

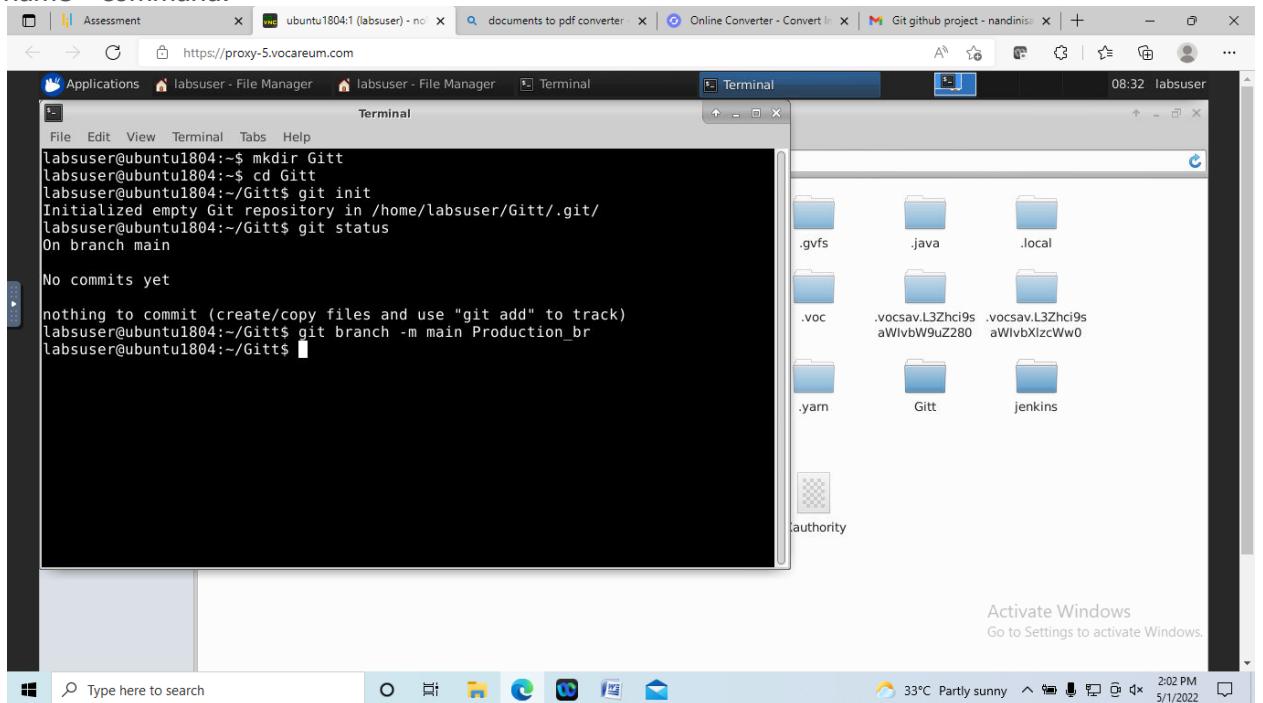
Git and GitHub

Branching Development Model

Steps to perform:

1. Start with the Production branch (master branch), and then create a HotFix and Integration branch.
 - 1.1. Created a directory by using command mkdir Gitt
 - 1.2. Cd Gitt (inside the directory)
 - 1.3. Git init
 - 1.4. Renamed main(master) branch as Production_br
2. Subsequently, create Feature 1 and 2 branches that integrate to the Integration branch as shown below.

2.1. Created Integration branch and switched directly by using git checkout -b <branch name> command.



The screenshot shows a Windows desktop environment. In the center, there is a terminal window titled "Terminal" with the following command history:

```
labsuser@ubuntu1804:~$ mkdir Gitt
labsuser@ubuntu1804:~$ cd Gitt
labsuser@ubuntu1804:~/Gitt$ git init
Initialized empty Git repository in /home/labsuser/Gitt/.git/
labsuser@ubuntu1804:~/Gitt$ git status
On branch main

No commits yet

nothing to commit (create/copy files and use "git add" to track)
labsuser@ubuntu1804:~/Gitt$ git branch -m main Production_br
labsuser@ubuntu1804:~/Gitt$
```

To the right of the terminal is a file explorer window showing a directory structure:

