|  |  |
| --- | --- |
| **Logo_FPT_University_doc** | **MINISTRY OF EDUCATION AND TRAINING** |

|  |
| --- |
| **FPT UNIVERSITY** |
| Capstone Project Document |
| FPT University Library Management System |
|  |
| |  |  | | --- | --- | | **Group 4** | | | **Group Members** | QUANLM – Team Leader – 60209  PHUNH – Team Member – 60177  BAOTHQ – Team Member – 60006  DIEPTN – Team Member – 60128 | | **Supervisor** | TAINT | | **Ext Supervisor** |  | | **Capstone Project code** | LIB | |
|  |

|  |
| --- |
| - Ho Chi Minh City, 01/2012 - |

**Report No.5: Software Test Documentation (STD)**

1. **Introduction**
   1. System Overview

The LIB system allows users to perform the following actions:

* + - Manage Catalogue (Titles and Copies): add, edit or remove one of the titles and copies in the system.
    - Manage User Information: add, edit or remove users from the system.
    - Manage Borrowing and Returning Transaction: approve and modify the transaction between users and library.
    - Generate Reports: generate reports bases on the information from the library.
  1. Test Approach

Testing procedure of PTS will be based on the use cases listed in the requirement specifications document.

1. **Test Plan**
   1. Features to be tested
   2. Features not to be tested

N/A

* 1. Testing Tools and Environment
  + Windows 7 operating system
  + dotNET Framework 3.5
  + MSSQL 2008
  + IE 9.0 & Google Chrome
  + Windows Internet Information Service (IIS) 7.0

1. **Test Cases**
   1. **Case 1: Insert Author**
      1. Purpose

Test if the Insert Author function correctly works or not.

* + 1. Inputs
       1. Normal

Name: Mark Twain

* + - 1. Abnormal

Name: The author name is too longggggggggggggggggggggggggggggggggggggggggggggggggggggg

* + - 1. Null

Name: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A new Author with name “Mark Twain” will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Author is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the length of author name.

No new Author will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Author is not created: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No new Author will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Author is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “QuảnlýTácgiả” feature from the Main menu.
* Click on the [Tạomới] button to create a new Author.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 2: Edit Author**
     1. Purpose

Test if the Edit Author function correctly works or not.

* + 1. Inputs
       1. Normal

Name: Mark Twain

* + - 1. Abnormal

Name: The author name is too longggggggggggggggggggggggggggggggggggggggggggggggggggggg

* + - 1. Null

Name: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

An Author will be updated with new name “Mark Twain” in database.

* + - * 1. Pass/Fail criteria

After the procedure if the Author is updated: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the length of author name.

No new Author will be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the Author is not updated: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No Author will be updated in database.

* + - * 1. Pass/Fail criteria

After the procedure if the Author is not updated: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “QuảnlýTácgiả” feature from the Main menu.
* Click on a record to be edit and change the information in the right of the Management form.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 3: Insert Category**
     1. Purpose

Test if the Insert Category function correctly works or not.

* + 1. Inputs
       1. Normal

Name: Science

* + - 1. Abnormal

Name: The Category name is too longggggggggggggggggggggggggggggggggggggggggggggggggggggg

* + - 1. Null

Name: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A new Category with name “Science” will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Category is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the length of Category name.

No new Category will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Category is not created: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No new Category will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Category is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý danh mục” feature from the Main menu.
* Click on the [Tạo mới] button to create a new Category.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 4: Edit Category**
     1. Purpose

Test if the Edit Category function correctly works or not.

* + 1. Inputs
       1. Normal

Name: Science

* + - 1. Abnormal

Name: The Category name is too longggggggggggggggggggggggggggggggggggggggggggggggggggggg

* + - 1. Null

Name: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A Category will be updated with new name “Science” in database.

* + - * 1. Pass/Fail criteria

After the procedure if the Category is updated: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the length of Category name.

No new Category will be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the Category is not updated: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No Category will be updated in database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Category is not updated: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý danh mục” feature from the Main menu.
* Click on a record to be edit and change the information in the right of the Management form.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 5: Insert Publisher**
     1. Purpose

Test if the Insert Publisher function correctly works or not.

* + 1. Inputs
       1. Normal

Name: NXB Trẻ

* + - 1. Abnormal

Name: The Publisher name is too longggggggggggggggggggggggggggggggggggggggggggggggggggggg

* + - 1. Null

Name: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A new Publisher with name “NXB Trẻ” will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Publisher is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the length of Publisher name.

