




Test Report

TEAM: CHARLIE

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SWEN 670 – SOFTWARE ENGINEERING PROJECT
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Project name: Mnemosyne, Disability Mobile Application

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Project Leader: Michael Le

Phase: Design & Engineering and Execution

For approval: Michael Le

Michael le Date: 08/06/2021

For approval: Dr. Mir Mohammed Assadullah

_____ Date: 08/06/2021

Revision History

Version Number	Date	Description	Approved By
1.0	08/06/2021	Test Report	Michael Le

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1. Introduction

1.1 Purpose

This document aims to show the Quality Assurance and Control the functionalities requirements for Mnemosyne mobile application. The application seeks to present the testing activities for each of the applications. Also, this test report aims to show the audiences that the Mnemosyne application is working based on the fundamental testing metric and test cases execution. Overall, this testing document delves as follows: Mnemosyne application overview, testing strategy, testing limitations, type of test, test cases, defect, and metrics to present the tests performed.

1.2 Application Overview

- a. Dr. Mir Assadullah created the Short-Term Memory Assistant mobile application for the UMGC Software Engineering Project course Capstone Project in the summer 2021 term. The Charlie team will be working with DevSecOps Team to complete the overall Capstone Project. Each team will have similar general requirements, and the business analyst will develop a high-level requirement to envision the team for a unique design/approach mobile application solution.
- b. The Capstone Project's customers include disabled people from dementia to Alzheimer's. The public service professionals, such as doctors, medical analysts, etc., would benefit from the service using this memory-impaired mobile application.
- c. The main activities of the Mnemosyne mobile application are to show the functionalities as follows: record speech, save/retain text, voice recognition training, record speech of user only, visual options, searching text, training videos, and send a message notification to users.

1.3 Technical Project Stakeholders

The testing strategy in this document delves around mainly test case feature functionalities and aims to present the Mnemosyne application results. In addition, the test development includes the following activities:

- Reviewing and analyzing the Software Requirements and the Project Plan
- Development of scenarios and required testing techniques
- Define acceptance criteria to meet the accepted standard
- Construction of test case which defined by the use case input/output
- Writing and creation of test scripts
- Running tests and documenting the results of each test
- Review of all testing documentation

2. Type of Testing

There are various types of testing that the team Charlie went through as part of the project implementation. In the following section, the types of testing are elaborate.

2.1 Unit testing

Unit tests are written to help the developers to ensure each of the components is working as designed. In this project, the unit tests are also required to be executed as part of the continuous integration and delivery (CICD) process. Typically, the unit tests cover three-quarters of the code. However, because of the lack of time, the planned code coverage could not be achieved. Tests were written to verify the text encryption/decryption and test if the texts are identified as scheduled texts.

2.2 Integration testing

In the case of the Mnemosyne application, there are many components integrated. As part of the standard system testing, they were verified. The only external system in this application is Google Cloud's speech-to-text API. The API connection was tested thoroughly using the service account credential JSON by passing a static audio file and a streaming input.

2.3 Regression Testing

The project went through 8 execution sprints. When weekly release becomes available at the end of each sprint, the application goes through a round of regression testing. The regression testing is performed to ensure the existing features within the application is working after the new releases. Typically, the regression testing for larger projects is done using an automated testing tool like selenium or protractor. However, in case of Mnemosyne the regression testing was done

manually. The regression test suites are nothing but the test cases that were executed in the last release.

2.4 End-to-end System Testing

The project adopted the scrum method of agile testing. So, after every release, the application was expected to work end-to-end with the defined set of features. Keeping that in mind, the test cases were written for the sprint. Each of the use cases was executed keeping usability in mind. The app was uninstalled and installed again for almost all tests that involved user's voice training. For the existing notes, the use cases were executed with the installed app.

2.5 Nonfunctional Testing

The application went through nonfunctional testing. Usually, the nonfunctional testing covers both performance and load testing. The performance testing in this project was purely manual. A few performance issues were identified in the initial releases and addressed in subsequent releases. As Mnemosyne is a standalone application with minimum external communication apart from Google's speech-to-text, no-load testing was performed.