- gvfs
- .java
- .local
- voc
- .vocsav.L3Zhc9s
aWlvbW9uZ280
- .vocsav.L3Zhc9s
aWlvbXlzcWw0
- yarn
- Gitt
- jenkins
- authority

At the bottom of the screen, there is a taskbar with various icons and a system tray showing the date and time (2:02 PM, 5/1/2022).

```
Ubuntu 18.04 LTS - noVNC
```

```
Terminal
```

```
File Edit View Terminal Tabs Help
```

```
labsuser@ubuntu1804:~/Gitts git branch
* Production br
labsuser@ubuntu1804:~/Gitts git branch Hotfix.br
labsuser@ubuntu1804:~/Gitts git checkout -b Integration_br
Switched to a new branch 'Integration br'
labsuser@ubuntu1804:~/Gitts git branch Feature1 br
labsuser@ubuntu1804:~/Gitts git branch Feature2 br
labsuser@ubuntu1804:~/Gitts git branch
  Feature1 br
  Feature2 br
  Hotfix br
* Integration br
  Production br
labsuser@ubuntu1804:~/Gitts
```

Selenium_Maven_Jenkins_Git

Activate Windows
Go to Settings to activate Windows.

Type here to search

32°C Mostly sunny 12:29 PM 5/1/2022

3. Commit some changes in the Feature 2 branch and merge it into the Integration branch.
Delete this branch once merging is complete
- 3.1. switched to Feature2 branch and created text file then committed.

```
Ubuntu 18.04 LTS - noVNC
```

```
Terminal
```

```
File Edit View Terminal Tabs Help
```

```
labsuser@ubuntu1804:~/Gitts git branch
* Production br
labsuser@ubuntu1804:~/Gitts git branch Hotfix.br
labsuser@ubuntu1804:~/Gitts git checkout -b Integration_br
Switched to a new branch 'Integration br'
labsuser@ubuntu1804:~/Gitts git branch Feature1 br
labsuser@ubuntu1804:~/Gitts git branch Feature2 br
labsuser@ubuntu1804:~/Gitts git branch
  Feature1 br
  Feature2 br
  Hotfix br
* Integration br
  Production br
labsuser@ubuntu1804:~/Gitts git checkout Feature2.br
Switched to branch 'Feature2.br'
labsuser@ubuntu1804:~/Gitts touch git.txt
labsuser@ubuntu1804:~/Gitts git add .
labsuser@ubuntu1804:~/Gitts git commit -m "Feature 2 committed"
[Feature2 br f84b574] Feature 2 committed
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitts/git.txt
labsuser@ubuntu1804:~/Gitts
```