No new Publisher will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Publisher is not created: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No new Publisher will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Publisher is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý NXB” feature from the Main menu.
* Click on the [Tạo mới] button to create a new Publisher.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 6: Edit Publisher**
     1. Purpose

Test if the Edit Publisher function correctly works or not.

* + 1. Inputs
       1. Normal

Name: NXB Trẻ

* + - 1. Abnormal

Name: The Publisher name is too longggggggggggggggggggggggggggggggggggggggggggggggggggggg

* + - 1. Null

Name: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A Publisher will be updated with new name “NXB Trẻ” in database.

* + - * 1. Pass/Fail criteria

After the procedure if the Publisher is updated: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the length of Publisher name.

No Publisher will be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Publisher is not created: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No Publisher will be updated in database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Publisher is not updated: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý NXB” feature from the Main menu.
* Click on a record to be edit and change the information in the right of the Management form.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 7: Insert Catalogue**
     1. Purpose

Test if the Insert Catalogue function correctly works or not.

* + 1. Inputs
       1. Normal

ISBN: 0000000000001

Tựa: Tây du ký

Nhà xuất bản: NXB Trẻ

Thuộc danh mục: Văn học

Năm: 2011

Giá: 50000

Số lượng bản sao: 10

Tác giả: Ngô Thừa Ân

Số lần gia hạn cho phép: 1

Trong vòng: 7 ngày

Mô tả chi tiết: truyện thần thoại

* + - 1. Abnormal

ISBN: 01

Tựa: Tây du ký zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz

Nhà xuất bản: NXB Trẻ

Thuộc danh mục: Văn học

Năm: 2011

Giá: 50000

Số lượng bản sao: 10

Tác giả: Ngô Thừa Ân

Số lần gia hạn cho phép: 1

Trong vòng: 7 ngày

Mô tả chi tiết: truyện thần thoại

* + - 1. Null

ISBN: (leave blank)

Tựa: (leave blank)

Nhà xuất bản: [None]

Thuộc danh mục: [None]

Năm: 2012

Giá: 0

Số lượng bản sao: 0

Tác giả: [None]

Số lần gia hạn cho phép: 0

Trong vòng: 7 ngày

Mô tả chi tiết: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A new Catalogue with name the above information will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Catalogue is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the errors of Catalogue.

No new Catalogue will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Catalogue is not created: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No new Catalogue will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Catalogue is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý đầu mục” feature from the Main menu.
* Click on the [Tạo mới] button to create a new Catalogue.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 8: Edit Catalogue**
     1. Purpose

Test if the Edit Catalogue function correctly works or not.

* + 1. Inputs
       1. Normal

ISBN: 0000000000001

Tựa: Tây du ký

Nhà xuất bản: NXB Trẻ

Thuộc danh mục: Văn học

Năm: 2011

Giá: 50000

Số lượng bản sao: 10

Tác giả: Ngô Thừa Ân

Số lần gia hạn cho phép: 1

Trong vòng: 7 ngày

Mô tả chi tiết: truyện thần thoại

* + - 1. Abnormal

ISBN: 0000000000001

Tựa: Tây du ký zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz

Nhà xuất bản: NXB Trẻ

Thuộc danh mục: Văn học

Năm: 2011

Giá: 50000

Số lượng bản sao: 10

Tác giả: Ngô Thừa Ân

Số lần gia hạn cho phép: 1

Trong vòng: 7 ngày

Mô tả chi tiết: truyện thần thoại

* + - 1. Null

ISBN: (leave blank)

Tựa: (leave blank)

Nhà xuất bản: [None]

Thuộc danh mục: [None]

Năm: 2012

Giá: 0

Số lượng bản sao: 0

Tác giả: [None]

Số lần gia hạn cho phép: 0

Trong vòng: 7 ngày

Mô tả chi tiết: (leave blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A Catalogue with the specific ISBN will be updated with the above information to the database.

* + - * 1. Pass/Fail criteria

After the procedure if the Catalogue is updated: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the errors of the Catalogue.

No Catalogue will be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the Catalogue is not updated: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about leaving information blank.

No Catalogue will be updated in database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Catalogue is not updated: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý đầu mục” feature from the Main menu.
* Click on a record to be edit and change the information in the right of the Management form.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 9: Insert Copy**
     1. Purpose

Test if the Insert Copy function correctly works or not.

* + 1. Inputs
       1. Normal

Number of copy: 8

* + - 1. Abnormal

Number of copy: 0

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A numbers of Copies with generated barcodes will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Copy is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

No new Copy will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Copy is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý danh mục” feature from the Main menu.
* Select a catalogue to edit or add new catalogue
* Navigate to “Danh sách bản sao chi tiết” or enter a number of copies on the “insert page”
* Click on the [Thêm sách] button to create new Copies.
* Enter the number of copies on the “Thêm sách” page.
* Click “Đồng ý”
* Click on [Lưu]
  1. **Case 10: Delete Copy**
     1. Purpose

Test if the Delete Copy function correctly works or not.

