**國立臺北科技大學**

**資訊工程系**

**軟體測試與驗證**

**Test Design Specification**

**And**

**Test Case Specification**

**Turbo Editor**

**Team#TurboEditor**

**專案成員：古兆瑋（108598019）**

**陳冠穎（108598034）**

**劉孝忠（108598044）**

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# Change History

| Version | Primary Author(s) | Description of Version | Date Completed |
| --- | --- | --- | --- |
| 1.0.0 | 古兆瑋、陳冠穎、劉孝忠 | 樣式及內容初稿。 | 2020/04/22 |

# Test Design Specification

## Test Design Specification Identifier

NTUT-108-STV-TurboEditor\_TDS。

## Features to be Tested

|  |  |  |
| --- | --- | --- |
| **Feature ID** | **Description** | **Use Case** |
| F-T-01 | Create New File | Create File |
| F-T-02 | Open File | Read File |
| F-T-03 | Read File’s Info |
| F-T-04 | Rename File | Update File |
| F-T-05 | Edit File |
| F-T-06 | Undo Editing |
| F-T-07 | Redo Editing |
| F-T-08 | Delete File | Delete File |
| F-T-09 | Search File with REGEX | Search File |
| F-T-10 | Search File with MATCH CASE |
| F-T-11 | Search File with REPLACE |
| F-T-12 | Set Line Numbers | Set Configuration |
| F-T-13 | Set Syntax Highlight |
| F-T-14 | Set Wrap Content |
| F-T-15 | Set Use Monospace |
| F-T-16 | Set Read Only |
| F-T-17 | Set Font Size |
| F-T-18 | Set Theme |
| F-T-19 | Set Accessory View |
| F-T-20 | Set Use the storage Access Framework |
| F-T-21 | Set Keyboard Suggestion and Swipe |
| F-T-22 | Set Auto Save |
| F-T-23 | Set Encoding |
| F-T-24 | Set Ignore Back Button |
| F-T-25 | Set Split The Text If Too Long |
| F-T-26 | Set Fullscreen Mode |
| F-T-27 | Set Open Last Viewed File At Startup |

## Approach Refinements

本次計畫使用User Scenarios測試技巧，將使用者操作案例之步驟逐步以APP UI測試自動化框架之腳本撰寫之，進行自動化測試。

## Test Identification

|  |  |  |
| --- | --- | --- |
| **Test ID** | **Description** | **Related Use Case** |
| T-D-01 | Create New File | Create File |
| T-D-02 | Open File | Read File |
| T-D-03 | Read File’s Info |
| T-D-04 | Rename File | Update File |
| T-D-05 | Edit File |
| T-D-06 | Undo Editing |
| T-D-07 | Redo Editing |
| T-D-08 | Delete File | Delete File |
| T-D-09 | Search File with REGEX | Search File |
| T-D-10 | Search File with MATCH CASE |
| T-D-11 | Search File with REPLACE |
| T-D-12 | Set Line Numbers | Set Configuration |
| T-D-13 | Set Syntax Highlight |
| T-D-14 | Set Wrap Content |
| T-D-15 | Set Use Monospace |
| T-D-16 | Set Read Only |
| T-D-17 | Set Font Size |
| T-D-18 | Set Theme |
| T-D-19 | Set Accessory View |
| T-D-20 | Set Use the storage Access Framework |
| T-D-21 | Set Keyboard Suggestion and Swipe |
| T-D-22 | Set Auto Save |
| T-D-23 | Set Encoding |
| T-D-24 | Set Ignore Back Button |
| T-D-25 | Set Split The Text If Too Long |
| T-D-26 | Set Fullscreen Mode |
| T-D-27 | Set Open Last Viewed File At Startup |

## Item Pass/Fail Criteria

Test Item的Pass/Fail判斷標準，以一功能之敘述句，在測試執行後是否成立為Pass/Fail標準，假使功能測試執行後，使敘述句成立則Pass；反之則Fail，而本次測試之目標為使所有與1.2 Features to be Tested及1.4 Test Identification有關之Test Case通過測試(Pass)。