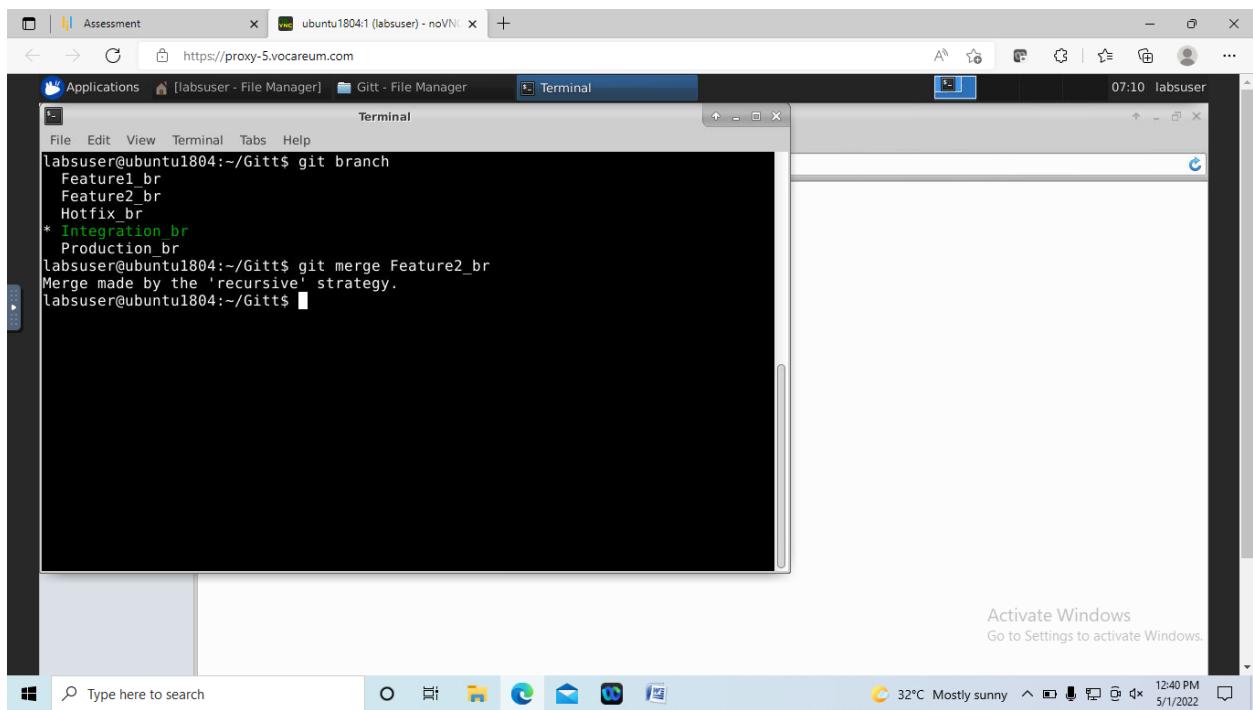
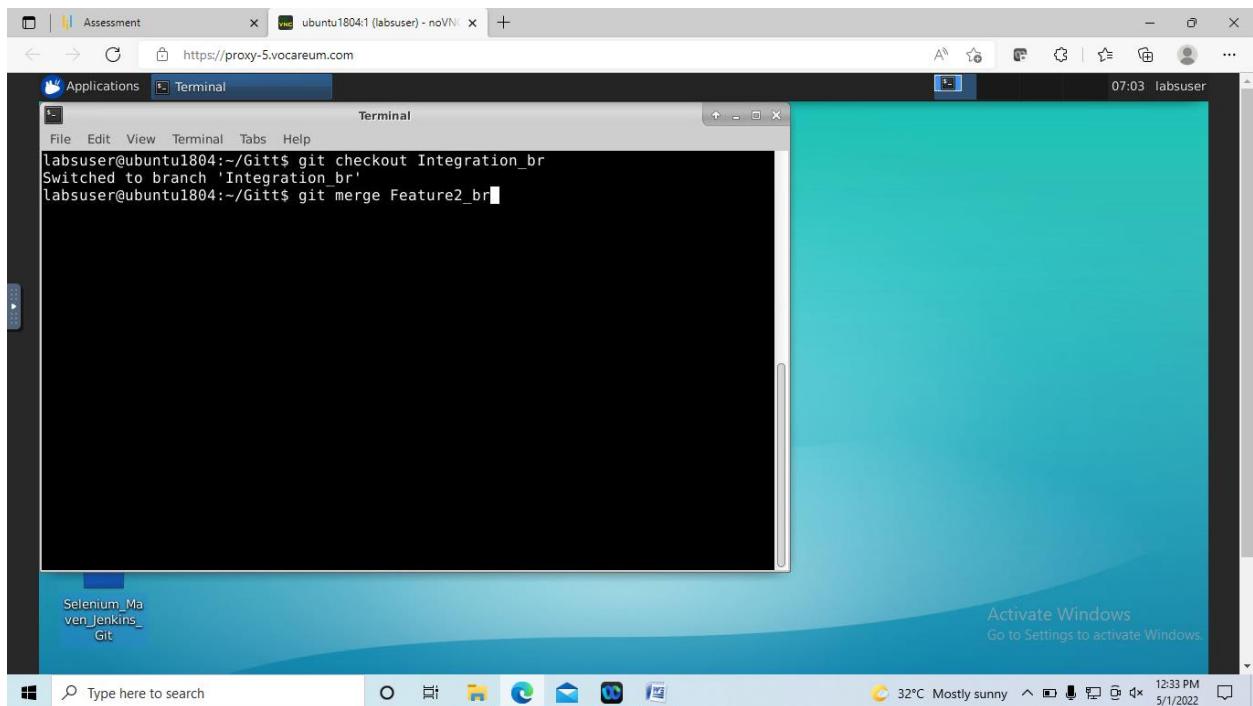
Selenium_Maven_Jenkins_Git

Activate Windows
Go to Settings to activate Windows.

Type here to search

32°C Mostly sunny 12:32 PM 5/1/2022

- 3.2. merged Feature2 branch into Integration branch.



