

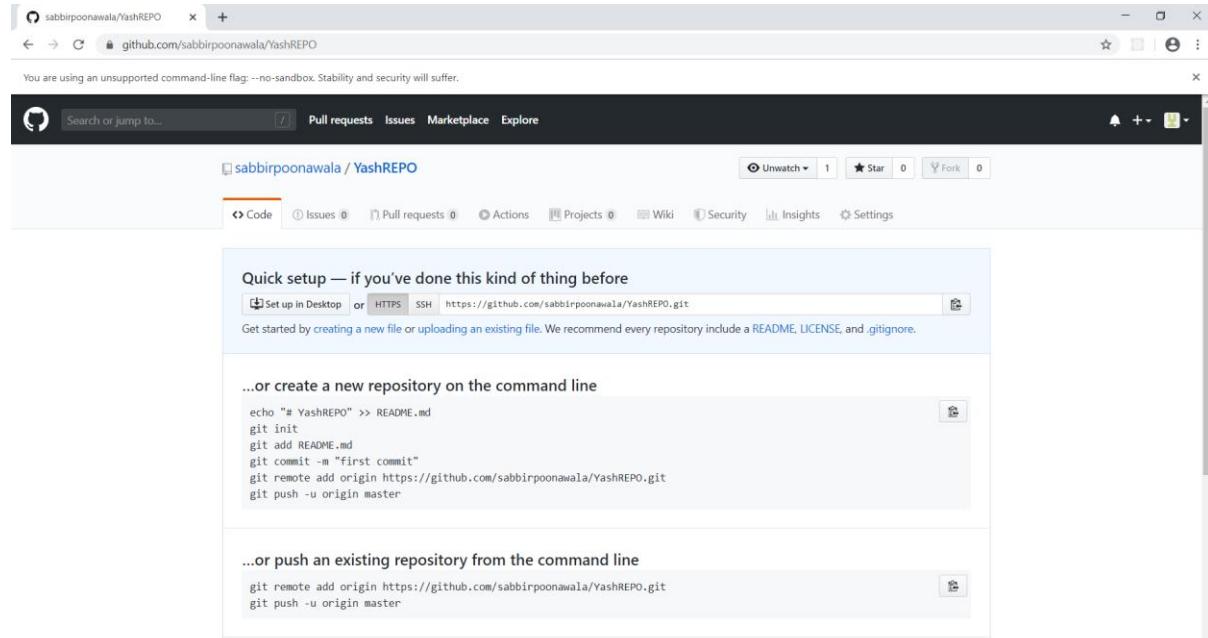
## Resolving conflict in GIT using Eclipse

**This lab provides step-by-step guide for resolving conflict in git using EGit plugin in eclipse.**

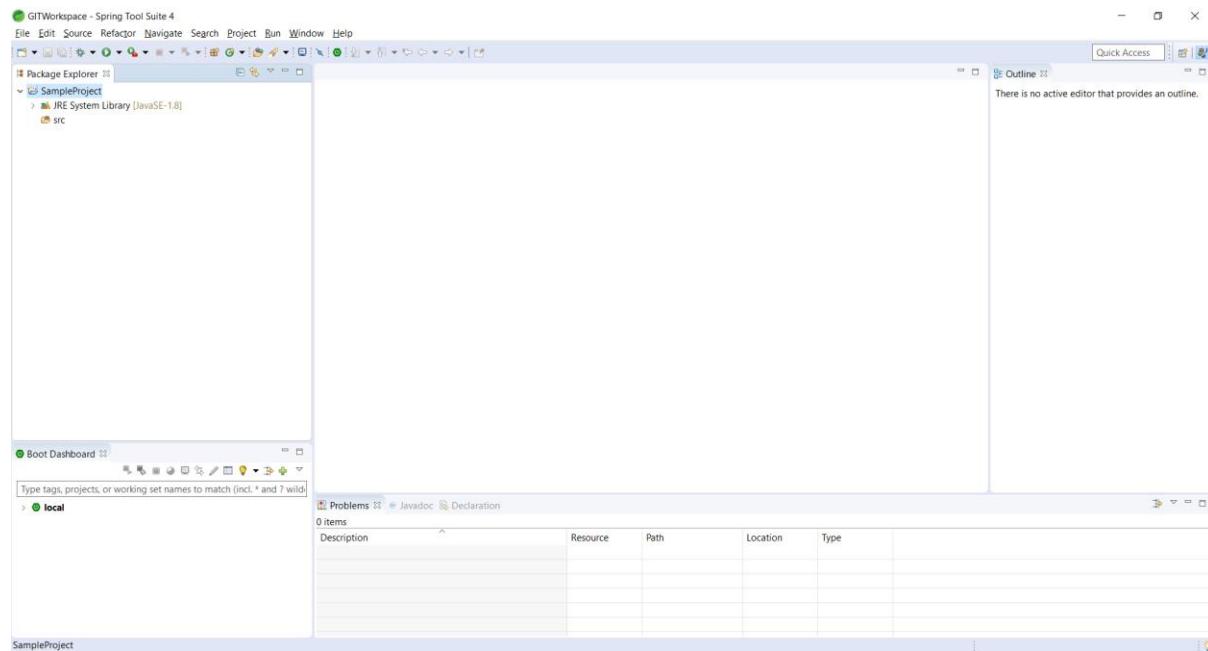
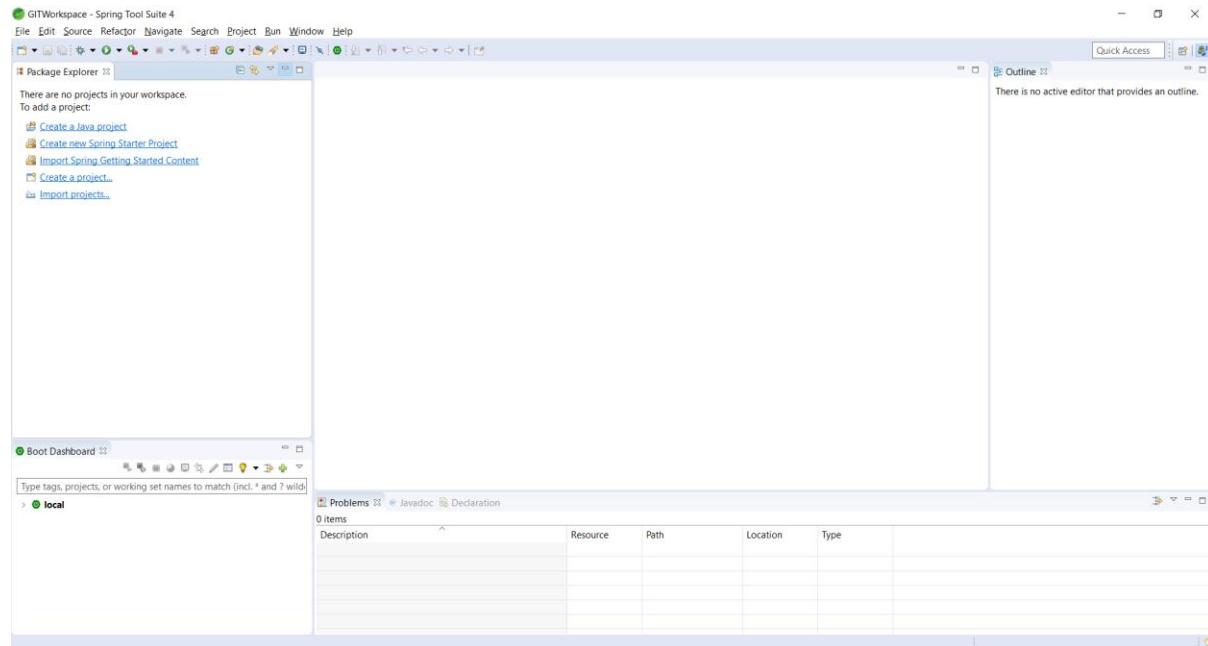
### Prerequisites:

- Spring Tool Suite 3/4
- Java 1.8
- GIT HUB Account

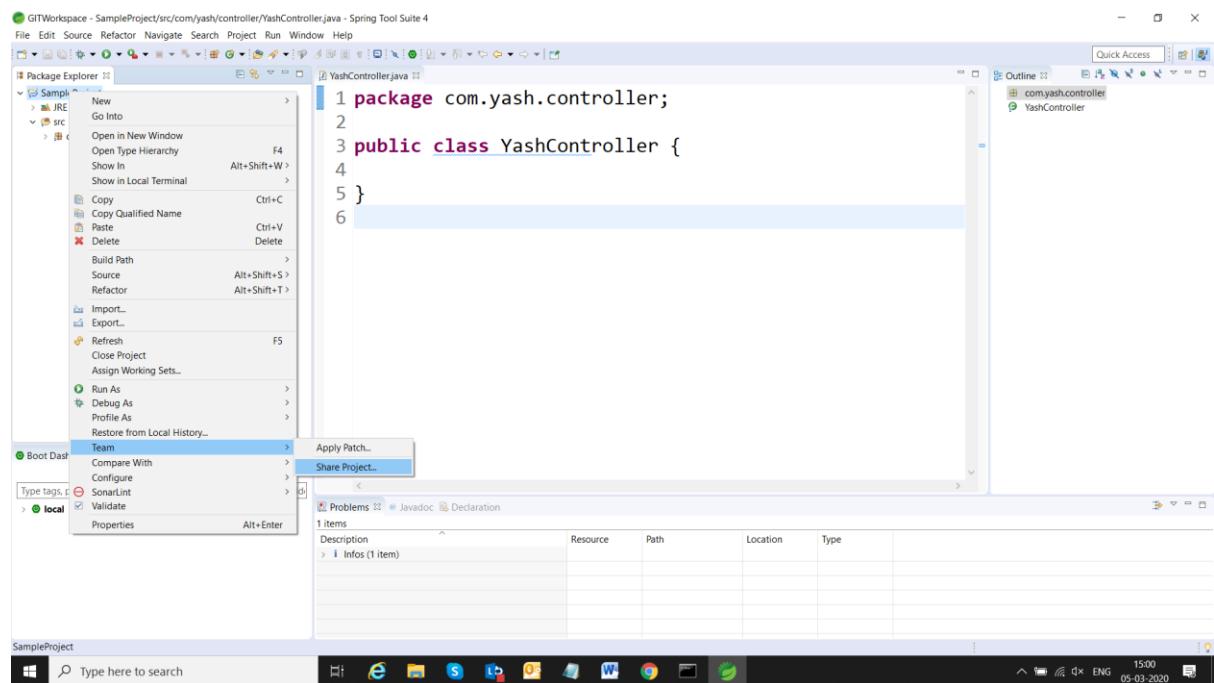
We will create a demo repository on github.com to do this lab.



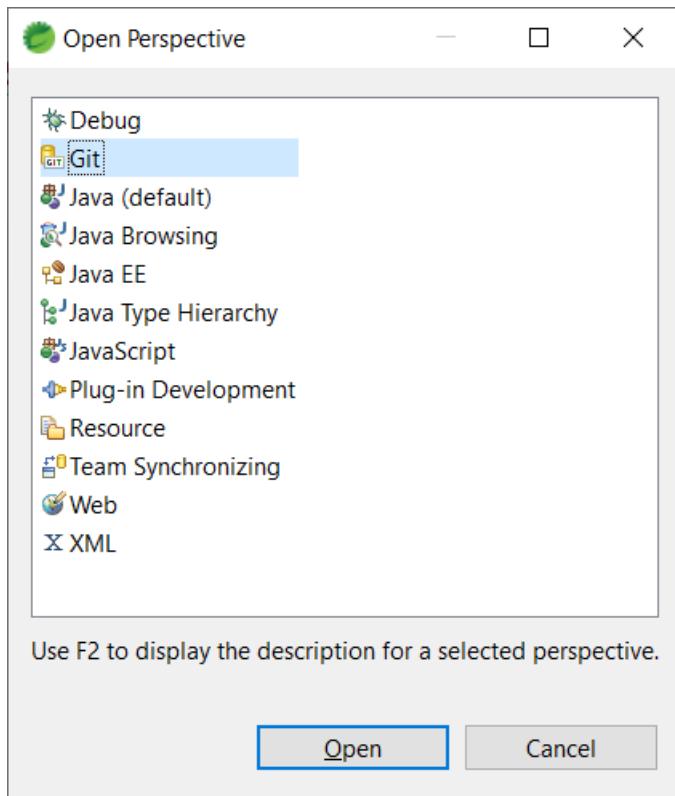
## Create new java project “SampleProject” in Eclipse STS 4.x,