# Test Case Specification

## Test Case Specification

NTUT-108-STV-TurboEditor\_TCS。

## Test Items

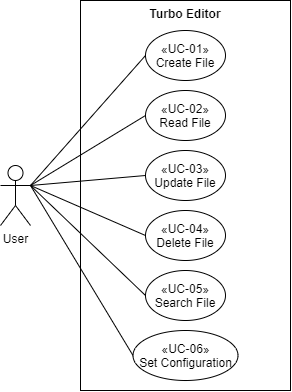
|  |  |
| --- | --- |
| **Test Case ID** | T-C-01 |
| **Test Case Name** | Create File |
| **Related Use Case ID** | UC-01 |
| **Related Test Item** | T-D-01 |
| **Scope** | Turbo Editor |
| **Input Specification** | 1. Launch Application. 2. Click menu button 3. Click "New file" on menu. 4. Input file name. 5. Save the file. |
| **Output Specification** | 1. Menu displays on the left side of screen. 2. File explorer shows up for choosing directory and entering name. 3. Empty new file shows up on the screen for entering content. |

|  |  |
| --- | --- |
| **Test Case ID** | T-C-02 |
| **Test Case Name** | Read File |
| **Related Use Case ID** | UC-02 |
| **Related Test Item** | T-D-02 |
| **Scope** | Turbo Editor |
| **Input Specification** | 1. Launch Application. 2. Click menu button. 3. Click "Open a file" on menu. 4. Select a file to open. |
| **Output Specification** | 1. Menu displays on the left side of screen. 2. File explorer shows up. 3. The selected file opens after clicking on it. 4. File content displays on the editor. |

|  |  |
| --- | --- |
| **Test Case ID** | T-C-03 |
| **Test Case Name** | Update File |
| **Related Use Case ID** | UC-03 |
| **Related Test Item** | T-D-03 |
| **Scope** | Turbo Editor |
| **Input Specification** | 1. Launch Application. 2. Click menu button. 3. Click "Open a file" on menu. 4. Select an existing file to open. 5. Edit content of the opened file. 6. Click undo button. 7. Click redo button. 8. Click save button. 9. Click “Save”. 10. Click menu of processing file . 11. Click rename button. 12. Enter new file name. 13. Click “OK”. 14. Click menu button. 15. Click “Open a file” button. 16. Select the file just renamed. 17. Edit content. 18. Click save button. 19. Click “Save as” 20. Enter new file name. 21. Choose directory. 22. Click “SAVE”. 23. Click menu button. 24. Click “Open a file” 25. Select the file just saved. |
| **Output Specification** | 1. Menu displays on the left side of screen. 2. File explorer shows up. 3. The selected file opens after clicking on it. 4. Original content displays on the editor. 5. Change of content displays on the editor. 6. The change is undone after clicking undo button. 7. The change is redone after clicking redo button. 8. The menu of processing file shows up at the top-right corner of the screen. 9. Rename dialogue pops up for new file name. 10. Message of file cannot be renamed at the bottom of editor. 11. “Save as” dialogue pops up for file “Name” and “Folder”. 12. File explorer shows up for choosing directory and entering name. |

|  |  |
| --- | --- |
| **Test Case ID** | T-C-04 |
| **Test Case Name** | Search File |
| **Related Use Case ID** | UC-04 |
| **Related Test Item** | T-D-04 |
| **Scope** | Turbo Editor |
| **Input Specification** | 1. Launch Application. 2. Click menu button 3. Click "Open a file" on menu. 4. Click search icon. 5. Enter text for searching. 6. Select the wanted file in searching results. |
| **Output Specification** | 1. Menu displays on the left side of screen. 2. File explorer shows up. 3. Search field shows up for input 4. Search results displays on screen. 5. The selected file opens after clicking on it. |

|  |  |
| --- | --- |
| **Test Case ID** | T-C-05 |
| **Test Case Name** | Set Configuration |
| **Related Use Case ID** | UC-05 |
| **Related Test Item** | T-D-05 |
| **Scope** | Turbo Editor |
| **Input Specification** | 1. Launch Application. 2. Click menu button 3. Click "Preferences" on menu. 4. Enable the features. 5. Disable the features. |
| **Output Specification** | 1. Menu displays on the left side of screen. 2. Preferences menu displays on the right side of screen. 3. The selected feature toggle button is on. 4. The selected feature toggle button is off. |