3.3. deleted Feature2 branch

A screenshot of a Windows desktop environment. At the top, there's a taskbar with several icons. In the center, a terminal window is open, showing a session on an Ubuntu 18.04 machine. The terminal output is as follows:

```
Assessment | https://proxy-5.vocareum.com | ubuntu1804:1 (labsuser) - noVNC | +  
Applications [labsuser - File Manager] Gitt - File Manager Terminal 07:10 labsuser  
File Edit View Terminal Tabs Help  
Terminal  
File Edit View Terminal Tabs Help  
labsuser@ubuntu1804:~/Gitt$ git branch  
  Feature1_br  
  Feature2_br  
  Hotfix_br  
* Integration_br  
  Production_br  
labsuser@ubuntu1804:~/Gitt$ git merge Feature2_br  
Merge made by the 'recursive' strategy.  
labsuser@ubuntu1804:~/Gitt$ git branch -d Feature2_br  
Deleted branch Feature2_br (was f84b574).  
labsuser@ubuntu1804:~/Gitt$
```

The terminal window has a dark theme. Below the terminal, the desktop background is visible, showing a light blue gradient. A watermark for "Activate Windows" is present in the bottom right corner of the desktop.

4. Commit some changes in the Feature 1 branch and rebase it to the Integration branch

A screenshot of a Windows desktop environment, similar to the one above. The taskbar and terminal window are identical. The terminal output is as follows:

```
Assessment | https://proxy-5.vocareum.com | ubuntu1804:1 (labsuser) - noVNC | +  
Applications [labsuser - File Manager] Gitt - File Manager Terminal 07:15 labsuser  
File Edit View Terminal Tabs Help  
Terminal  
File Edit View Terminal Tabs Help  
labsuser@ubuntu1804:~/Gitt$ git branch  
* Feature1_br  
  Hotfix_br  
  Integration_br  
  Production_br  
labsuser@ubuntu1804:~/Gitt$ touch text.txt  
labsuser@ubuntu1804:~/Gitt$ git add .  
labsuser@ubuntu1804:~/Gitt$ git commit -m "Feature1 commited"  
[Feature1_branch f4c8feb] Feature1 commited  
1 file changed, 0 insertions(+), 0 deletions(-)  
create mode 100644 Gitt/text.txt  
labsuser@ubuntu1804:~/Gitt$
```

The terminal window has a dark theme. Below the terminal, the desktop background is visible, showing a light blue gradient. A watermark for "Activate Windows" is present in the bottom right corner of the desktop.

A screenshot of a Windows desktop environment. At the top, there is a taskbar with several icons. In the center, a terminal window is open, showing the following git command sequence:

```
labsuser@ubuntu1804:~/Gitt$ git branch
* Feature1_br
  Hotfix_br
  Integration_br
  Production_br
labsuser@ubuntu1804:~/Gitt$ touch text.txt
labsuser@ubuntu1804:~/Gitt$ git add .
labsuser@ubuntu1804:~/Gitt$ git commit -m "Feature1 committed"
[Feature1_br f4c8feb] Feature1 committed
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 Gitt/text.txt
labsuser@ubuntu1804:~/Gitt$ git rebase Feature1_br
Current branch Feature1_br is up to date.
labsuser@ubuntu1804:~/Gitt$
```

The terminal window has tabs for 'Terminal' and 'File Manager'. Above the terminal, there are two browser windows: one titled 'Assessment' and another titled 'ubuntu1804:1 (labsuser) - noVNC'. The status bar at the bottom shows the date and time as 07:19 5/1/2022.

5. Merge the Integration branch into Hotfix and Production branch to update these branches

A screenshot of a Windows desktop environment, similar to the previous one. The taskbar and browser windows are identical. The terminal window now shows the following git command sequence:

```
labsuser@ubuntu1804:~/Gitt$ git branch
  Feature1_br
* Hotfix_br
  Integration_br
  Production_br
labsuser@ubuntu1804:~/Gitt$ git merge Integration_br
Updating 6f07e4d..3ce13d8
Fast-forward
  Gitt/git.txt | 0
  1 file changed, 0 insertions(+), 0 deletions(-)
  create mode 100644 Gitt/git.txt
labsuser@ubuntu1804:~/Gitt$
```

