SOFTWARE ENGINEERING
LAB REPORT: 6
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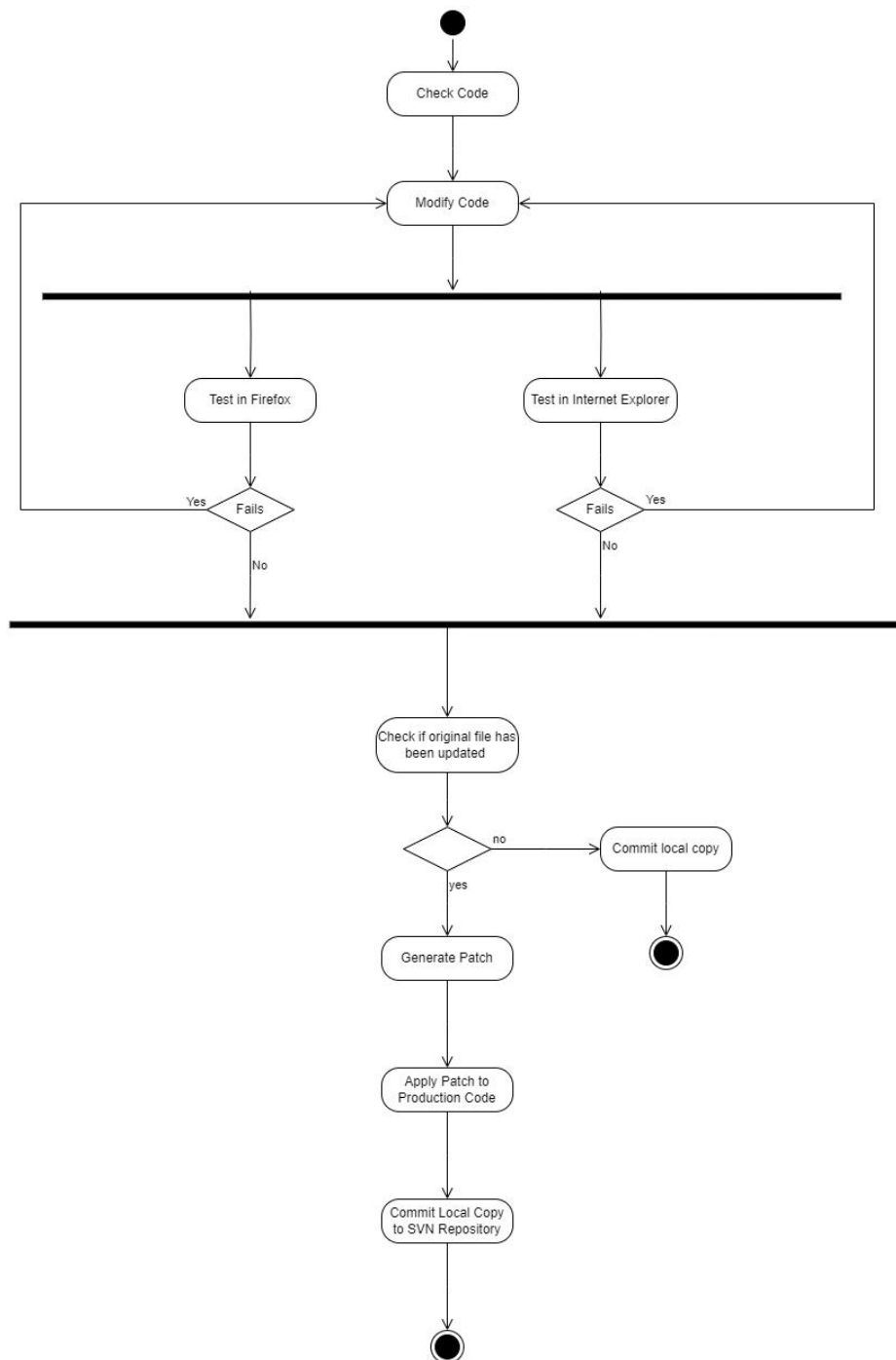# STUDENT ID: 202101014
LAB GROUP: 1

Exercise:

Draw an activity diagram to graphically represent the following workflow
Let us consider the development activities of SE Virtual Labs. The process begins by checking out the code from Subversion repository. Necessary modifications are then made to the checked out code (local copy). Once the developer is done with his changes, the application has to be tested to verify whether the new functionality are working fine. This test has to be performed with two of the more popular web browsers: Firefox and Internet Explorer, to support cross-browser accessibility. If testing fails in at least one Of the two browser, developer goes back to his code, and fixes it. Only when all the browsers pass the test, a patch is generated from the local copy, and applied to the production code. The local copy is then committed resulting in update Of the SVN repository. Note that, if the local copy is committed before generating a patch file, then local changes would get registered, and one won't be further able to generate the patch file.
Note: For further clarification, at any point Of time there exists three versions Of the source code: Production copy, local copy, and copy in SVN repository.

Activity Diagram:

Think over the following questions:

- How would you represent testing of the application with multiple browsers?

Ans:- For the purpose of testing the program across many browsers, we must use fork to make sure that both tasks are completed simultaneously and that output is generated.

- Can generation Of the patch file and update the Subversion repository be done concurrently?

Ans:- No, the patch file will be created first, after which the production code will be patched, and finally the Subversion repository will be updated.

- Can patching the production code and updating the Subversion repository be done in parallel?

Ans:- Applying the Patch to Production Code: This step may be done when the patch has been properly created. Applying the change to the production code completes the process.
After the production code has been patched, this phase can only be finished. Committing Changes to SVN Repository. Once the changes are committed, the SVN repository is updated.

Learning Objectives:

- Identify the basic units of work, and visualize the work flow

The process involves creating a copy of the repository, making adjustments to the local code,and then running Firefox and Internet Explorer simultaneously. The process will execute if the local copy of the code is committed and every browser passes the test; otherwise, it will produce a patch file, commit the local copy of the code, and then update the SVN repository.

- Identify stages from where progress could be made only after a list of criteria is Satisfied

1. The code must be changed if at least one of the two browsers (Internet Explorer and Firefox) fails the testing at the checking step.
2. If the local copy is committed before creating a patch file, in which case the patch file cannot be created.

Class Diagram(BOOK ISSUE Sprint):

Transaction

Transaction_ID
Member_ID
ISBN

Issue()
Reserve()
Due_dt()

Inventory

Title
ISBN
No_of_Books

Add_Books()
Delete_Books()
Update()
Search()

Library Management System

Admin_ID
Name
Position
Email Address

Do_transaction()
Validate_user()
Update_Inventory()

1

Books

Title
ISBN
Author

Search()

0...*

Member

Member_ID
Name
Email Address
No_of_borrowed_books
No_of_reserved_books
No_of_returned_books

Issue_Books()
Search()

1

1

Account

Member_ID
No_of_borrowed_books
No_of_returned_books
No_of_reserved_books

Can_Borrow()
To_return()