|  |  |
| --- | --- |
| **No** | UC-01 |
| **Use Case Name** | Create File |
| **Scope** | Turbo Editor |
| **Level** | User-goal |
| **Primary Actor** | User |
| **Stakeholders and Interests** | User: Intent to Create a New File. |
| **Preconditions** | None. |
| **Success Guarantee** | A File Created or Overwrote. |
| **Main success Scenario** | 1. User send “New File” request. 2. User input Filename. 3. User send “SAVE” request. 4. Turbo Editor will create a new File. |
| **Extensions** | 2a. User wants to overwrite an existed File.   1. User send “SAVE” request. 2. Turbo Editor will ask the User whether to overwrite the existed File. 3. User send “OK” request.   2b. A File with the Filename that User just input is already exist.   1. User send “SAVE” request. 2. Turbo Editor will create a new File but name it after a new alias. |
| **Special Requirements** | None. |
| **Technology** | None. |
| **Frequency of Occurrence** | Often. |
| **Miscellaneous** | None. |

|  |  |
| --- | --- |
| **No** | UC-02 |
| **Use Case Name** | Read File |
| **Scope** | Turbo Editor |
| **Level** | User-goal |
| **Primary Actor** | User |
| **Stakeholders and Interests** | User: Intent to Read an existed File. |
| **Preconditions** | None. |
| **Success Guarantee** | A File’s content showed. |
| **Main success Scenario** | 1. User select an existed File. 2. User send “Open a File” request. 3. File’s content and its Info showed. |
| **Extensions** | None. |
| **Special Requirements** | None. |
| **Technology** | None. |
| **Frequency of Occurrence** | Often. |
| **Miscellaneous** | None. |

|  |  |
| --- | --- |
| **No** | UC-03 |
| **Use Case Name** | Update File |
| **Scope** | Turbo Editor |
| **Level** | User-goal |
| **Primary Actor** | User |
| **Stakeholders and Interests** | User: Intent to Update an existed File. |
| **Preconditions** | None. |
| **Success Guarantee** | A File Updated. |
| **Main success Scenario** | 1. User select an existed File. 2. User send “Update” request. 3. User edit File’s content. 4. User send “Save” request. 5. A File Updated to its new state. |
| **Extensions** | 2a. User send “Rename” request.   1. User Input new Filename. 2. User send “SAVE” request. 3. File Updated to its new Filename.   3a. User send “Undo” request.   1. File recover to its previous state.   3b. User send “Redo” request.   1. File recover to its next state.   4a. User send “Save as” request.   1. User select Folder. 2. User Input new Filename. 3. User send “SAVE” request. 4. File Updated to its new Path.   4b. User send “SAVE” request.   1. File Updated.   4c. User send “CANCEL” request.   1. File not Updated. |
| **Special Requirements** | None. |
| **Technology** | None. |
| **Frequency of Occurrence** | Often. |
| **Miscellaneous** | None. |

|  |  |
| --- | --- |
| **No** | UC-04 |
| **Use Case Name** | Delete File |
| **Scope** | Turbo Editor |
| **Level** | User-goal |
| **Primary Actor** | User |
| **Stakeholders and Interests** | User: Intent to Delete an existed File. |
| **Preconditions** | None. |
| **Success Guarantee** | A File Deleted. |
| **Main success Scenario** | 1. User select an existed File. 2. User send “DELETE” request. 3. User send “YES” request. 4. A File Deleted. |
| **Extensions** | 3a. User send “NO” request.   1. File not Deleted. |
| **Special Requirements** | None. |
| **Technology** | None. |
| **Frequency of Occurrence** | Often. |
| **Miscellaneous** | None. |