The terminal window has tabs for 'Terminal' and 'File Manager'. The status bar at the bottom shows the date and time as 07:19 5/1/2022.

```
Assessment | ubuntu1804:1 (labsuser) - noVNC | +  
https://proxy-5.vocareum.com  
Applications [labsuser - File Manager] Gitt - File Manager Terminal 07:22 labsuser  
File Edit View Terminal Tabs Help  
Terminal  
File Edit View Terminal Tabs Help  
labsuser@ubuntu1804:~/Gitt$ git branch  
  Feature1_br  
  Hotfix_br  
  Integration_br  
* Production_br  
labsuser@ubuntu1804:~/Gitt$ git merge Integration_br  
Updating 6f67e4d..3ce13d8  
Fast-Forward  
  Gitt/git.txt | 0  
  1 file changed, 0 insertions(+), 0 deletions(-)  
  create mode 100644 Gitt/git.txt  
labsuser@ubuntu1804:~/Gitt$
```

Activate Windows
Go to Settings to activate Windows.

6. Commit some changes in Feature 1 branch, and then merge it into Integration, Hotfix, and Production branch. Delete this branch once merging is complete

```
Assessment | ubuntu1804:1 (labsuser) - noVNC | +  
https://proxy-5.vocareum.com  
Applications [labsuser - File Manager] Gitt - File Manager Terminal 07:24 labsuser  
File Edit View Terminal Tabs Help  
Terminal  
File Edit View Terminal Tabs Help  
labsuser@ubuntu1804:~/Gitt$ git branch  
* Feature1_br  
  Hotfix_br  
  Integration_br  
  Production_br  
labsuser@ubuntu1804:~/Gitt$ touch text2.txt  
labsuser@ubuntu1804:~/Gitt$ git add .  
labsuser@ubuntu1804:~/Gitt$ git commit -m "Feature1 again committed"  
[Feature1 br a03a822] Feature1 again committed  
 1 file changed, 0 insertions(+), 0 deletions(-)  
  create mode 100644 Gitt/text2.txt  
labsuser@ubuntu1804:~/Gitt$
```

Activate Windows
Go to Settings to activate Windows.

A screenshot of a Windows desktop environment. At the top, there's a taskbar with several icons. In the center, a browser window is open to <https://proxy-5.vocareum.com>. Below the browser is a terminal window titled "Terminal". The terminal output is as follows:

```
labsuser@ubuntu1804:~/Gitt$ git branch
  Feature1_br
  Hotfix_br
* Integration_br
  Production_br
labsuser@ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
  Gitt/text.txt | 0
  Gitt/text2.txt | 0
  2 files changed, 0 insertions(+), 0 deletions(-)
  create mode 100644 Gitt/text.txt
  create mode 100644 Gitt/text2.txt
labsuser@ubuntu1804:~/Gitt$
```

The desktop also features a "Activate Windows" watermark in the bottom right corner.

A screenshot of the same Windows desktop environment, showing the terminal window after the merge command was run. The terminal output is as follows:

```
Merge branch 'Feature1_br' into Integration_br
# Please enter a commit message to explain why this merge is necessary,
# especially if it merges an updated upstream into a topic branch.
#
# Lines starting with '#' will be ignored, and an empty message aborts
# the commit.
```

The desktop also features a "Activate Windows" watermark in the bottom right corner.

A screenshot of a Windows desktop environment. At the top, there's a taskbar with icons for File Manager, Gitt - File Manager, and Terminal. The Terminal window is active, showing a session on an Ubuntu 18.04 machine. The user is performing a recursive merge between 'Feature1_br' and 'Hotfix_br'. The terminal output shows the merge process, including file creation and modification details. The desktop background is dark, and the system tray at the bottom right shows the date and time as 5/1/2022.

```
labsuser@ubuntu1804:~/Gitt$ git branch
  Feature1_br
  Hotfix_br
* Integration_br
  Production_br
labsuser@ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
  Gitt/text.txt | 0
  Gitt/text2.txt | 0
  2 files changed, 0 insertions(+), 0 deletions(-)
  create mode 100644 Gitt/text.txt
  create mode 100644 Gitt/text2.txt
labsuser@ubuntu1804:~/Gitt$ git checkout Hotfix_br
Switched to branch 'Hotfix_br'
labsuser@ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
  Gitt/text.txt | 0
  Gitt/text2.txt | 0
  2 files changed, 0 insertions(+), 0 deletions(-)
  create mode 100644 Gitt/text.txt
  create mode 100644 Gitt/text2.txt
labsuser@ubuntu1804:~/Gitt$
```

A second screenshot of the same Windows desktop environment, showing a similar terminal session. This time, the user is attempting a merge between 'Feature1_br' and 'Hotfix_br' but is prompted to enter a commit message. The terminal window is active, and the desktop background is dark. The system tray at the bottom right shows the date and time as 5/1/2022.