3. Items not Tested

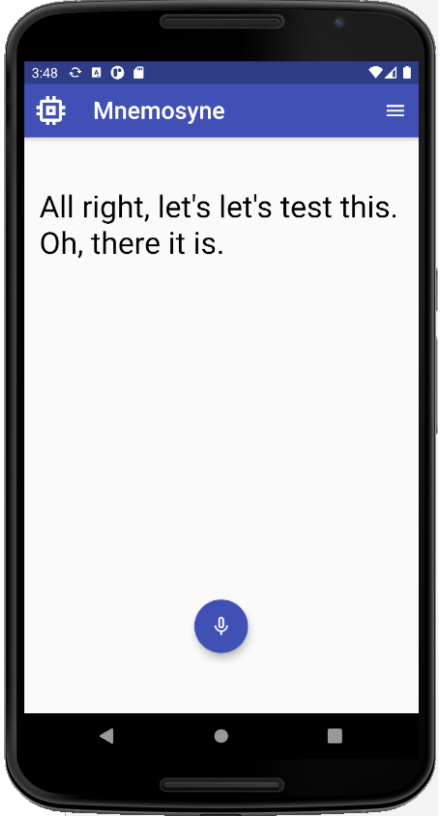
The following items are not in scope to be tested by Team Charlie:

- Network Security
- App Store/Google Play deployment
- Load and stress testing

4. Metrics and Testing

4.1 Speech-to-Text

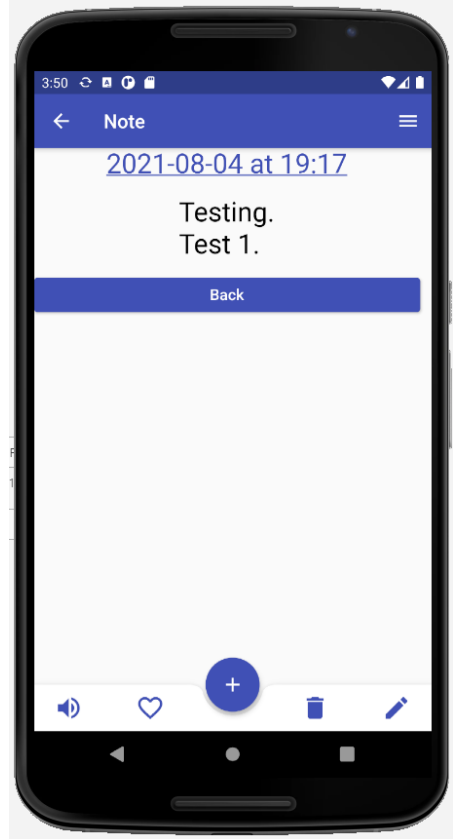
Test Name:	Speech to Text Conversion Test – Round 1	Speech to Text Conversion Test – Round 2
Test Start Date & Time:	7/27/2021, 1:35pm	8/4/21, 7:08pm
Test End Date & Time:	7/27/2021, 1:40pm	8/4/21, 7:09pm
Test Conductor:	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment:	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Setup the device 2) Record the user's voice to train the app 3) Try to speak and check transcribed text	
Expected Result	1) App should print the text as spoken 2) Texts should be saved in the device's local memory	
Witnesses:		Tyler Puschinsky
Deviations:	None	None
Issues Opened:	None	None
Action Items Opened:		
Status	Pass	Pass
Test Conductor Signature/ Date:	Damion Sevilla, 7/27/21	Damion Sevilla, 8/4/21
Witness Signature/ Date:		Tyler Puschinsky, 8/4/21