|  |  |
| --- | --- |
| **No** | UC-05 |
| **Use Case Name** | Search File |
| **Scope** | Turbo Editor |
| **Level** | User-goal |
| **Primary Actor** | User |
| **Stakeholders and Interests** | User: Intent to Search an existed File. |
| **Preconditions** | None. |
| **Success Guarantee** | A File Searched. |
| **Main success Scenario** | 1. User input File’s Info. 2. User send “Search” request. 3. A File Searched. |
| **Extensions** | 3a. A File with that Searching Info do not exist.   1. File not Searched. |
| **Special Requirements** | None. |
| **Technology** | None. |
| **Frequency of Occurrence** | Often. |
| **Miscellaneous** | None. |

|  |  |
| --- | --- |
| **No** | UC-06 |
| **Use Case Name** | Set Configuration |
| **Scope** | Turbo Editor |
| **Level** | User-goal |
| **Primary Actor** | User |
| **Stakeholders and Interests** | User: Intent to set Turbo Editor’s Configuration. |
| **Preconditions** | None. |
| **Success Guarantee** | A Configuration Set. |
| **Main success Scenario** | 1. User send “Preference” request. 2. User Set or Toggle Configuration. 3. User send “Set Configuration” request. 4. Configuration Set. |
| **Extensions** | 2a. User send “Default” request.   1. Configuration reset to its initial state.   3a. User send “Cancel” request.   1. Configuration not Set. |
| **Special Requirements** | None. |
| **Technology** | None. |
| **Frequency of Occurrence** | Often. |
| **Miscellaneous** | None. |

## Environmental Needs

本測試考量測試中觀測及紀錄(文字、圖像及影像)的方便性，將計畫於個人電腦(PC)上之Android模擬器，透過框架進行APP UI自動化測試，其硬體規格及軟體規格如下。

|  |  |  |
| --- | --- | --- |
| **Hardware Specification and Configuration** | | |
| **種類** | **描述** | **備註** |
| 中央處理器 | Intel® Core™ i5-4590 |  |
| 圖形處理器 | Intel® HD Graphics 4600 | 位於中央處理器內 |
| 硬碟 | INTEL SSDSC2CT240A4 | Intel® SSD 335 Series |
| 記憶體 | DDR3-1333 | 16 GB |
| 顯示器 | VW247N、VN289N |  |

|  |  |  |
| --- | --- | --- |
| **Software Specification and Configuration** | | |
| **名稱** | **版本** | **備註** |
| Microsoft Windows 10專業版 | 1903 |  |
| Android Studio | 3.6.2 | SDK Platform Required |
| Appium | 1.15.1 | Appium Doctor Required |

## Special Procedural Requirements

無。

## Intercase Dependencies

無。

# Glossary

|  |  |
| --- | --- |
| **SUT** | 軟體系統測試則通常是以被測系統（System Under Test，SUT）表示正在被測試的系統，目的是測試系統是否能正確操作。這一詞語常用於軟體測試中。[1] |
|  |  |
| **Android** | Android（讀音：英：['ændrɔɪd]，美：[ˈænˌdrɔɪd]），中文常譯作安卓或安致[15]，是一個基於Linux核心的開放原始碼行動作業系統，由Google（Google）成立的開放手機聯盟持續領導與開發，主要設計用於觸控螢幕行動裝置如智慧型手機和平板電腦與其他可攜式裝置。[2] |
|  |  |
| **APP** | A short of “Application” |
|  |  |
| **Turbo Editor** | Simple, Powerful and Open Source Text Editor for Android. Built following the latest Android Guidelines to make the experience the most intuitive on the Store, also on Tablets![3][4] |
|  |  |
| **Appium** | Appium is an open source test automation framework for use with native, hybrid and mobile web apps.  It drives iOS, Android, and Windows apps using the WebDriver protocol.[5] |

# Reference

[1] 被測系統(Wikipedia) <https://zh.wikipedia.org/wiki/%E8%A2%AB%E6%B5%8B%E7%B3%BB%E7%BB%9F>

[2] Android(Wikipedia) <https://zh.wikipedia.org/wiki/Android>

[3] Turbo Editor(Google Play) <https://play.google.com/store/apps/details?id=com.maskyn.fileeditor>

[4] Turbo Editor(Github) <https://github.com/vmihalachi/turbo-editor>

[5] Appium <http://appium.io/>

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