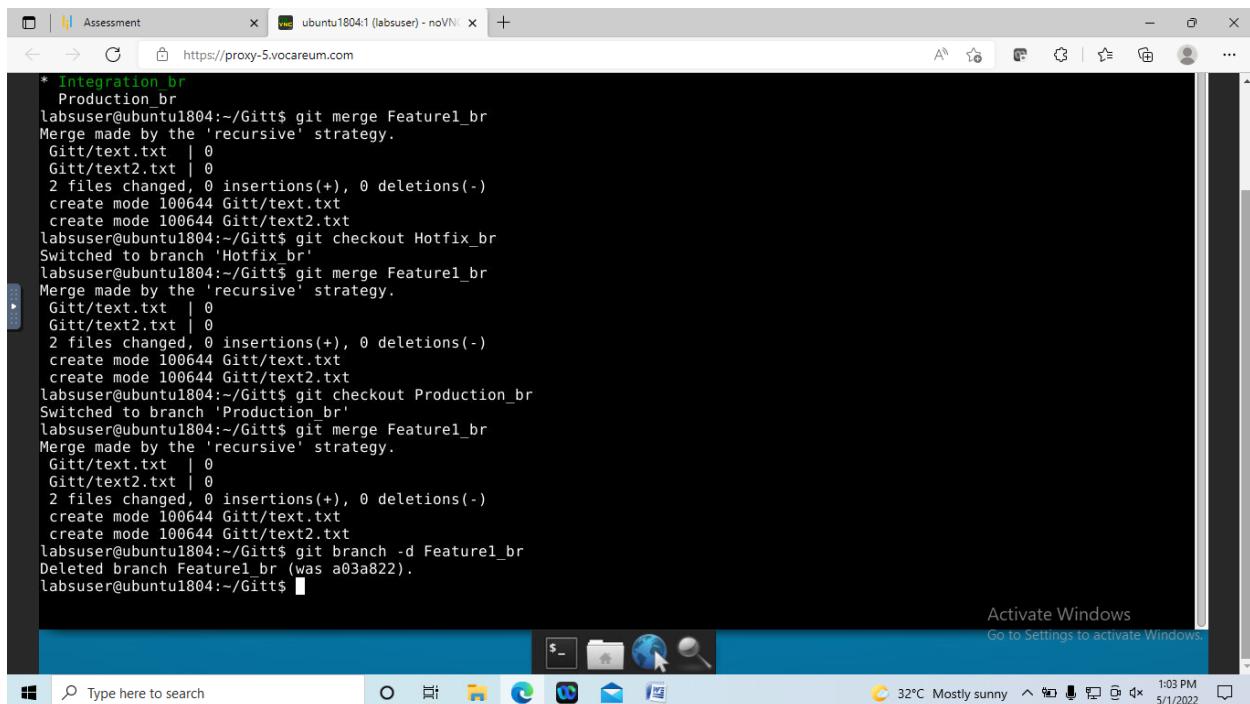
```
Merge branch 'Feature1_br' into Hotfix_br
# Please enter a commit message to explain why this merge is necessary,
# especially if it merges an updated upstream into a topic branch.
#
# Lines starting with '#' will be ignored, and an empty message aborts
# the commit.
~
```

A screenshot of a Windows desktop environment. At the top, there is a taskbar with icons for File Explorer, Mail, and a search bar. The system tray shows the date and time as 5/1/2022 1:02 PM, along with weather information (32°C, Mostly sunny). Below the taskbar, a browser window is open to <https://proxy-5.vocareum.com>. The browser title bar says "Assessment" and "ubuntu1804:1 (labsuser) - noVNC". The main content area of the browser shows a terminal session with the following command-line output:

```
* Integration_br
  Production_br
  labsuser@ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
 Gitt/text.txt | 0
 Gitt/text2.txt | 0
 2 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitt/text.txt
 create mode 100644 Gitt/text2.txt
labsuser@Ubuntu1804:~/Gitt$ git checkout Hotfix_br
Switched to branch 'Hotfix_br'
labsuser@Ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
 Gitt/text.txt | 0
 Gitt/text2.txt | 0
 2 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitt/text.txt
 create mode 100644 Gitt/text2.txt
labsuser@Ubuntu1804:~/Gitt$ git checkout Production_br
Switched to branch 'Production_br'
labsuser@Ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
 Gitt/text.txt | 0
 Gitt/text2.txt | 0
 2 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitt/text.txt
 create mode 100644 Gitt/text2.txt
labsuser@Ubuntu1804:~/Gitt$
```