Customer Signature/ Date:		
Screenshot		

4.2 Save Text

Test Name:	Save Text - Round 1	Save Text - Round 2
Test Start Date & Time:	7/27/21, 1:40pm	8/4/21, 7:08pm
Test End Date & Time:	7/27/21, 1:45pm	8/4/21, 7:09pm
Test Conductor:	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment:	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Start a new voice recording 2) Record a new note, and confirm 3) Go to the menu and choose the view Notes button	
Expected Result	1) Voice note should be saved in the Notes file	
Witnesses:		Tyler Puschinsky
Deviations:	None	None
Issues Opened:	None	None
Action Items Opened:		
Status	Pass	Pass
Test Conductor Signature/ Date:	Damion Sevilla, 7/27/21	Damion Sevilla, 8/4/21
Witness Signature/ Date:		Tyler Puschinsky, 8/4/21
Customer Signature/ Date:		

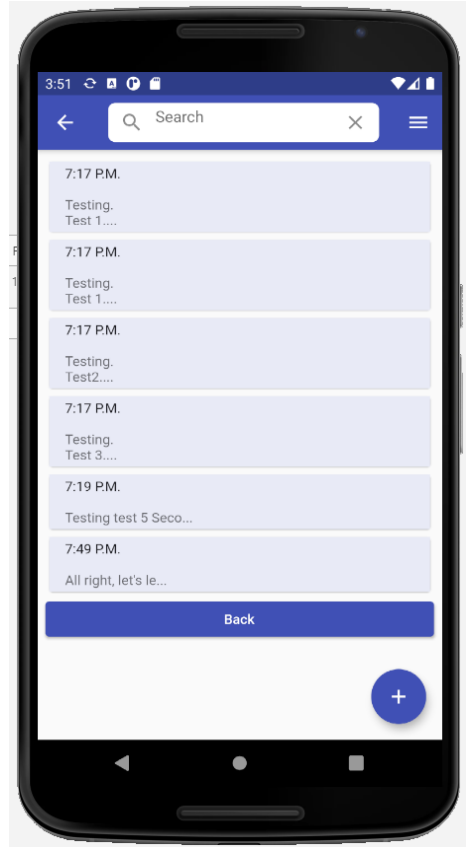
Screenshot



4.3 View Text

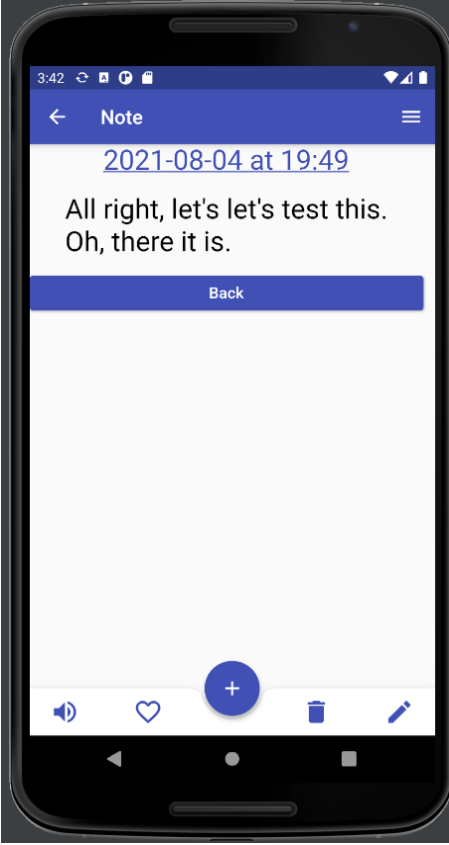
Test Name:	View Text – Round 1	View Text – Round 2
Test Start Date & Time:	7/27/21, 1:45pm	8/4/21, 7:08pm
Test End Date & Time:	7/27/21, 1:47pm	8/4/21, 7:09pm
Test Conductor:	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment:	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Start a new voice recording 2) Record a new note, and confirm 3) Go to the menu and choose the view Notes button 4) Open a saved Note	
Expected Result	1) Voice note should be saved in the Notes file 2) Content of voice note should be viewable when chosen	
Witnesses:		Tyler Puschinsky
Deviations:	None	None
Issues Opened:	None	None
Action Items Opened:		
Status	Pass	Pass
Test Conductor Signature/ Date:	Damion Sevilla, 7/27/21	Damion Sevilla, 8/4/21
Witness Signature/ Date:		Tyler Puschinsky, 8/4/21
Customer Signature/ Date:		