* + 1. Inputs

N/A

* + 1. Expected Outputs & Pass/Fail criteria
       1. Expected Output

A Copy with specific barcode will be deleted for the database.

* + - 1. Pass/Fail criteria

After the procedure if the Copy is updated: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý danh mục” feature from the Main menu.
* Select a catalogue to edit.
* Navigate to “Danh sách bản sao chi tiết” or enter a number of copies on the “insert page”
* Click on the on a specific barcode.
* Clck “Xóa” button.
* Click “Đồng ý”.
  1. **Case 11: Insert Rental**
     1. Purpose

Test if the Insert Rental function correctly works or not.

* + 1. Inputs
       1. Normal

Mã độc giả: PhuNH60177

Mã sách: 00001000013

Ngày mượn: 19/03/2012

Ngày trả: 26/03/2012

* + - 1. Abnormal

Mã độc giả: PhuN

Mã sách: 01

Ngày mượn: 19/03/2012

Ngày trả: 12/03/2012

* + - 1. Null

Mã độc giả: (blank)

Mã sách: (blank)

Ngày mượn: 19/03/2012

Ngày trả: 26/03/2012

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A new Rental with above information will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Rental is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the errors of Rental information.

No new Rental will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Rental is not created: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about the errors of Rental information.

No new Rental will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Rental is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý mượn trả” feature from the Main menu.
* Click on the tab [Mượn trả].
* Click on the button [Ghi mượn].
* Type in the Inputs.
* Click on [Ghi mượn]
  1. **Case 12: Expand Rental**
     1. Purpose

Test if the Expand Rental function correctly works or not.

* + 1. Inputs
       1. Normal

Ngày hết hạn mới: 26/03/2012

* + - 1. Abnormal

Ngày hết hạn mới: 12/03/2012

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A Rental will be updated with new return date to database.

* + - * 1. Pass/Fail criteria

After the procedure if the Rental is updated: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the error of return date of Rental.

No Rental will be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new Rental is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý mượn trả” feature from the Main menu.
* Click on the tab [Mượn trả].
* Select a rental to be expanded.
* Click on the button [Gia hạn].
* Choose the new return date.
* Click on [Gia hạn]
  1. **Case 13: Finish Rental**
     1. Purpose

Test if the Finish Rental function correctly works or not.

* + 1. Inputs
       1. Normal

Ngày trả: 19/03/2012

Tình trạng: đã trả

* + - 1. Abnormal

Ngày trả: 12/03/2012

Tình trạng: đã trả

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A Rental will be updated with return date and status to database.

* + - * 1. Pass/Fail criteria

After the procedure if the Rental is updated: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the errors of Rental information.

Rental will not be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the Rental is not updated: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quản lý mượn trả” feature from the Main menu.
* Click on the tab [Mượn trả].
* Select a rental to be finished.
* Click on the button [Ghi trả].
* Choose the return date and status.
* Click on [Ghi trả]
  1. **Case 14: Insert User**
     1. Purpose

Test if the Insert User function correctly works or not.

* + 1. Inputs
       1. Normal

Mã người dùng: PhuNH60177

Tên người dùng: Phú đẹp trai

Vai trò: Độc giả

Ngày sinh: 01/09/1988

Số CMND: 025511422

Số điện thoại: 01696433444

Ngày cấp thẻ: 19/03/2012

Ngày hết hạn: 20/03/2012

Tình trạng: Đang hoạt động

Email: [phunh60177@fpt.edu.vn](mailto:phunh60177@fpt.edu.vn)

Địa chỉ: QTSC, đường Tô Ký, Quận 12, TP.HCM

* + - 1. Abnormal

Mã người dùng: PhuNH60177handsomeeeeeeeeeeeeeeeeeeeeeeeeeeeeee

Tên người dùng: Phú đẹp traiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii

Vai trò: Độc giả

Ngày sinh: 01/09/2012

Số CMND: 02551142222222222222222222222222222222222222222

Số điện thoại: 016964334444444444444444444444444444444444444

Ngày cấp thẻ: 20/03/2012

Ngày hết hạn: 18/03/2012

Tình trạng: Đang hoạt động

Email: phunh60177

Địa chỉ: QTSC, đường Tô Ký, Quận 12, TP.HCMmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm

* + - 1. Null

Mã người dùng: (blank)

Tên người dùng: (blank)

Vai trò: Độc giả

Ngày sinh: 01/09/1988

Số CMND: (blank)

Số điện thoại: (blank)

Ngày cấp thẻ: 19/03/2012

Ngày hết hạn: 20/03/2012

Tình trạng: Đang hoạt động

Email: (blank)

Địa chỉ: (blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

A new User with id PhuNH60177 will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new User is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the errors of User information.