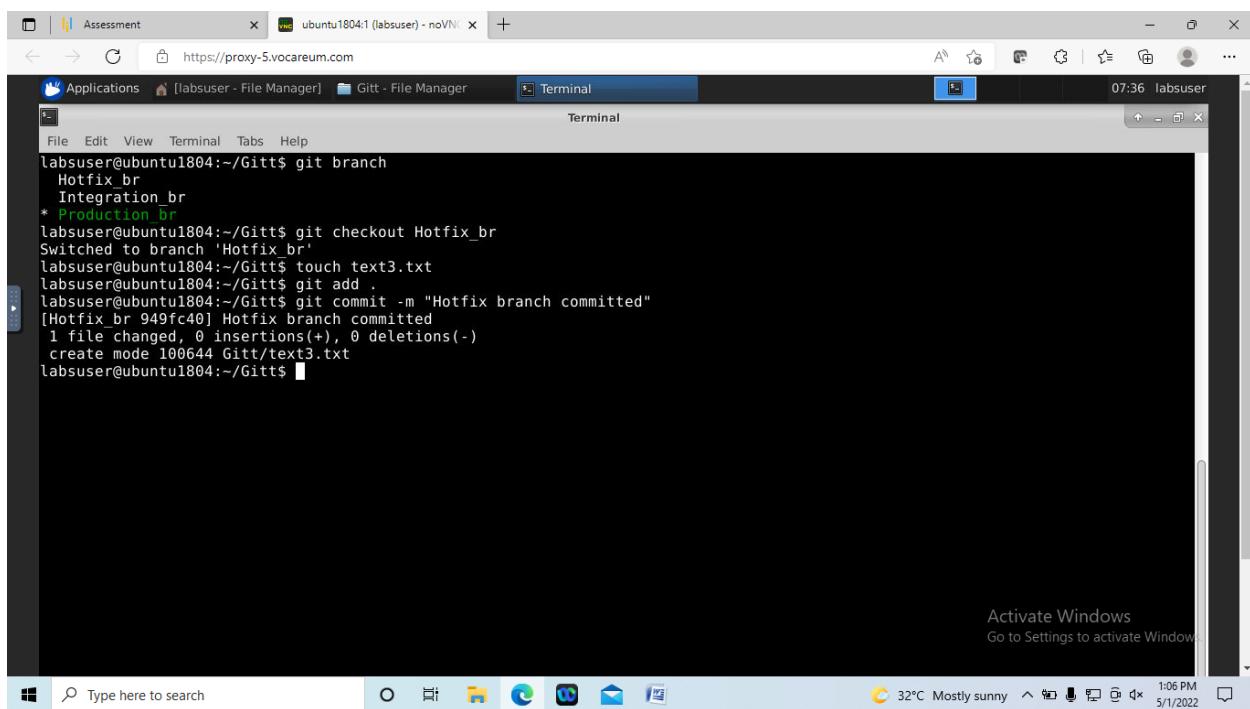
A screenshot of a Windows desktop environment, similar to the one above. The taskbar, system tray, and browser window are identical. The terminal output in the browser window is as follows:

```
Merge branch 'Feature1 br' into Production br
# Please enter a commit message to explain why this merge is necessary,
# especially if it merges an updated upstream into a topic branch.
#
# Lines starting with '#' will be ignored, and an empty message aborts
# the commit.
~
```



```
* Integration_br
  Production_br
labsuser@ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
 Gitt/text.txt | 0
 Gitt/text2.txt | 0
 2 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitt/text.txt
 create mode 100644 Gitt/text2.txt
labsuser@ubuntu1804:~/Gitt$ git checkout Hotfix_br
Switched to branch 'Hotfix_br'
labsuser@ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
 Gitt/text.txt | 0
 Gitt/text2.txt | 0
 2 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitt/text.txt
 create mode 100644 Gitt/text2.txt
labsuser@ubuntu1804:~/Gitt$ git checkout Production_br
Switched to branch 'Production_br'
labsuser@ubuntu1804:~/Gitt$ git merge Feature1_br
Merge made by the 'recursive' strategy.
 Gitt/text.txt | 0
 Gitt/text2.txt | 0
 2 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitt/text.txt
 create mode 100644 Gitt/text2.txt
labsuser@ubuntu1804:~/Gitt$ git branch -d Feature1_br
Deleted branch Feature1_br (was a03a822).
labsuser@ubuntu1804:~/Gitt$
```