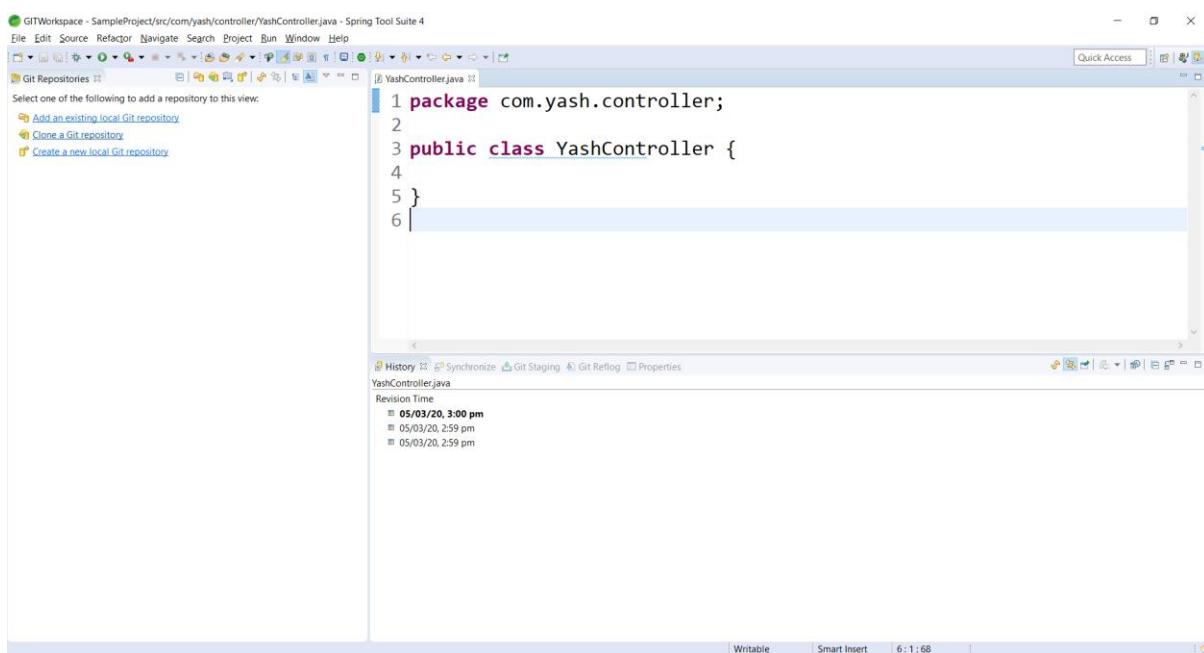
Create a package com.yash.controller,



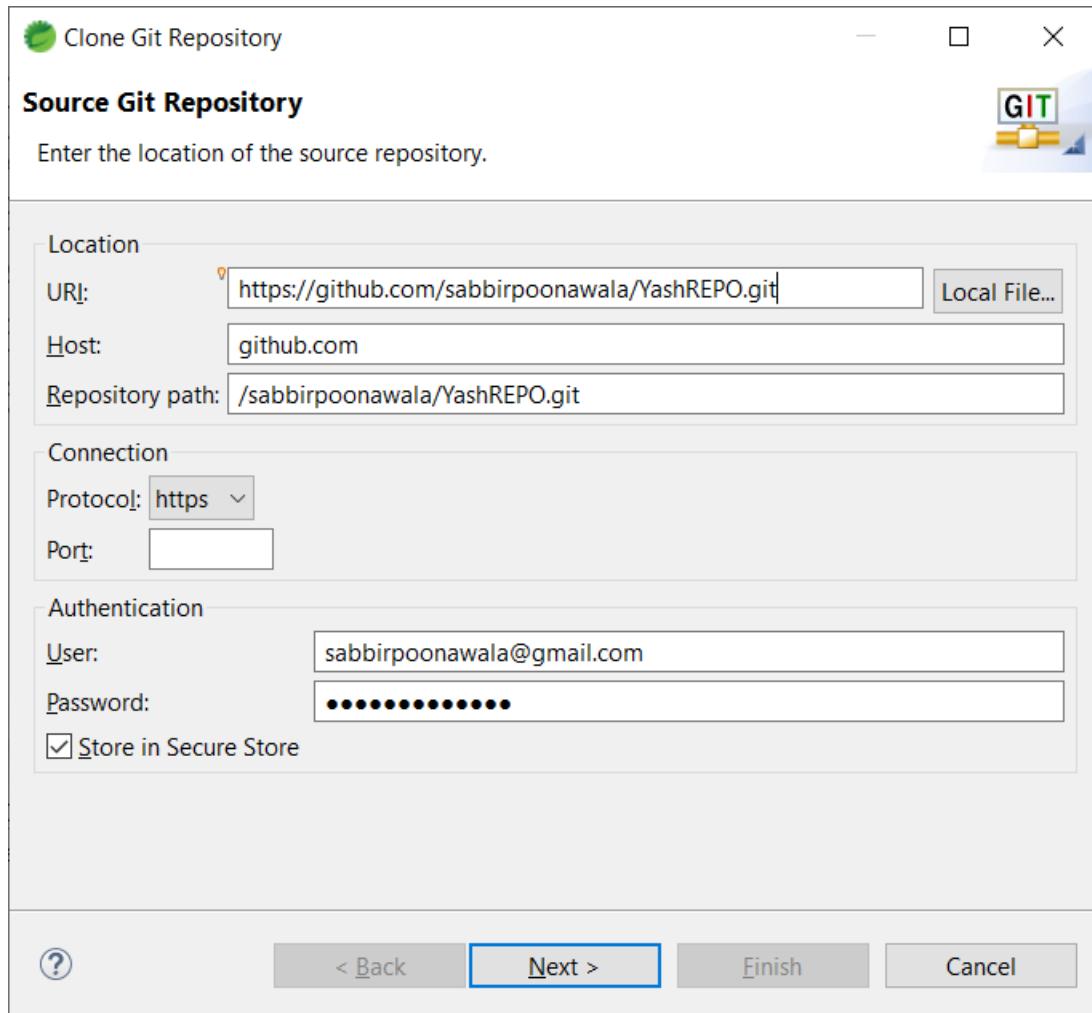
Open a GIT perspective,



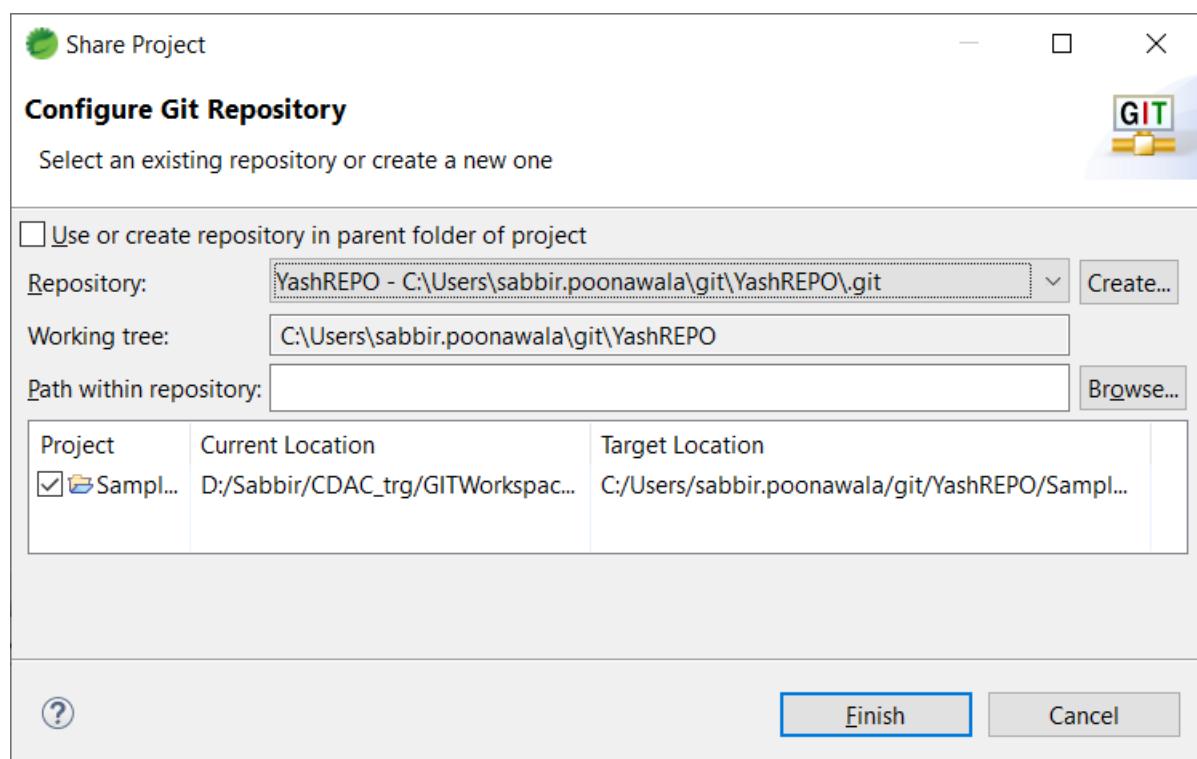
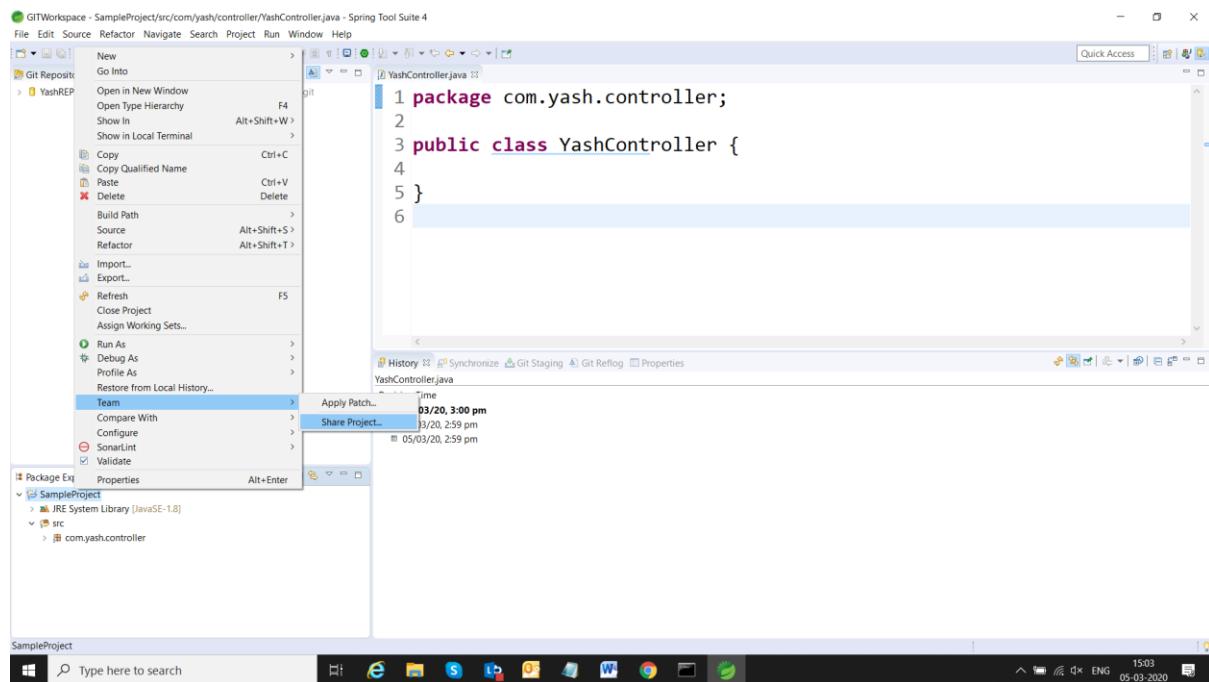
Use F2 to display the description for a selected perspective.



In repositories GIT repositories tab, click on clone repository, Provide git repository url and credentials,

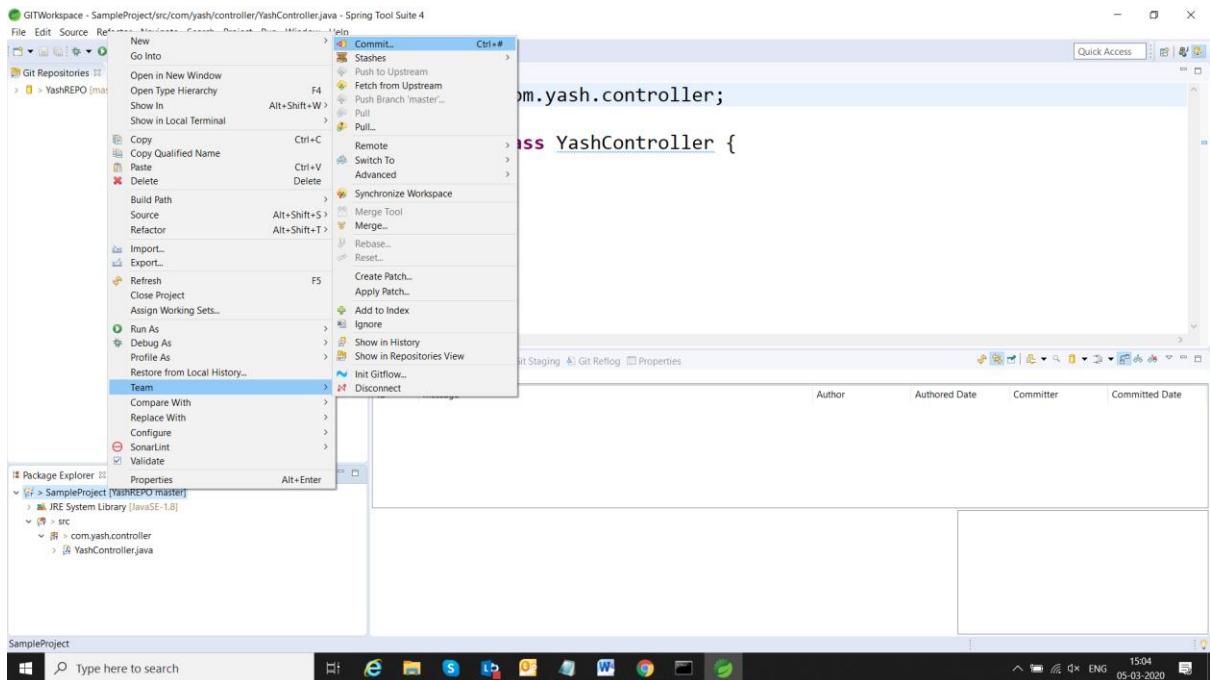


Share the project to GIT repository. Team members will have to clone repository following above steps and while cloning select option all projects and modules while cloning.