Screenshot



4.4 Voice Recognition

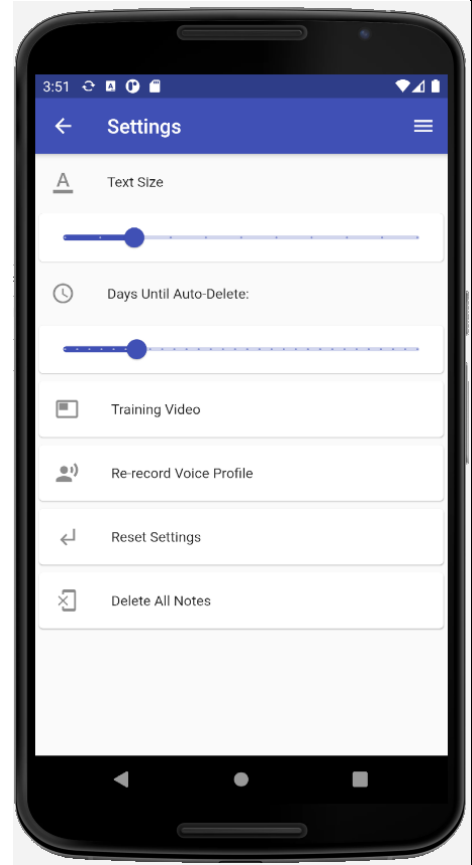
Test Name:	Voice Recognition – Round 1	Voice Recognition – Round 2
Test Start Date & Time:	8/1/21, 3:38pm	8/4/21, 7:48pm
Test End Date & Time:	8/1/21, 3:40pm	8/4/21, 7:49
Test Conductor:	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment:	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Start a new voice recording 2) Start a conversation with another person while recording	
Expected Result	1) User's voice is recognized 2) Conversation partner's voice is not recognized and transcribed	
Witnesses:		Tyler Puschinsky
Deviations:	None	Recognizes other voices in conversation other than the user's voice
Issues Opened:	None	None
Action Items Opened:		
Status	Fail	Pass w/ Exception
Test Conductor Signature/ Date:	Damion Sevilla, 8/1/21	Damion Sevilla, 8/4/21
Witness Signature/ Date:		Tyler Puschinsky, 8/4/21
Customer Signature/ Date:		

Screenshot		
Result		<p>The app recognized Tyler's voice through my speakers. The second line of text in the screenshot comes from what he said.</p>

4.5 Settings Menu

Test Name:	Settings Menu – Round 1	Settings Menu – Round 2
Test Start Date & Time:	7/27/21, 1:47pm	8/4/21, 7:13pm
Test End Date & Time:	7/27/21, 1:53pm	8/4/21, 7:14pm
Test Conductor:	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment:	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Open the app menu 2) Choose the Settings menu button 3) Test the functions on the settings page (I.e., Font size, Auto Delete Notes)	
Expected Result	1) All settings options are functional	
Witnesses:		Tyler Puschinsky
Deviations:	None	None
Issues Opened:	None	None
Action Items Opened:		
Status	Pass	Pass
Test Conductor Signature/ Date:	Damion Sevilla, 7/27/21	Damion Sevilla, 8/4/21
Witness Signature/ Date:		Tyler Puschinsky, 8/4/21
Customer Signature/ Date:		