No new User will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new User is not created: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about the errors of User information.

No new User will be inserted into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new User is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quảnlý người dùng” feature from the Main menu.
* Click on the [Tạomới người dùng] button to create a new User.
* Type in the Inputs.
* Click on [Lưu]
  1. **Case 15: Edit User**
     1. Purpose

Test if the Edit User function correctly works or not.

* + 1. Inputs
       1. Normal

Tên người dùng: Phú đẹp trai

Vai trò: Độc giả

Ngày sinh: 01/09/1988

Số CMND: 025511422

Số điện thoại: 01696433444

Ngày cấp thẻ: 19/03/2012

Ngày hết hạn: 20/03/2012

Tình trạng: Đang hoạt động

Email: [phunh60177@fpt.edu.vn](mailto:phunh60177@fpt.edu.vn)

Địa chỉ: QTSC, đường Tô Ký, Quận 12, TP.HCM

* + - 1. Abnormal

Tên người dùng: Phú đẹp traiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii

Vai trò: Độc giả

Ngày sinh: 01/09/2012

Số CMND: 02551142222222222222222222222222222222222222222

Số điện thoại: 016964334444444444444444444444444444444444444

Ngày cấp thẻ: 20/03/2012

Ngày hết hạn: 18/03/2012

Tình trạng: Đang hoạt động

Email: phunh60177

Địa chỉ: QTSC, đường Tô Ký, Quận 12, TP.HCMmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm

* + - 1. Null

Tên người dùng: (blank)

Vai trò: Độc giả

Ngày sinh: 01/09/1988

Số CMND: (blank)

Số điện thoại: (blank)

Ngày cấp thẻ: 19/03/2012

Ngày hết hạn: 20/03/2012

Tình trạng: Đang hoạt động

Email: (blank)

Địa chỉ: (blank)

* + 1. Expected Outputs & Pass/Fail criteria
       1. Normal
          1. Expected Output

The user PhuNH60177’s information will be updated to database.

* + - * 1. Pass/Fail criteria

After the procedure if the new User is created: Pass

Or else: Fail

* + - 1. Abnormal
         1. Expected Output

A message will be shown remind the user about the errors of User information.

User will not be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the User is not updated: Pass

Or else: Fail

* + - 1. Null
         1. Expected Output

A message will be shown remind the user about the errors of User information.

User will not be updated into database.

* + - * 1. Pass/Fail criteria

After the procedure if the new User is not created: Pass

Or else: Fail

* + 1. Test Procedure
* User logged in as a Librarian
* Select the “Quảnlý người dùng” feature from the Main menu.
* Click on the [chỉnh sửa thông tin người dùng] button to edit user.
* Type in the Inputs.
* Click on [Lưu]