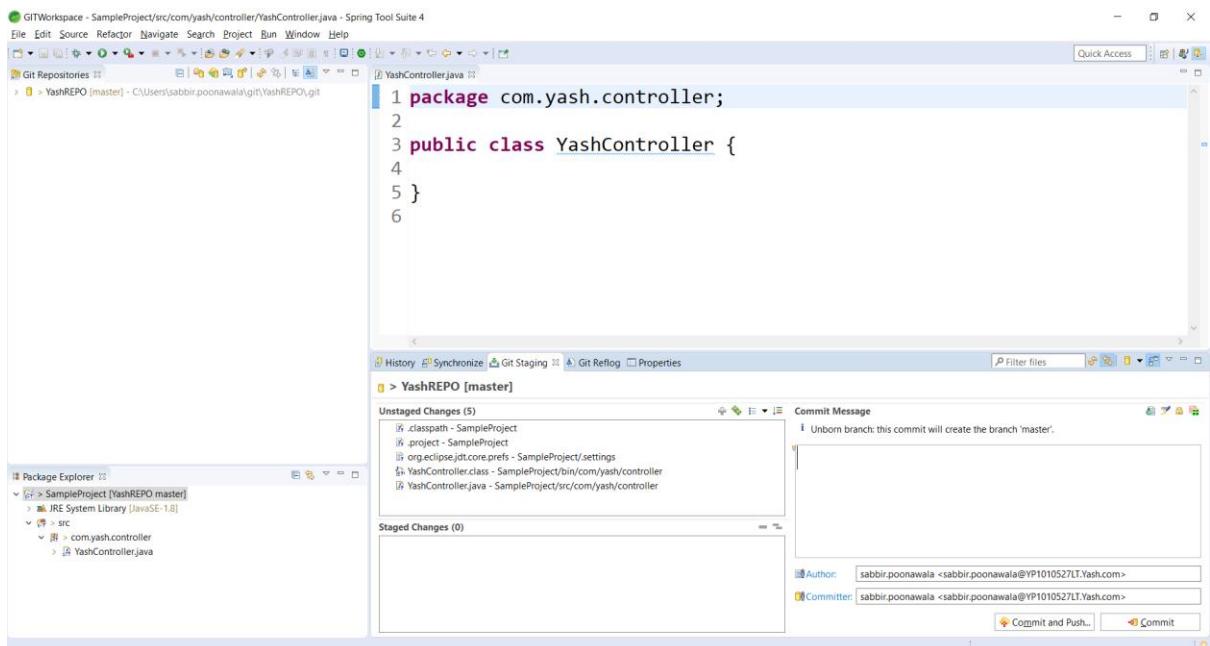


To commit the project to cloned repository, Right click on project and select team and commit.

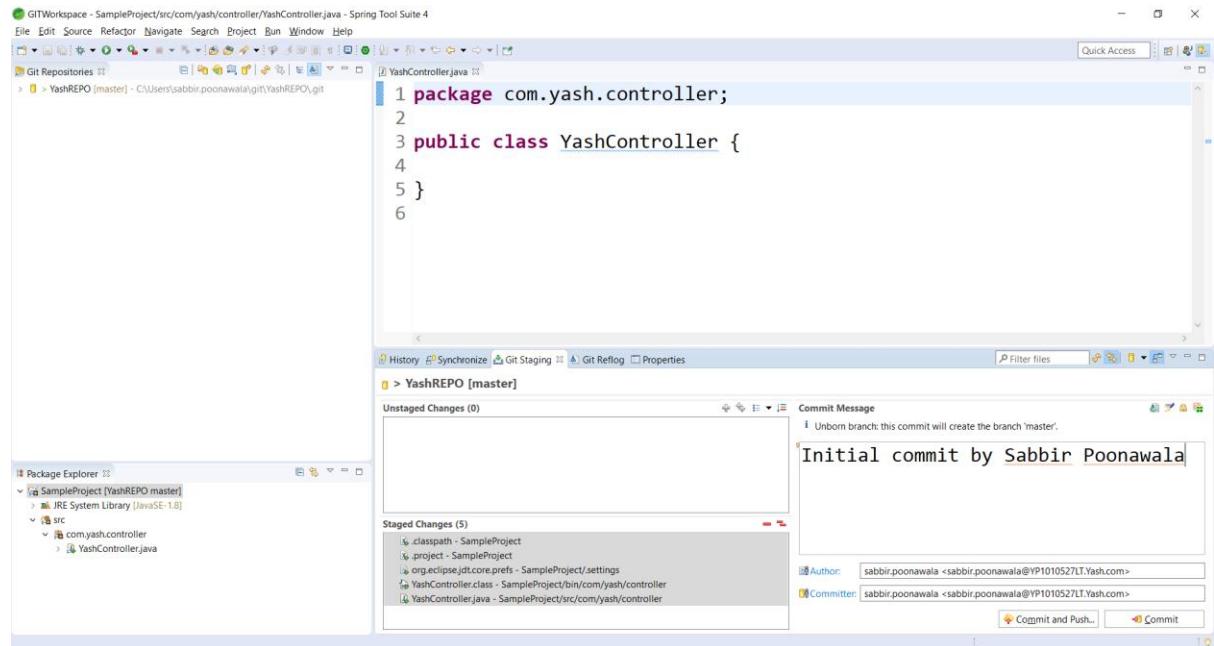
Team->Commit

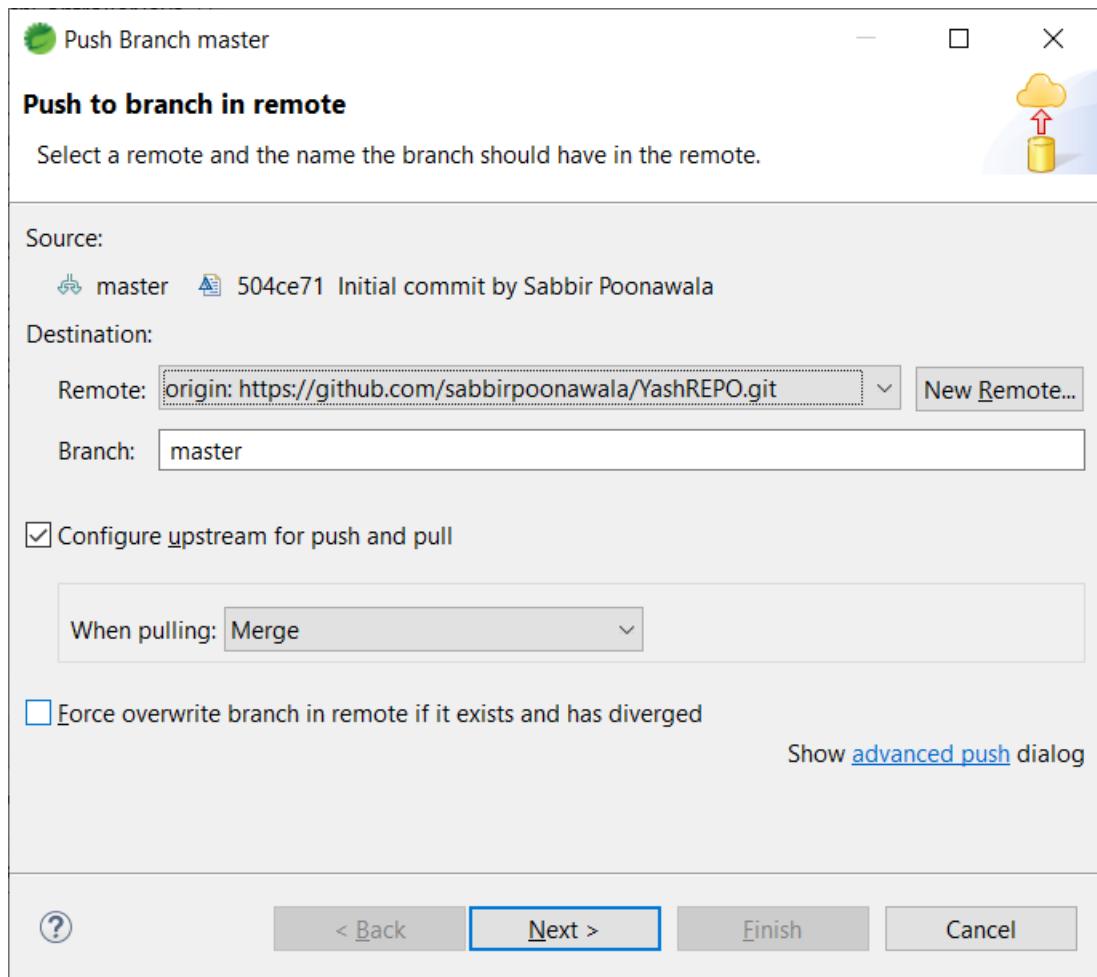


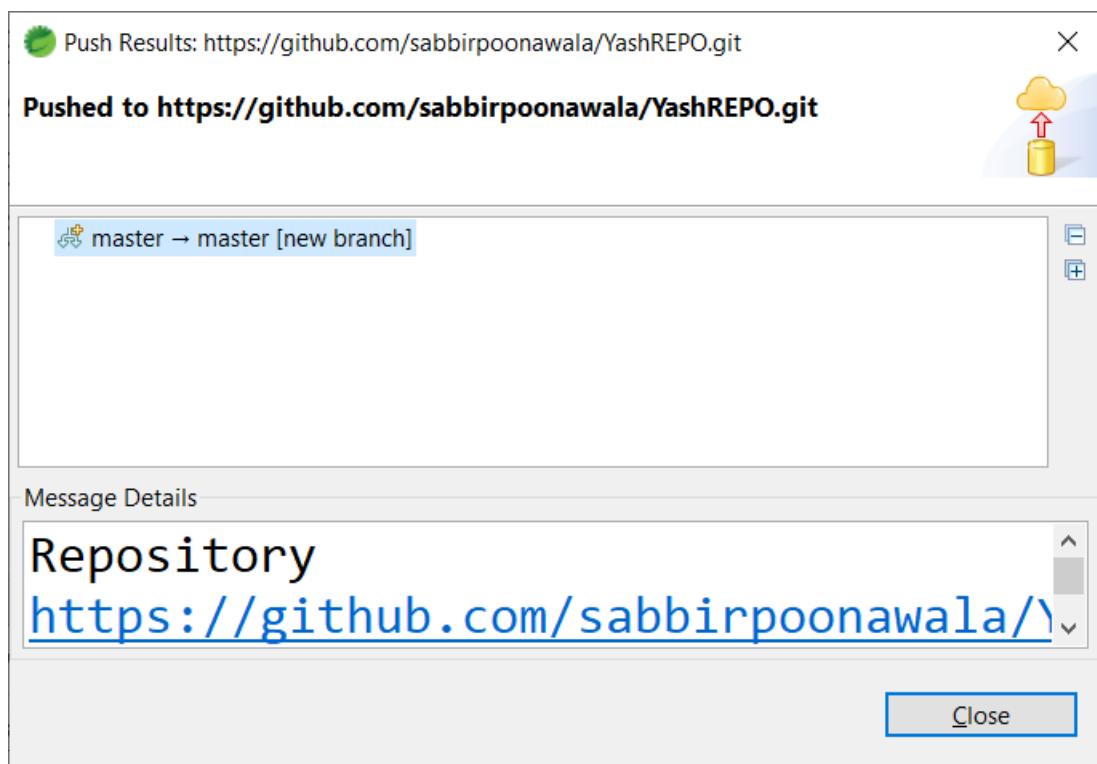
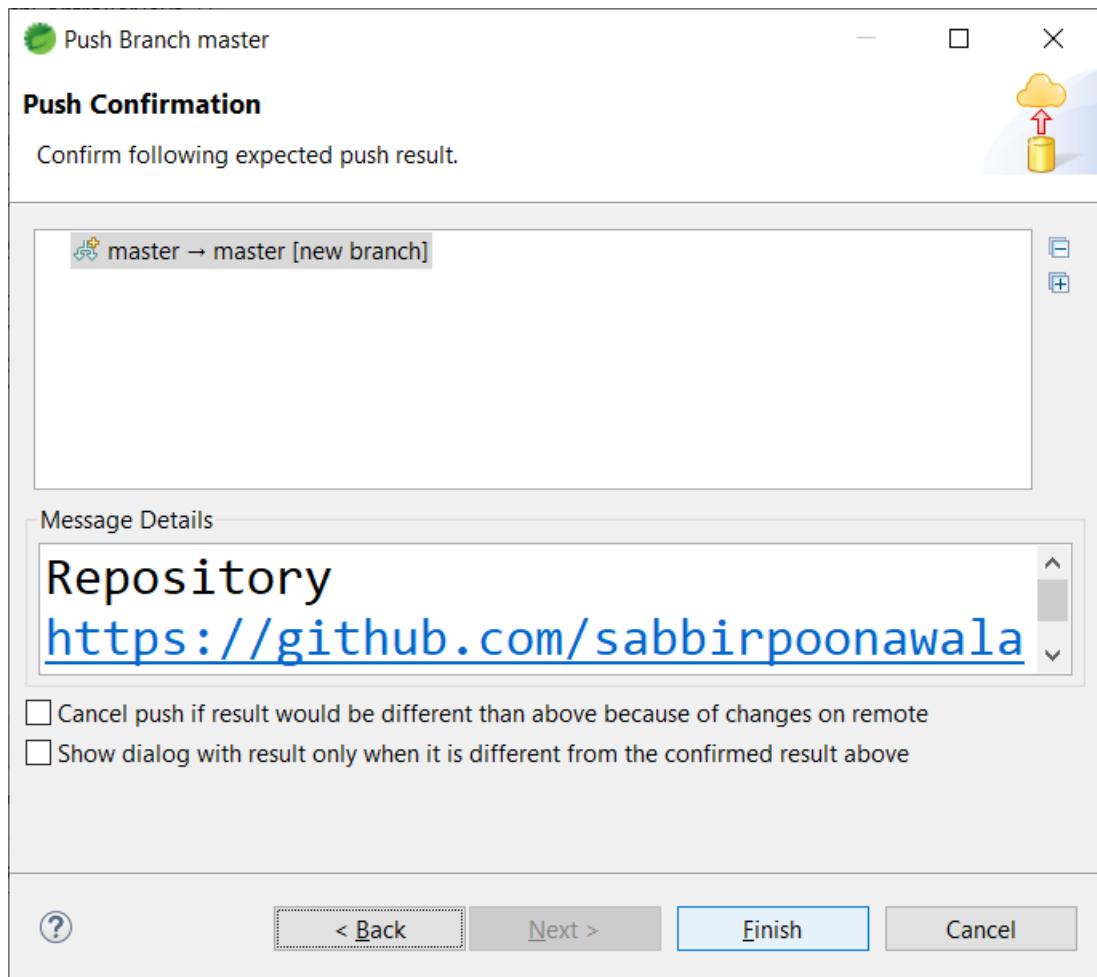
Select all files in unstaged changes and add them as staged,