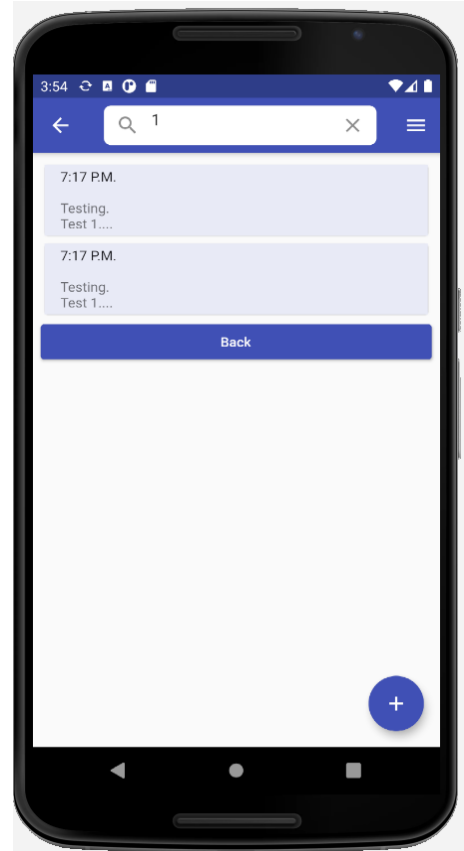
Screenshot



4.6 Search Bar

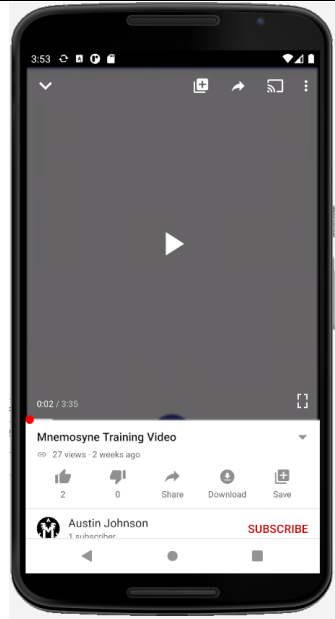
Test Name:	Search Bar – Round 1	Search Bar – Round 2
Test Start Date & Time:	7/27/21, 1:53pm	8/4/21, 7:15pm
Test End Date & Time:	7/27/21, 1:54pm	8/4/21, 7:16pm
Test Conductor:	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment:	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Record at least two different Voice Notes 2) Go to the app menu and select the view notes button 3) Tap on the search bar 4) Type in text to search, and press enter	
Expected Result	1) Only the notes with the searched keyword will be shown	
Witnesses:		Tyler Puschinsky
Deviations:	None	None
Issues Opened:	None	None
Action Items Opened:		
Status	Pass	Pass
Test Conductor Signature/ Date:	Damion Sevilla,	Damion Sevilla,
Witness Signature/ Date:		Tyler Puschinsky, 8/4/21
Customer Signature/ Date:		

Screenshot



4.7 Training Videos

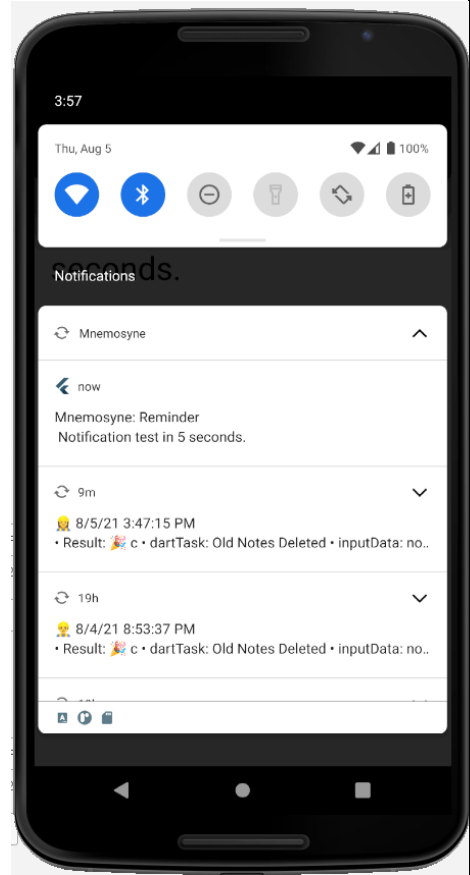
Test Name:	Training Videos – Round 1	Training Videos – Round 2	Training Videos – Round 3
Test Start Date & Time:	8/1/21, 3:40pm	8/1/21, 8:40pm	8/4/21, 7:14pm
Test End Date & Time:	8/1/21, 3:43pm	8/1/21, 8:45pm	8/4/21, 7:15pm
Test Conductor:	Damion Sevilla	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment :	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Go to the app menu, and press the settings menu button 2) Press the Training Videos button		
Expected Result	1) The app will redirect the user to the training video on Youtube		
Witnesses:			Tyler Puschinsky
Deviations:	None	None	None
Issues Opened:	None	None	None
Action Items Opened:			
Status	Fail	Pass	
Test Conductor	Damion Sevilla, 8/1/21	Damion Sevilla, 8/1/21	Damion Sevilla, 8/4/21