7. Commit some changes in the Hotfix branch and merge it into the Production as well as the Integration branch



```
File Edit View Terminal Tabs Help
labsuser@ubuntu1804:~/Gitt$ git branch
  Hotfix_br
  Integration_br
* Production_br
labsuser@ubuntu1804:~/Gitt$ git checkout Hotfix_br
Switched to branch 'Hotfix_br'
labsuser@ubuntu1804:~/Gitt$ touch text3.txt
labsuser@ubuntu1804:~/Gitt$ git add .
labsuser@ubuntu1804:~/Gitt$ git commit -m "Hotfix branch committed"
[Hotfix_br 949fc40] Hotfix branch committed
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Gitt/text3.txt
labsuser@ubuntu1804:~/Gitt$
```

Merge branch 'Hotfix br' into Production br
Please enter a commit message to explain why this merge is necessary,
especially if it merges an updated upstream into a topic branch.

Lines starting with '#' will be ignored, and an empty message aborts
the commit.

Activate Windows
Go to Settings to activate Windows

The screenshot shows a Windows desktop environment with a VNC connection to a Linux system. The terminal window displays a series of git commands being run:

```
git checkout Production_br
Switched to branch 'Production br'
labsuser@ubuntu1804:/Gitt$ git merge Hotfix_br
Merge made by the 'recursive' strategy.
Gitt/text3.txt | 0
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 Gitt/text3.txt
labsuser@ubuntu1804:/Gitt$ git checkout Integration_br
Switched to branch 'Integration br'
labsuser@ubuntu1804:/Gitt$ git merge Hotfix_br
Merge made by the 'recursive' strategy.
Gitt/text3.txt | 0
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 Gitt/text3.txt
labsuser@ubuntu1804:/Gitt$
```

The desktop interface includes a taskbar at the bottom with icons for File Explorer, Task View, Start, Taskbar settings, and File History. A system tray icon for 'Windows Update' is visible. The system clock shows it's 1:09 PM on 5/1/2022, and the weather is 32°C with mostly sunny conditions.

Merge branch 'Hotfix br' into Integration br
Please enter a commit message to explain why this merge is necessary,
especially if it merges an updated upstream into a topic branch.

Lines starting with '#' will be ignored, and an empty message aborts
the commit.

Activate Windows
Go to Settings to activate Windows

A screenshot of a Windows desktop environment. At the top, there is a taskbar with several open windows: 'Assessment' (closed), 'ubuntu1804:1 (labsuser) - noVNC' (closed), 'New tab' (closed), 'Git github project - nandinisath...' (closed), and a browser tab for 'https://proxy-5.vocareum.com'. Below the taskbar is a window titled 'Terminal' which contains a command-line interface. The command 'git log --oneline' is run, displaying a list of commits:

```
labsuser@ubuntu1804:~/Gitt$ git log --oneline
b883296 (HEAD -> Integration_br) Merge branch 'Hotfix_br' into Integration_br
949fc40 (Hotfix_br) Hotfix branch committed
6245f21 Merge branch 'Feature1_br' into Hotfix_br
bb76fb9 Merge branch 'Feature1_br' into Integration_br
a03a822 Feature1 again committed
f4c8feb Feature1 committed
3ce13d8 Merge branch 'Feature2_br' into Integration_br
ea26844 committed
f84b574 Feature 2 committed
6f07e4d committed1
adbbd50 m1 committed
4d07c3c madhu committed
5c8fb09 committed m1
c52c0c7 first commit m1
c7120e9 ne wfirl
labsuser@ubuntu1804:~/Gitt$
```

The terminal window has a dark theme. In the bottom right corner of the desktop, there is a watermark that says 'Activate Windows Go to Settings to activate Windows'. The taskbar also shows the date and time as '1:46 PM 5/1/2022'.