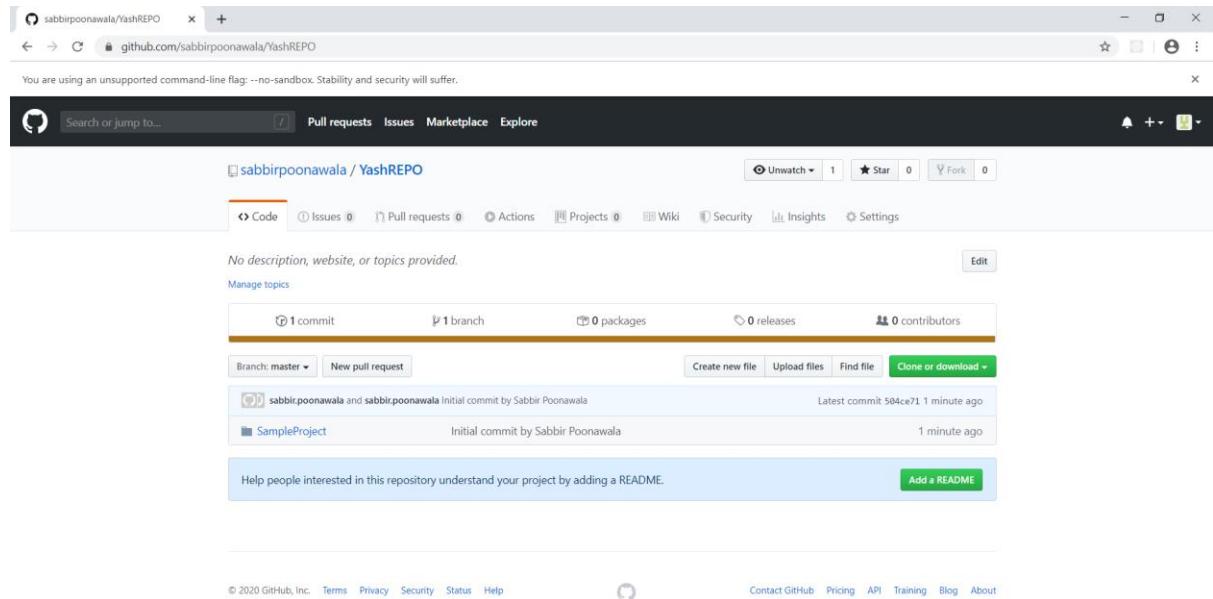
Put Commit message and click on commit and push



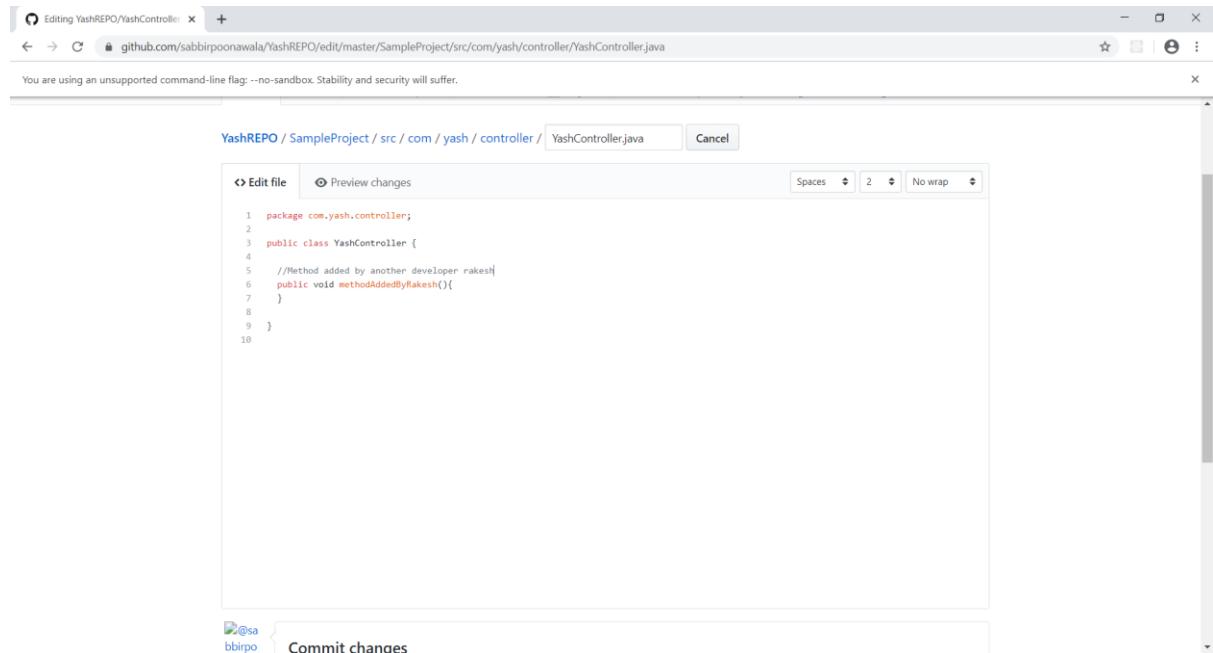


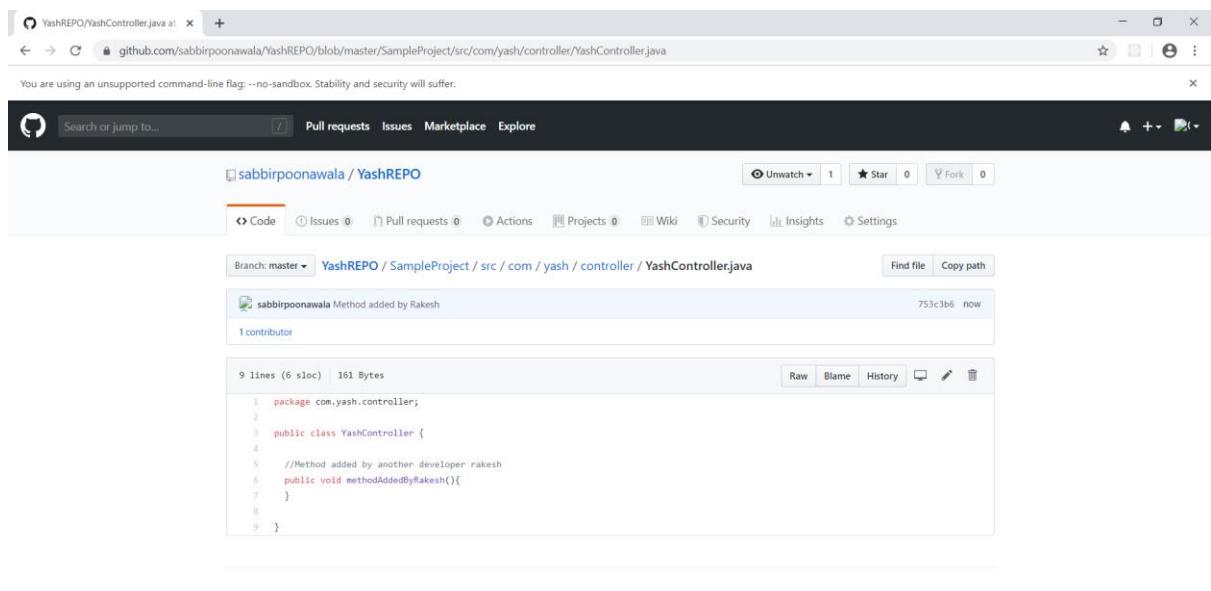
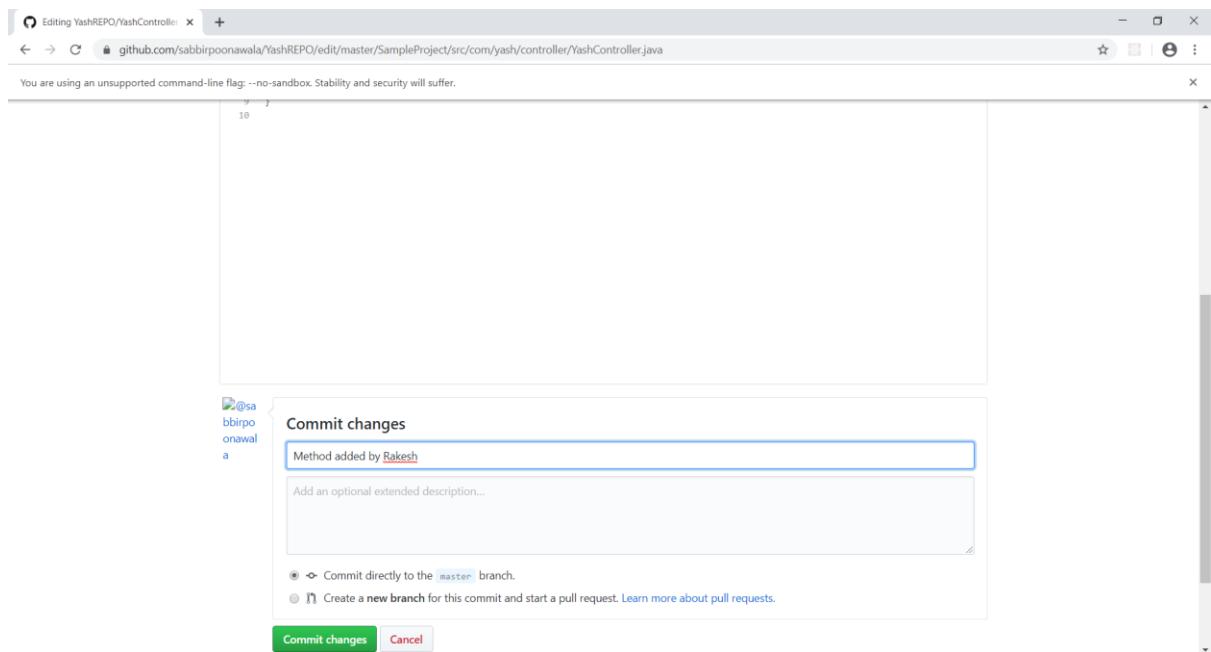