Signature/ Date:			
Witness Signature/ Date:			Tyler Puschinsky, 8/4/21
Customer Signature/ Date:			
Screenshot			

4.8 Notifications

Test Name:	Notification – Round 1	Notification – Round
Test Start Date & Time:	8/1/21, 3:43pm	8/4/21, 7:20pm
Test End Date & Time:	8/1/21, 3:45pm	8/4/21, 7:21pm
Test Conductor:	Damion Sevilla	Damion Sevilla
Software Versions:	Android Studio v. 4.2.2 for Windows 64-bit	Android Studio v. 4.2.2 for Windows 64-bit
Test Environment:	Nexus 6 API 30 Emulator	Nexus 6 API 30 Emulator
Steps	1) Start a new voice recording 2) State the notification purpose, and follow up with a keyword and numerical value (I.e., 5 seconds, 7:45 pm, today, tomorrow)	
Expected Result	1) The phone will receive a notification at the specified time or after the specified amount of time has passed	
Witnesses:		Tyler Puschinsky
Deviations:	None	None
Issues Opened:	None	None
Action Items Opened:		
Status	Fail	Pass
Test Conductor Signature/ Date:	Damion Sevilla, 8/1/21	Damion Sevilla, 8/4/21
Witness Signature/ Date:		Tyler Puschinsky, 8/4/21
Customer Signature/ Date:		

Screenshot



5. Defects Identified

Definition of a defect

A *defect* is defined as a system error that doesn't allow the intended action to be completed and evaluated in severity.

In this particular test report, the defects identified have a low severity level because the result of their existence does not interrupt the normal execution of the Mnemosyne application. Table 6 below describes in detail the description of each defect identified and the current status of each defect.

Table 5 below lists all defects by severity that were found during the testing of Mnemosyne.

	Critical	Medium	Low	Total
Identified	0	0	2	2
Resolved	0	0	0	0
Total Open	0	0	2	2

Table 5: Defect Matrix

Table 5.1 below describes the defect categorization in this Test Report.

Severity Level of Defects	
Critical	Errors that result in complete failure and interrupts the regular operation of the system.
Medium	Errors that result in a temporary system failure, but other functionalities remain operable
Low	An expected action did not happen, but the system remains operable. For example, when an error is raised but an incorrect error message is presented.

Table 5.1: Severity Level of Defects

Table 6 below provides the description of each defect identified, resolution, and the current status of each defect.

ID	Severity	Description	Regression Testing Performed?	Current Status
1	Low	<p>Test Case 08: When a job runs, Mnemosyne sends a push notification with status.</p> <p>Resolution: IOS: not fully implemented yet, due to time constraints.</p>	No	Open
2	Low	<p>Test Case 06: User types an existing search field for notes.</p> <p>Mnemosyne searches notes for keywords imputed by users in the field. It should display notes with keywords.</p> <p>Resolution: Pending, the Development team evaluated that the minor defect needs correction due to time constraints.</p>	No	Open

Table 6: Defect Description and Status

6. Exit Criteria

The following conditions determine the completion of testing:

- Testing of all items in scope has been completed
- All test cases have been executed
- All defects have been reported to the Development team for evaluation and correction
- All minor defects have been documented
- The team identifies no additional test cases

7. Conclusion/Sign Off

<i>Name</i>	<i>Signature</i>	<i>Date</i>
Professor Dr. Mir Assadullah		
Team Charlie Project Manager Michael Le		