entries in the database relations. The amended code passed the re-test.
* The application search functionality test revealed that *tax increment financing* (TIF) data was not necessarily valid for a community specific search query and therefore was eliminated from the results of a by-community search. The (TIF) related search result data was alternatively added to by block search queries. The development team corrected the observed defects and the amended code passed the re-test.
* The application search save current functionality test revealed duplicate search results were being cached and listed in the load previous search drop-down list box. The developers added logic to first check if a search result was already stored in the load recent search list which corrected the observed defect. The amended code passed the re-test.
* The application search export results functionality test revealed that exported files were storing community search results with a wrong community ID. The developers corrected the observed defect and the amended code passed the re-test.
* The application search import results functionality test revealed that if the user selected to export search results immediately after loading a recent search result, the community ID was always zero and subsequently threw an exception when attempting to import results. The developers corrected the observed defects and the amended code passed the re-test.
* The application mapping functionality test revealed the *Google Map* API allowed a user to select community areas outside of the Chicago area (in Indiana for example) and the selected location on the map would not find any results in the database relations, therefore no results would be displayed or an exception would be thrown. The developers inserted a static (image) map on the map screen instead of using the *Google Maps* API to correct the observed defect. The amended code passed the re-test.
* The application settings functionality test revealed that certain textual elements of the application were not properly updating when the user selected a desired language and applied the settings. The developers corrected the observed defect and the amended code passed the re-test.
* The application settings functionality test revealed that certain keyboard shortcuts set by the user were not being saved correctly depending on various keystroke entries. The development team corrected the observed defect by limiting the possible key combinations to known working shortcuts. The amended code passed the re-test.
* The application help functionality test revealed no outstanding issues.

# Evaluation

This section provides an overall evaluation of the testing process including problems and limitations.

The iteration version 2.0.1 of the *Neighborhood Informant* software package underwent comprehensive testing, with only two major defects being observed.

* Additional test cases were designed and executed by the developers to explore the *Google Maps* API feature to limit the effective viewing area to the Chicago area including only the communities listed within the database relations provided. Due to challenging testing timescales, the development team used a static map image to display the communities for the Chicago area in a color-coded fashion which will distinguish the different Chicago community areas by color.
* Since a few problems were observed when exporting a search result that was recently loaded using the load recent search operation and only enough testing was performed as possible to test the amended code during challenging testing timescales, it is thought that there will be a low likelihood of importing search results errors in future use of the application.

# Summary of Activities

This section provides a summary of the major testing activities and events for the iteration version 2.0.1 testing of the *Neighborhood Informant* software package. This section also summarizes testing resource information, such as total staffing levels, total testing time, etc.

* Website Registration Functionality Test

Test start date: November 17th, 2014 Test End Date: November 17th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 2 | 2 |
| *Test Design Effort* | 1.0 | 0.8 |
| *Test Execution Effort* | 1.0 | 1.0 |
| *Re-Test Effort* | 0.5 | 0.75 |
| *Test Management and Reporting* | 0.5 | 0.5 |

* Website Login Functionality Test

Test start date: November 17th, 2014 Test End Date: November 17th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 1 | 1 |
| *Test Design Effort* | 1.0 | 1.5 |
| *Test Execution Effort* | 1.5 | 1.2 |
| *Re-Test Effort* | 0.5 | 2.0 |
| *Test Management and Reporting* | 0.5 | 0.5 |

* Website Download Functionality Test

Test start date: November 17th, 2014 Test End Date: November 17th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 1 | 1 |
| *Test Design Effort* | 2.0 | 3.0 |
| *Test Execution Effort* | 1.0 | 1.0 |
| *Re-Test Effort* | 0.5 | 0.5 |
| *Test Management and Reporting* | 0.25 | 0.25 |

* Website Logout Functionality Test

Test start date: November 17th, 2014 Test End Date: November 17th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 1 | 1 |
| *Test Design Effort* | 0.5 | 0.8 |
| *Test Execution Effort* | 0.5 | 0.5 |
| *Re-Test Effort* | 0.5 | 0.5 |
| *Test Management and Reporting* | 0.5 | 0.5 |

* Application Installation Functionality Test

Test start date: November 18th, 2014 Test End Date: November 18th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 2 | 2 |
| *Test Design Effort* | 2.0 | 2.0 |
| *Test Execution Effort* | 1.0 | 1.0 |
| *Re-Test Effort* | 0.5 | 0.75 |
| *Test Management and Reporting* | 0.5 | 0.5 |

* Application Launch Functionality Test

Test start date: November 18th, 2014 Test End Date: November 22nd, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 3 | 3 |
| *Test Design Effort* | 3.5 | 3.0 |
| *Test Execution Effort* | 2.5 | 2.0 |
| *Re-Test Effort* | 1.5 | 1.0 |
| *Test Management and Reporting* | 1.0 | 1.0 |

* Application Navigation Functionality Test

Test start date: November 18th, 2014 Test End Date: November 18th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 2 | 2 |
| *Test Design Effort* | 1.0 | 1.0 |
| *Test Execution Effort* | 1.0 | 1.0 |
| *Re-Test Effort* | 0.5 | 0.75 |
| *Test Management and Reporting* | 0.5 | 0.5 |

* Application Search Functionality Test

Test start date: November 18th, 2014 Test End Date: November 21st, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 3 | 3 |
| *Test Design Effort* | 4.0 | 3.5 |
| *Test Execution Effort* | 3.0 | 4.0 |
| *Re-Test Effort* | 1.75 | 2.25 |
| *Test Management and Reporting* | 1.25 | 1.25 |

* Application Mapping Functionality Test

Test start date: November 18th, 2014 Test End Date: November 19th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 1 | 2 |
| *Test Design Effort* | 1.5 | 4.5 |
| *Test Execution Effort* | 2.5 | 3.5 |
| *Re-Test Effort* | 1.5 | 2.0 |
| *Test Management and Reporting* | 1.25 | 1.25 |

* Application Settings Functionality Test

Test start date: November 18th, 2014 Test End Date: November 19th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 2 | 2 |
| *Test Design Effort* | 2.0 | 2.0 |
| *Test Execution Effort* | 1.0 | 1.0 |
| *Re-Test Effort* | 1.5 | 2.0 |
| *Test Management and Reporting* | 0.5 | 0.5 |

* Application Help Functionality Test

Test start date: November 18th, 2014 Test End Date: November 18th, 2014

|  |  |  |
| --- | --- | --- |
| **Item** | **Planned** | **Actual** |
| *Staff Levels* | 1 | 2 |
| *Test Design Effort* | 1.0 | 1.25 |
| *Test Execution Effort* | 1.0 | 1.0 |
| *Re-Test Effort* | 0.5 | 0.75 |
| *Test Management and Reporting* | 0.5 | 0.5 |