Confirm if project is committed on repository,

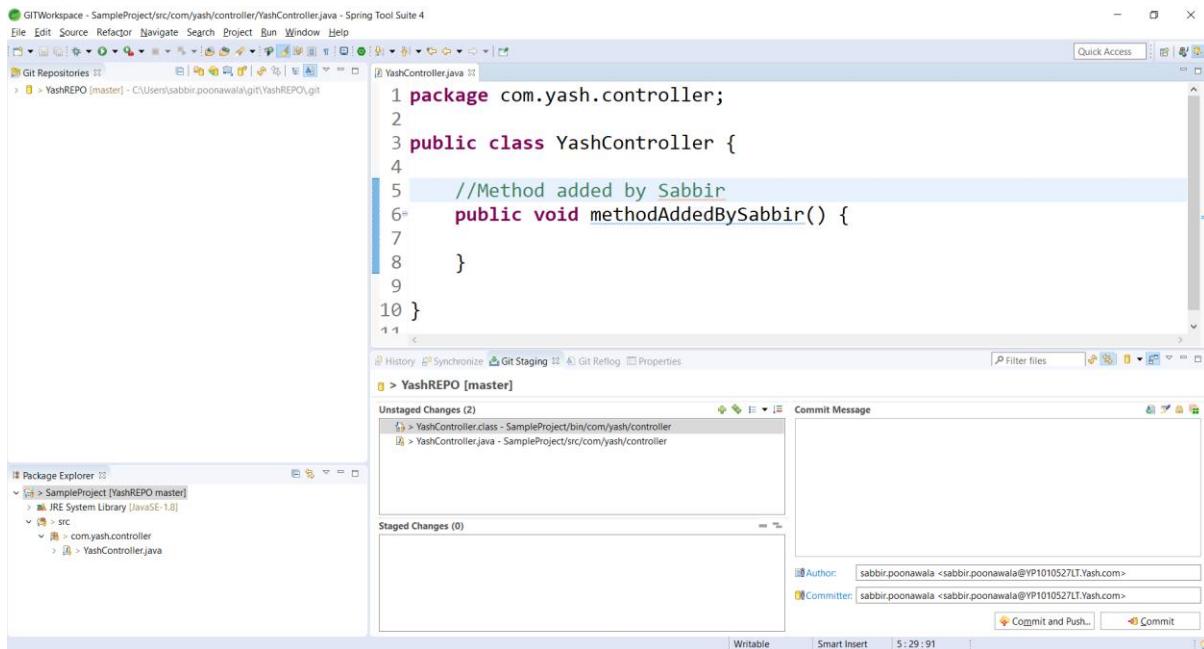


Suppose another developer “Rakesh” adds a method in controller and commits changes to repository,





Another developer “Sabbir” who had pull application from repository adds his own method in same controller,

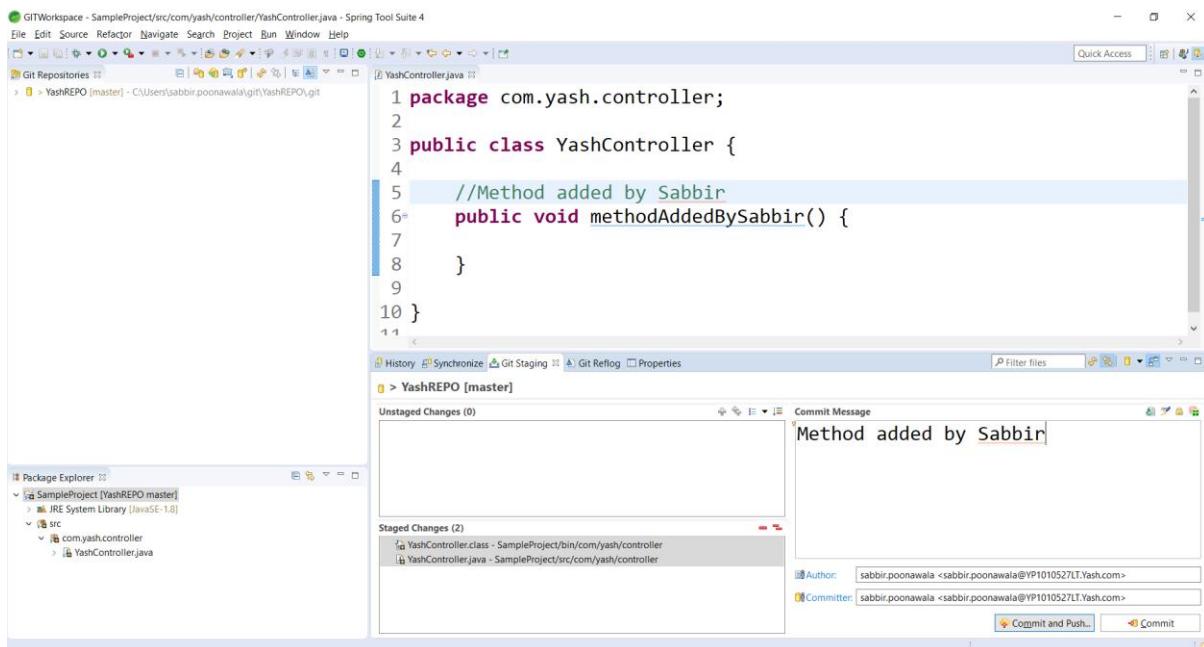


The screenshot shows the Eclipse IDE interface with the following details:

- File Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help.
- Toolbar:** Standard Eclipse toolbar icons.
- Git Repositories View:** Shows a repository named "YashREPO [master] - C:\Users\sabbir.poonawala\git\YashREPO.git".
- Editor:** The code editor displays the file `YashController.java` with the following content:

```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8     }
9
10 }
```
- Git Staging View:** Shows "Unstaged Changes (2)" with two files: `YashController.class` and `YashController.java`.
- Commit Message View:** A modal window titled "Commit Message" with the message "Method added by Sabbir". It includes fields for Author and Committer, both set to "sabbir.poonawala <sabbir.poonawala@YP1010527LT.Yash.com>".
- Package Explorer:** Shows the project structure with a package `com.yash.controller` containing `YashController.java`.

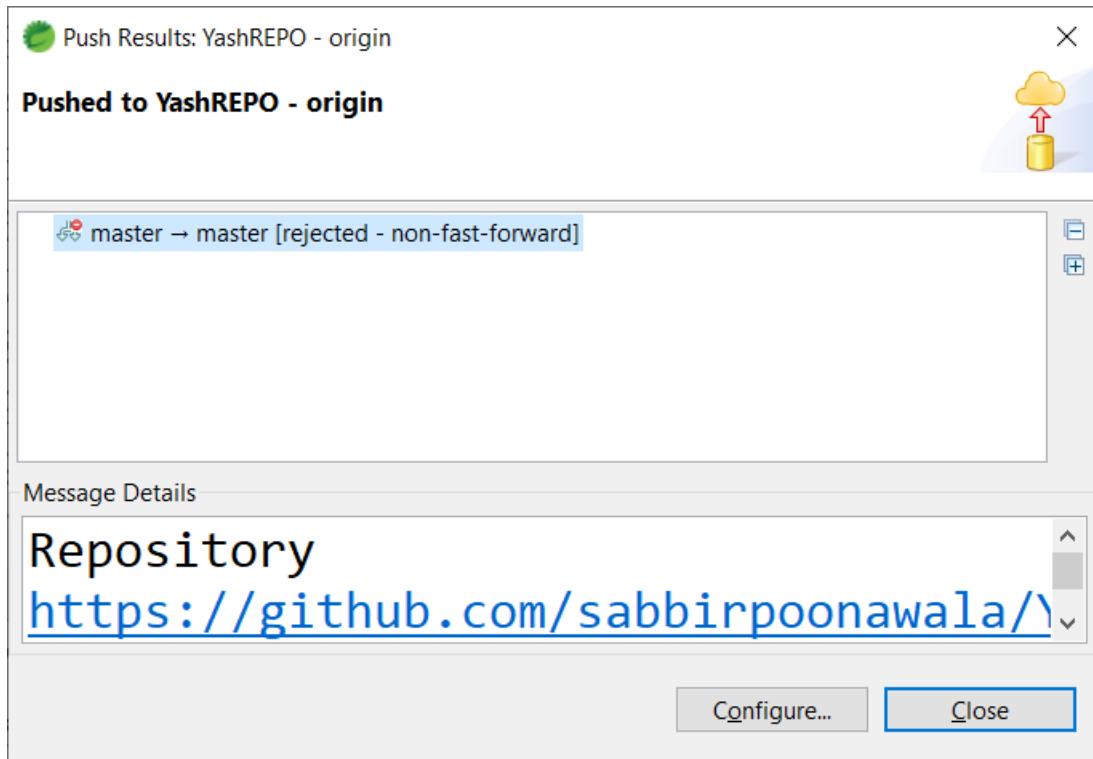
And Sabbir tries to commit to repository,



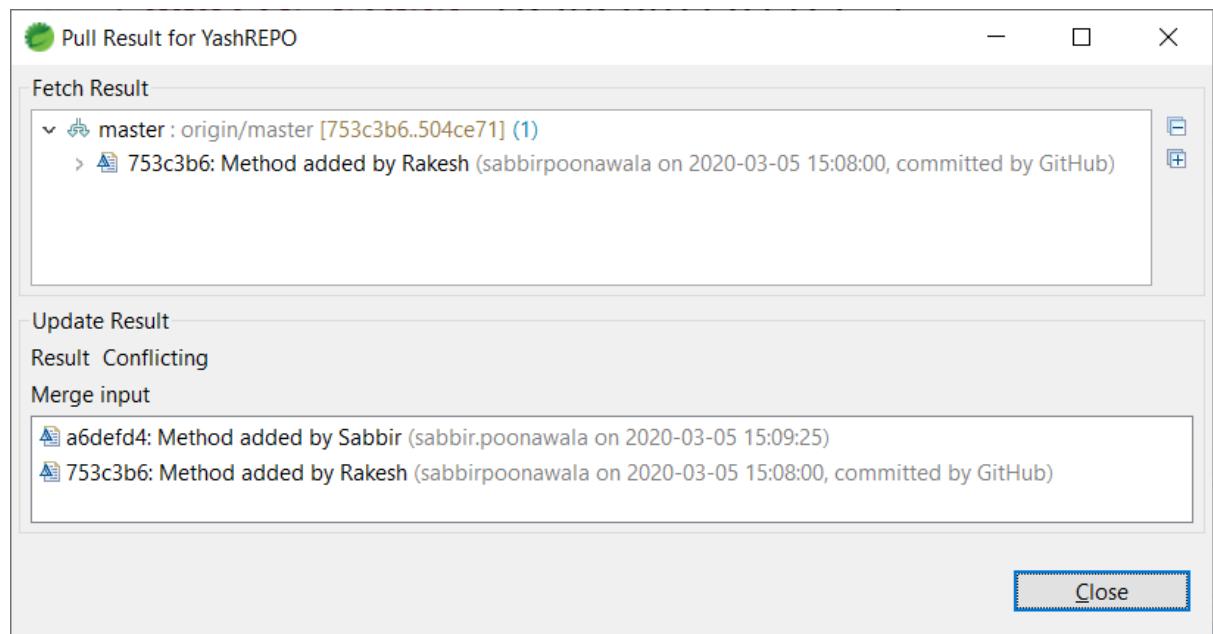
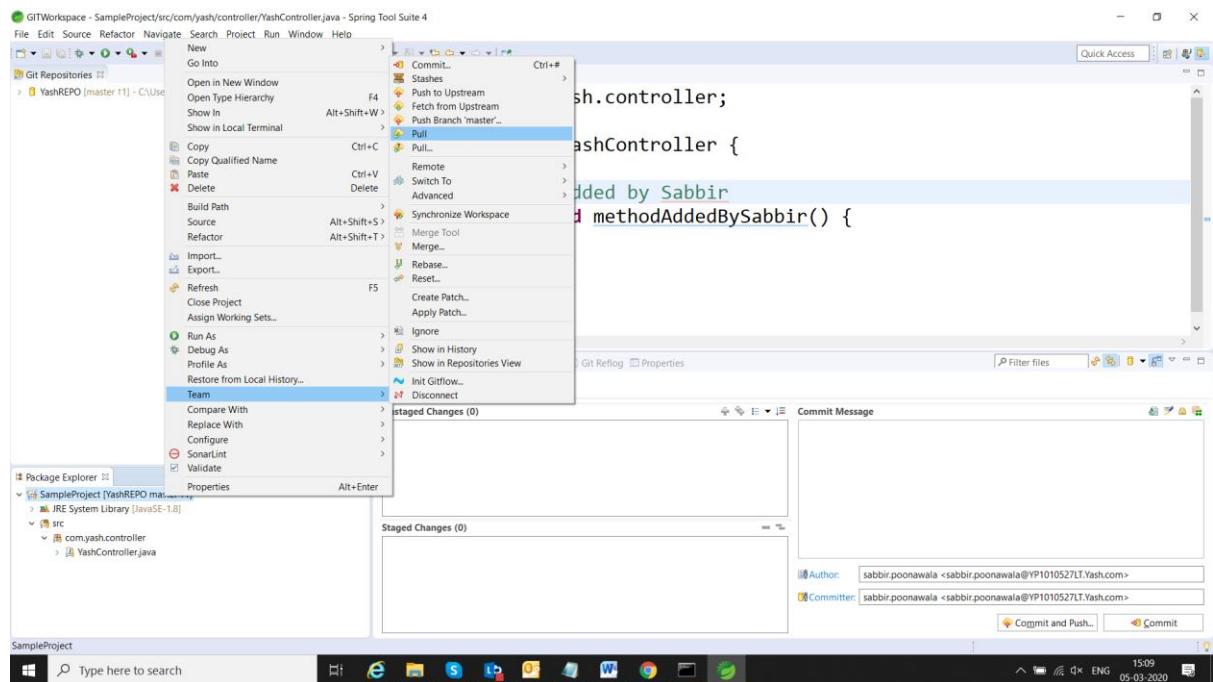
The screenshot shows the Eclipse IDE interface with the following details:

- File Bar:** File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help.
- Toolbar:** Standard Eclipse toolbar icons.
- Git Repositories View:** Shows a repository named "YashREPO [master] - C:\Users\sabbir.poonawala\git\YashREPO.git".
- Editor:** The code editor displays the file `YashController.java` with the same content as the previous screenshot.
- Git Staging View:** Shows "Unstaged Changes (2)" with the same two files: `YashController.class` and `YashController.java`.
- Commit Message View:** A modal window titled "Commit Message" with the message "Method added by Sabbir" entered in the text area. It includes fields for Author and Committer, both set to "sabbir.poonawala <sabbir.poonawala@YP1010527LT.Yash.com>".
- Package Explorer:** Shows the project structure with a package `com.yash.controller` containing `YashController.java`.