1. **Checklists**
   1. Checklist of Validation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Check item** | **Check result** | **Reviewer** | **Reference** |
| 1 | Are exceptions used to indicate error rather than returning status or error codes? | □OK　□NG　□None-correspondence |  |  |
| 2 | Are all classes and public methods commented with .NET style comments?  Note that <summary> comments should discuss the "what" of public methods.  Discussion of "how" should be in <remarks> blocks or in-line with the code in question. | □OK　□NG　□None-correspondence |  |  |
| 3 | Are method arguments validated and rejected with an exception if they are invalid? | □OK　□NG　□None-correspondence |  |  |
| 4 | Are Debug.Asserts used to verify assumptions about the functioning of the code?  Comments like, "j will be positive" should be rewritten as Asserts. | □OK　□NG　□None-correspondence |  |  |
| 5 | Do classes that should not be instantiated have a private constructor? | □OK　□NG　□None-correspondence |  |  |
| 6 | Are classes declared as value types only infrequently used as method parameters, returned from methods or stored in Collections? | □OK　□NG　□None-correspondence |  |  |
| 7 | Are classes, methods and events that are specific to an assembly marked as internal? | □OK　□NG　□None-correspondence |  |  |
| 8 | Are singletons that may be accessed by multiple threads instantiated correctly?  See the Enterprise Solution Patterns book, p. 263. | □OK　□NG　□None-correspondence |  |  |
| 9 | Are methods that must be overriden by derived classes marked as abstract? | □OK　□NG　□None-correspondence |  |  |
| 10 | Are classes that should not be overriden marked as sealed? | □OK　□NG　□None-correspondence |  |  |
| 11 | Is "as" used for possibly incorrect downcasts? | □OK　□NG　□None-correspondence |  |  |
| 12 | Do classes override ToString instead of defining a Dump method for outputting the object's state? | □OK　□NG　□None-correspondence |  |  |
| 13 | Are log messages sent to the logging component instead of Console? | □OK　□NG　□None-correspondence |  |  |
| 14 | Are finally blocks used for code that must execute following a try? | □OK　□NG　□None-correspondence |  |  |
| 15 | Is foreach used in preference to the for(int i...) construct? | □OK　□NG　□None-correspondence |  |  |
| 16 | Are properties used instead of implementing getter and setter methods? | □OK　□NG　□None-correspondence |  |  |
| 17 | Are readonly variables used in preference to properties without setters? | □OK　□NG　□None-correspondence |  |  |
| 18 | Is the override keyword used on all methods that are overriden by derived classes? | □OK　□NG　□None-correspondence |  |  |
| 19 | Are interface classes used in preference to abstract classes? | □OK　□NG　□None-correspondence |  |  |
| 20 | Is code written against an interface rather than an implementing class? | □OK　□NG　□None-correspondence |  |  |
| 21 | Do all objects that represent "real-world" or expensive resources implement the IDisposable pattern? | □OK　□NG　□None-correspondence |  |  |
| 22 | Are all objects that implement IDisposable instantiated in a using block? | □OK　□NG　□None-correspondence |  |  |
| 23 | Is the lock keyword used in preference to the Monitor.Enter construct? | □OK　□NG　□None-correspondence |  |  |
| 24 | Are threads awakened from wait states by events or the Pulse construct, rather than "active" waiting such as Sleep()? | □OK　□NG　□None-correspondence |  |  |
| 25 | If equals is overridden, is it done correctly?  The rules for overriding equals are complex, see Richter p153-160 for details. | □OK　□NG　□None-correspondence |  |  |
| 26 | If == and != are overridden, so they redirect to Equals? | □OK　□NG　□None-correspondence |  |  |
| 27 | Do all objects that override Equals also provide an overloaded version of GetHashCode that provides the same semantics as Equals?  Note that overrides to GetHashCode should takeadvantage of the object's member variables, and must return an unchanging hash code. | □OK　□NG　□None-correspondence |  |  |
| 28 | Do all exception classes have a constructor that takes a string and and another constructor that takes a string and an exception? | □OK　□NG　□None-correspondence |  |  |
| 29 | Do all exception classes derive from the base Matrix exceptions and fit correctly into the exception hierarchy? | □OK　□NG　□None-correspondence |  |  |
| 30 | Are all classes that will be marshaled or remoted marked with the Serializable attribute? | □OK　□NG　□None-correspondence |  |  |
| 31 | Do all classes marked with the Serializable attribute have a default constructor?  This includes Exception and EventArgs classes. | □OK　□NG　□None-correspondence |  |  |
| 32 | Do all classes that explicitly implement ISerializable provide both the required GetObjectData and the implied constructor that takes a SerializationInfo and a StreamingContext? | □OK　□NG　□None-correspondence |  |  |
| 33 | When doing floating point calculations, are all constants doubles rather than integers? | □OK　□NG　□None-correspondence |  |  |
| 34 | Do all delegates have a void return type and avoid using output or ref parameters? | □OK　□NG　□None-correspondence |  |  |
| 35 | Do all delegates send the sender (publisher) as the first argument?  This allows the subscriber to tell which publisher fired the event. | □OK　□NG　□None-correspondence |  |  |
| 36 | Are all members of derived EventArg classes read-only?  This prevents one subscriber from modifying the EventArgs, which would affect the other subscribers. | □OK　□NG　□None-correspondence |  |  |
| 37 | Are delegates published as events?  This prevents the subscribers from firing the event, see Lowy, p. 102 for details. | □OK　□NG　□None-correspondence |  |  |
| 38 | Is common setup and teardown nUnit code isolated in Setup and Teardown methods that are marked with the appropriate attribute? | □OK　□NG　□None-correspondence |  |  |
| 39 | Do negative nUnit tests use the ExpectedException attribute to indicate that an exception must be thrown? | □OK　□NG　□None-correspondence |  |  |

* 1. Submission Checklist

*<Put the checklist here. Describe how it is used and the resulted checklist>*

1. **Other material (if any)** (including appendix A)

APPENDIX A. TEST LOGS

A.n Log for test *n*

A.n.1 Test Results

A.n.2 Incident Report