But this fails because revision number of YashController in remote repository is different than one in local repository.

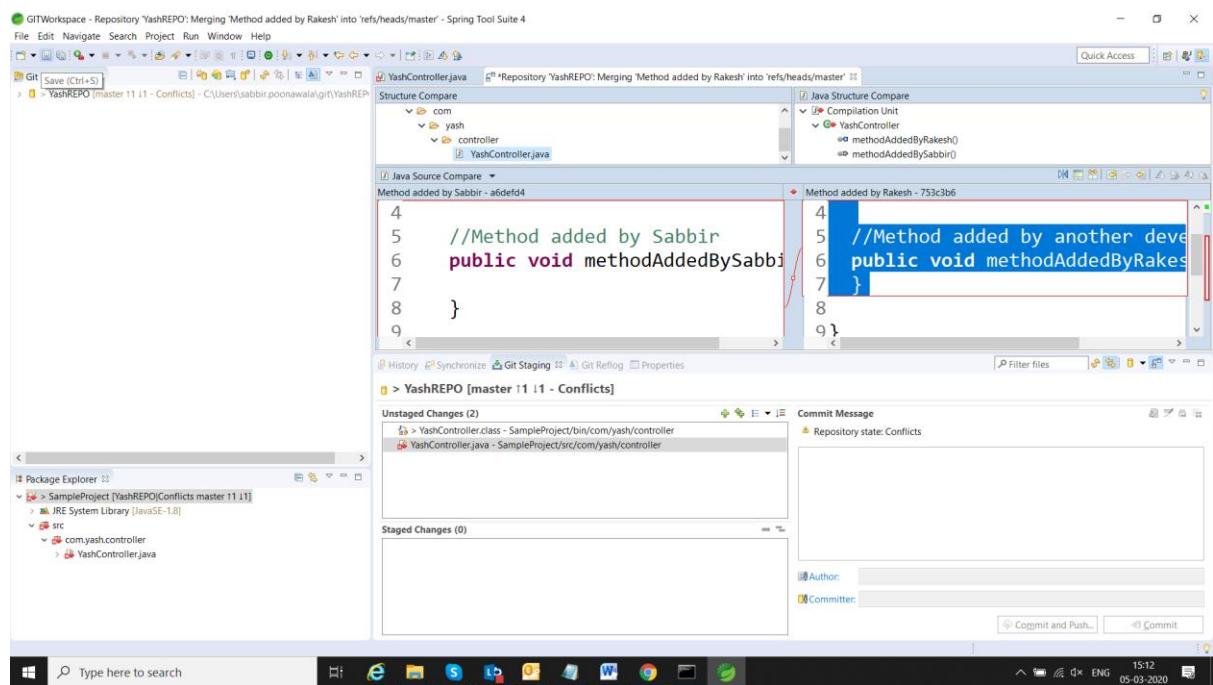
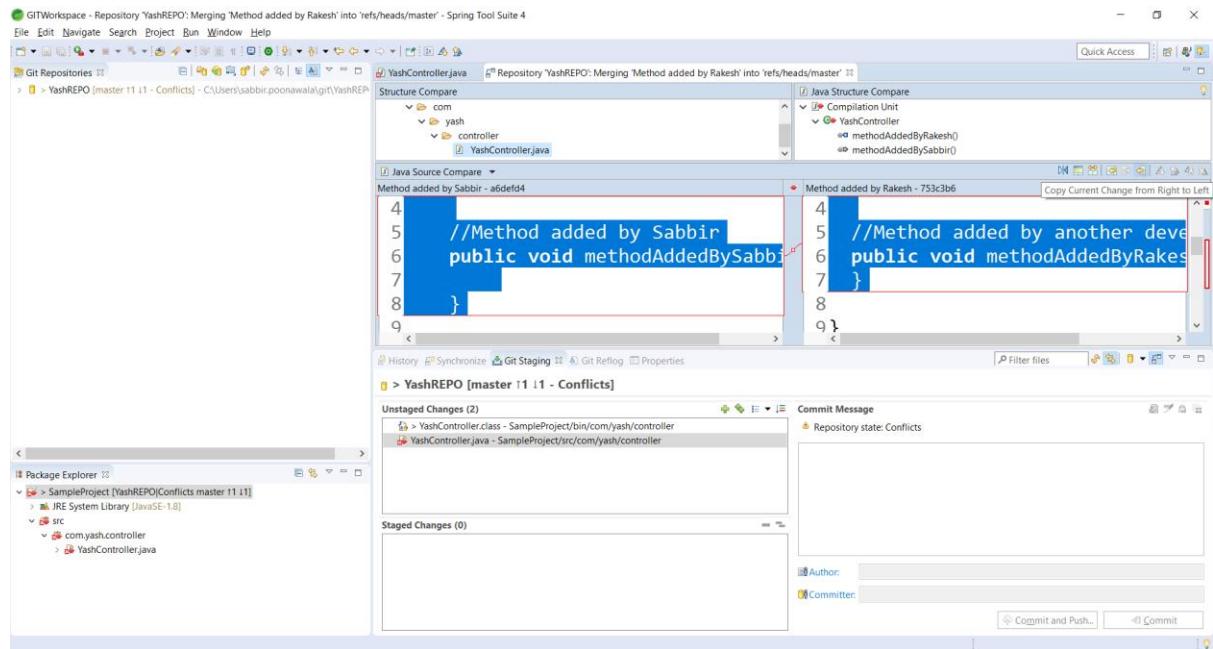


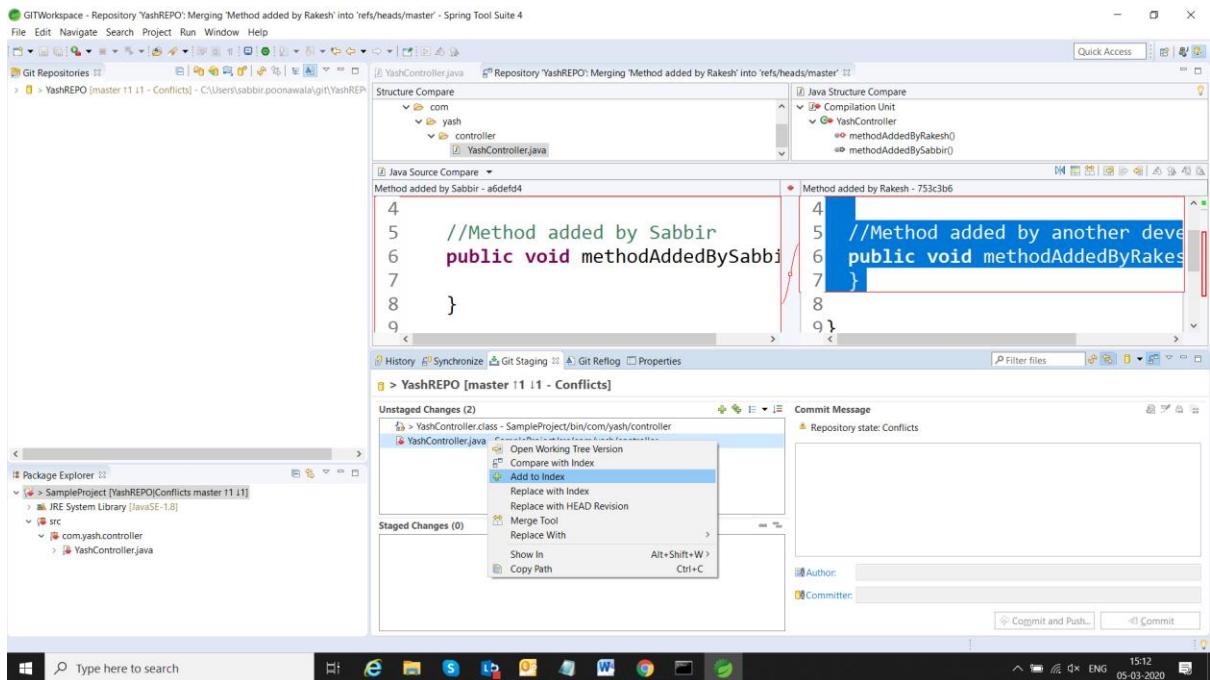
To resolve the conflict and merge , follow below steps,



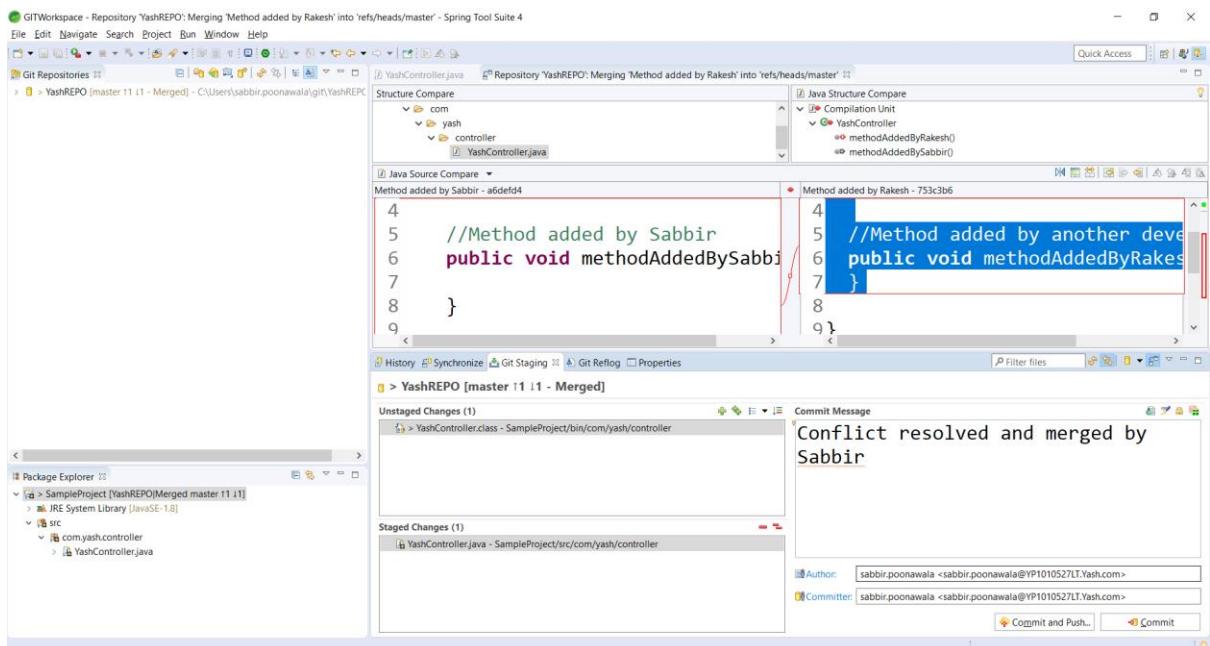
```
1 package com.yash.controller;
2
3 public class YashController {
4 <<<< HEAD
5
6 //Method added by Sabbir
7 public void methodAddedBySabbir() {
8
9 }
10 =====
```

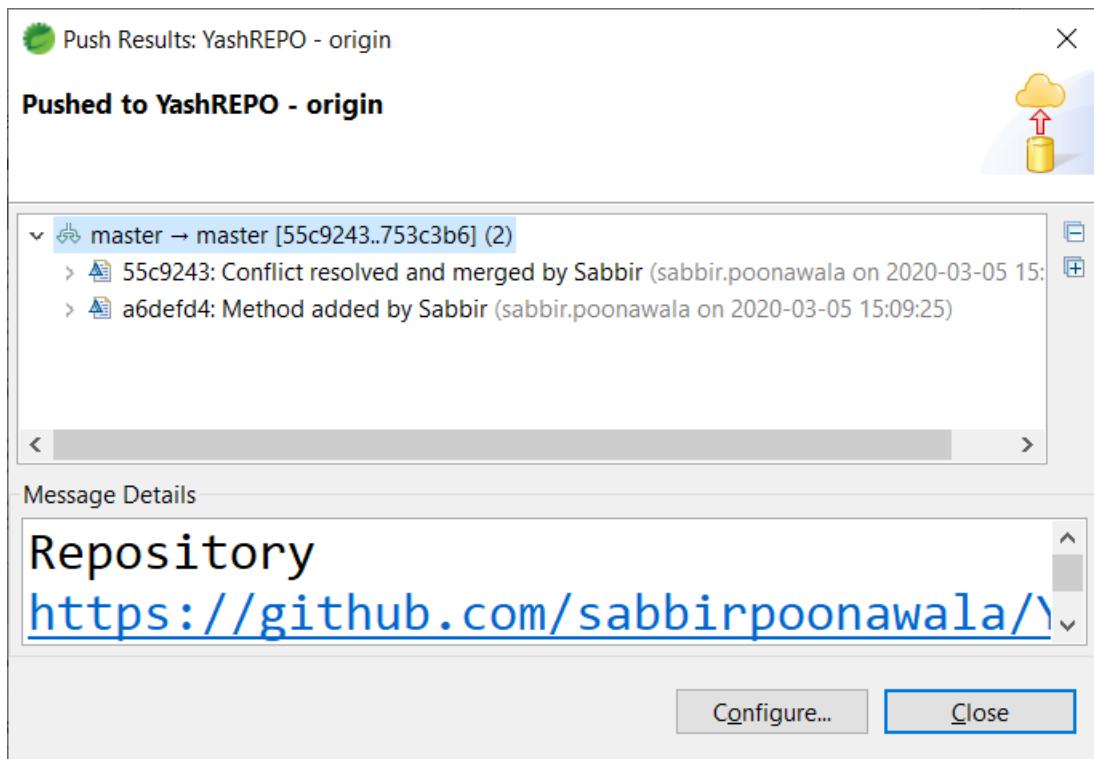
```
1 package com.yash.controller;
2
3 public class YashController {
4 <<<< HEAD
5
6 //Method added by Sabbir
7 public void methodAddedBySabbir() {
8
9 }
10 =====
```



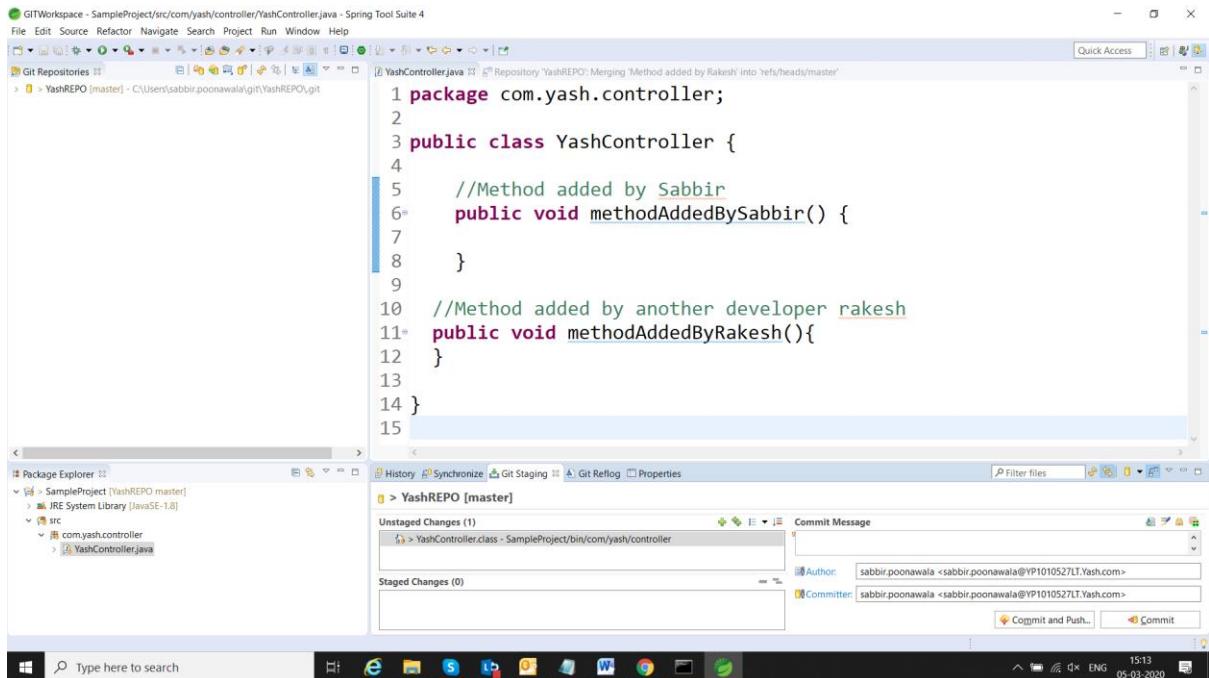


In merge tool click on “select conflict from right to left “ button,

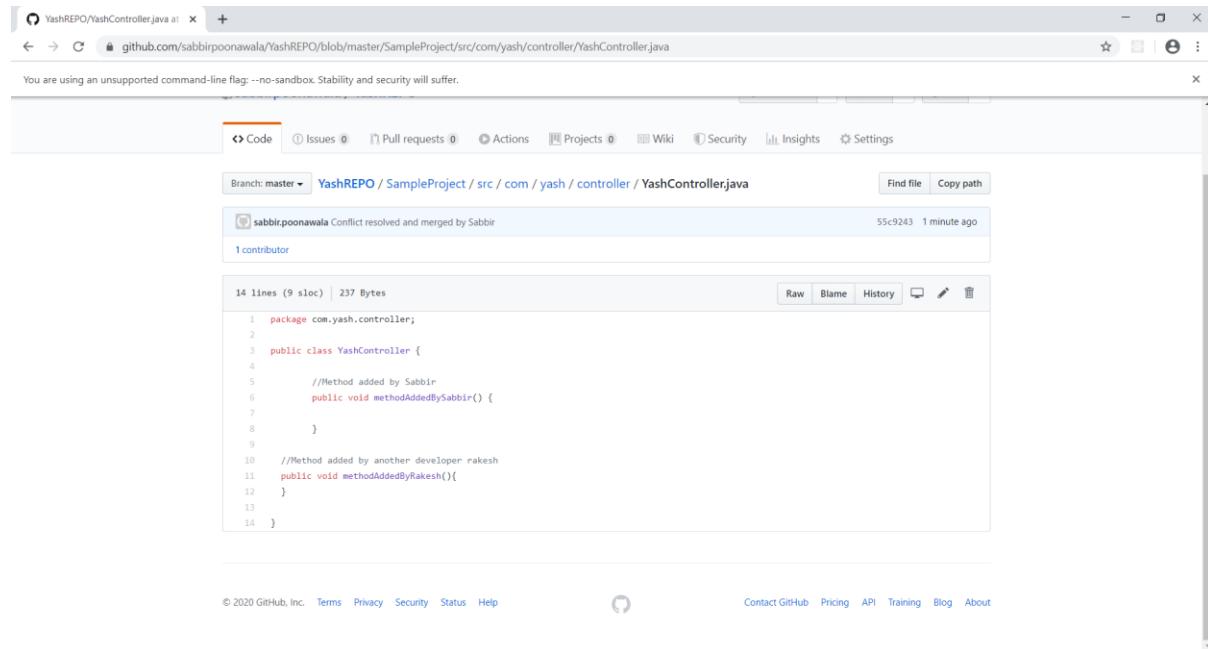




Since conflict was resolved and file was merged, commit will be successful.

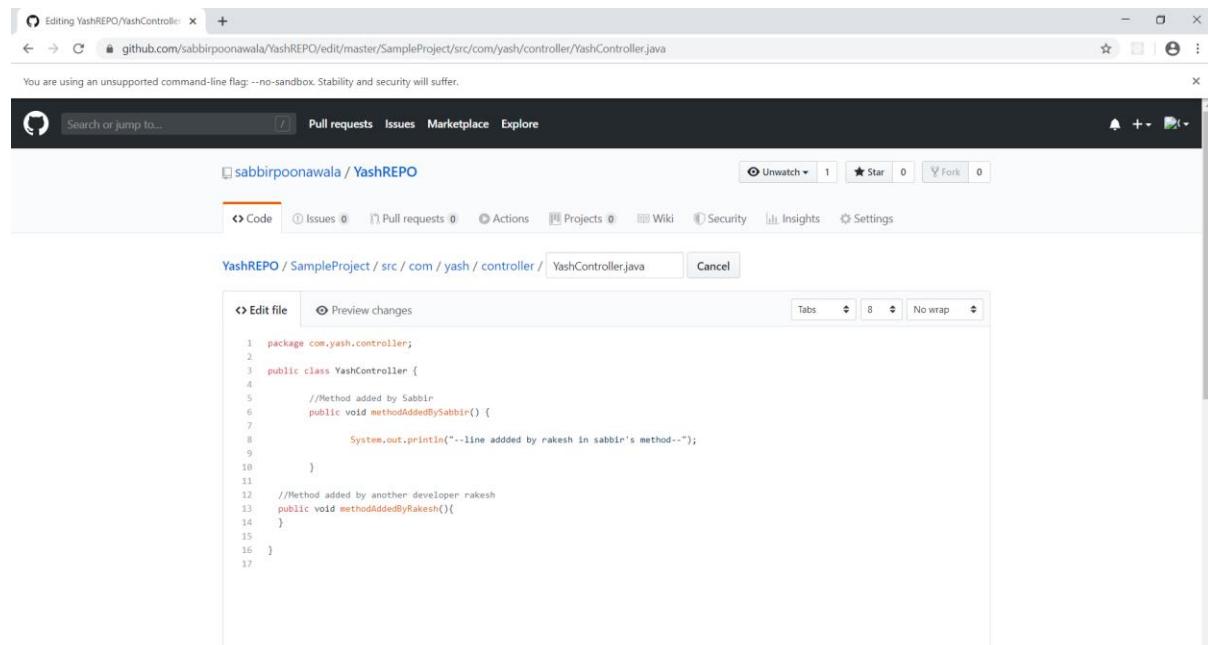


## Verify if repository has updated YashController,



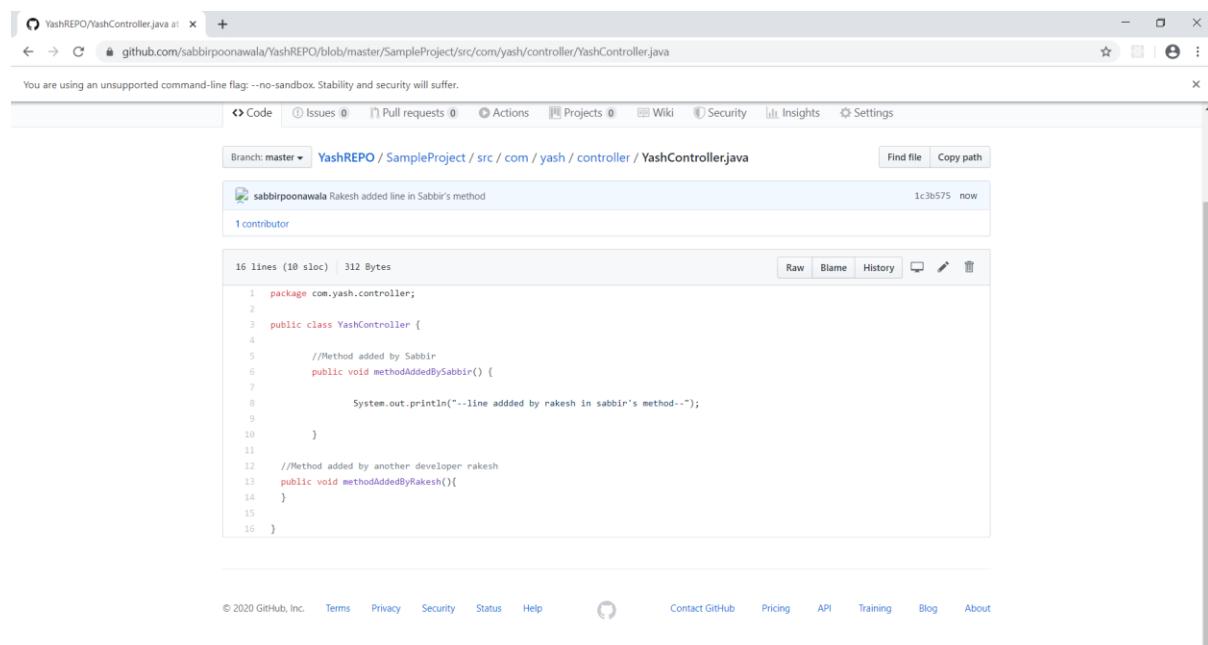
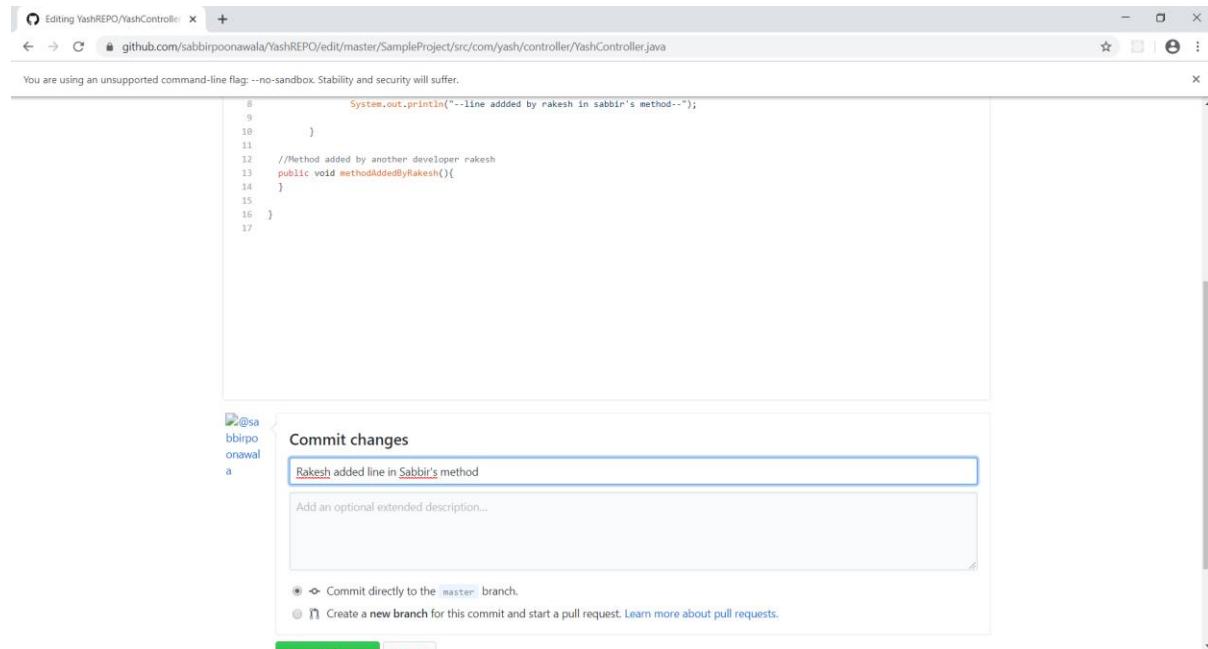
```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8     }
9
10    //Method added by another developer rakesh
11    public void methodAddedByRakesh(){
12    }
13
14 }
```

Another example, now say a developer “Rakesh” adds a statement in methodAddedBySabbir()

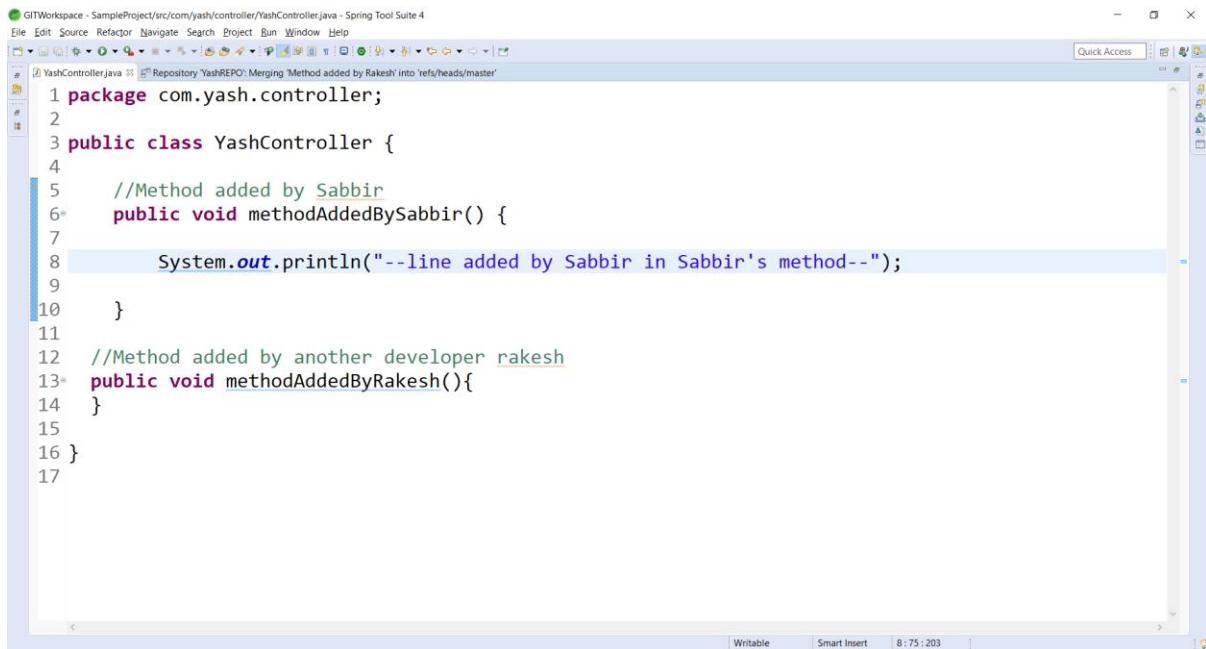


```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8         System.out.println("--line added by rakesh in sabbir's method--");
9     }
10
11    //Method added by another developer rakesh
12    public void methodAddedByRakesh(){
13    }
14
15
16 }
```

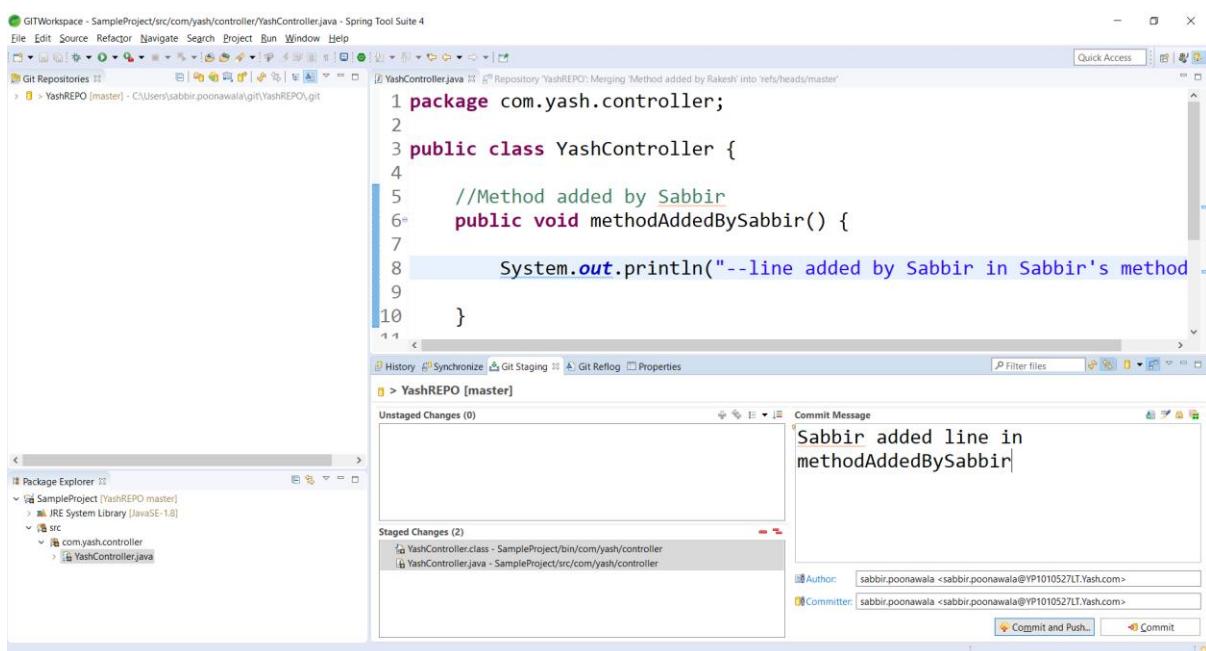
And commit's the changes to repository,



And developer "Sabbir" also adds a statement in methodAddedBySabbir(),



```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8         System.out.println("--line added by Sabbir in Sabbir's method--");
9     }
10
11
12     //Method added by another developer rakesh
13     public void methodAddedByRakesh(){
14
15
16 }
17
```



Unstaged Changes (0)

Staged Changes (2)

- YashController.class - SampleProject/bin/com/yash/controller
- YashController.java - SampleProject/src/com/yash/controller

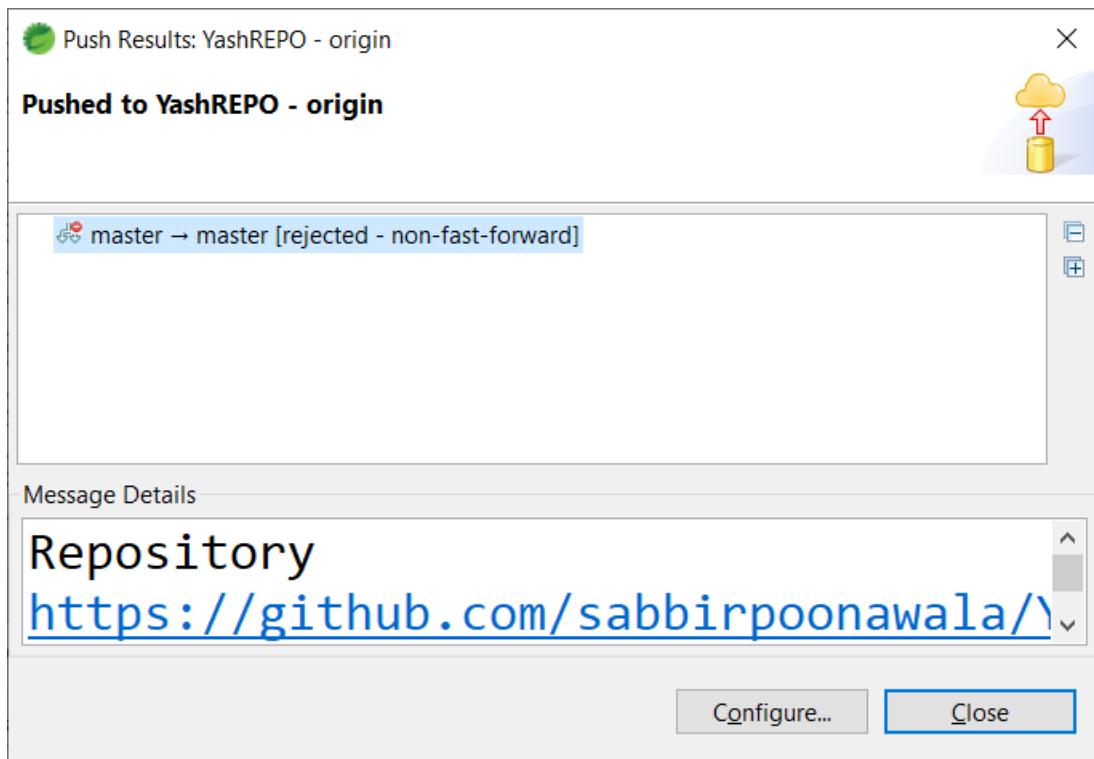
Commit Message  
Sabbir added line in methodAddedBySabbir

Author: sabbir.poonawala <sabbir.poonawala@YPT1010527LT.Yash.com>

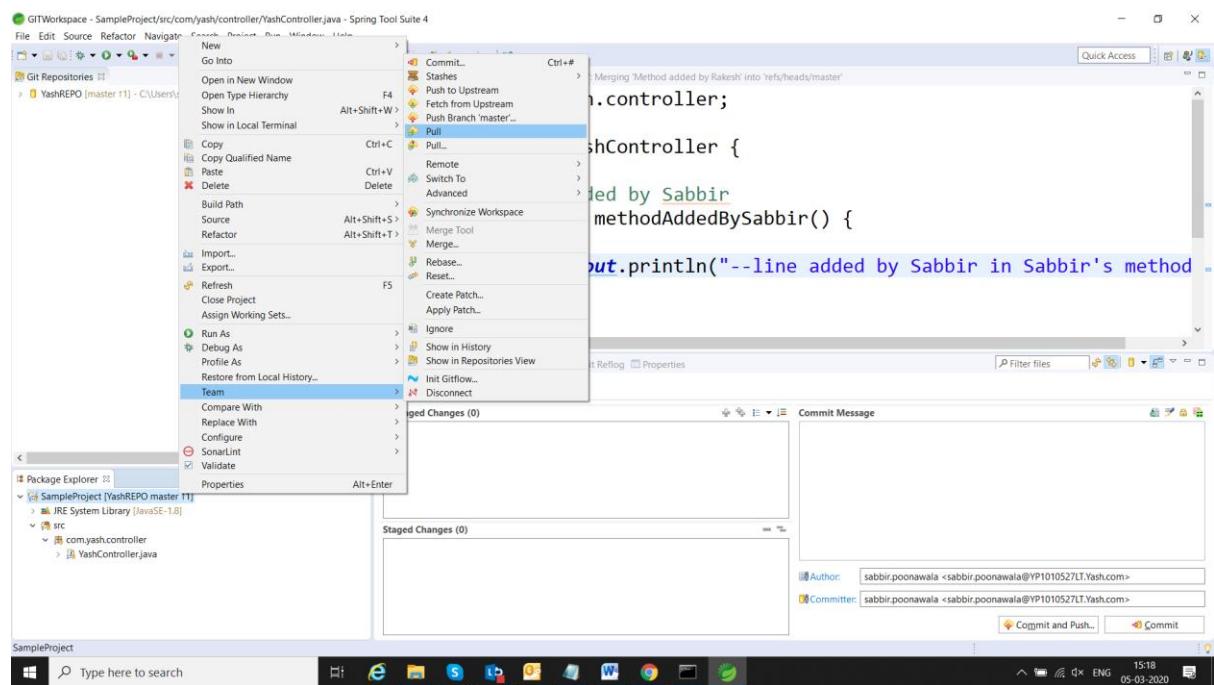
Committer: sabbir.poonawala <sabbir.poonawala@YPT1010527LT.Yash.com>

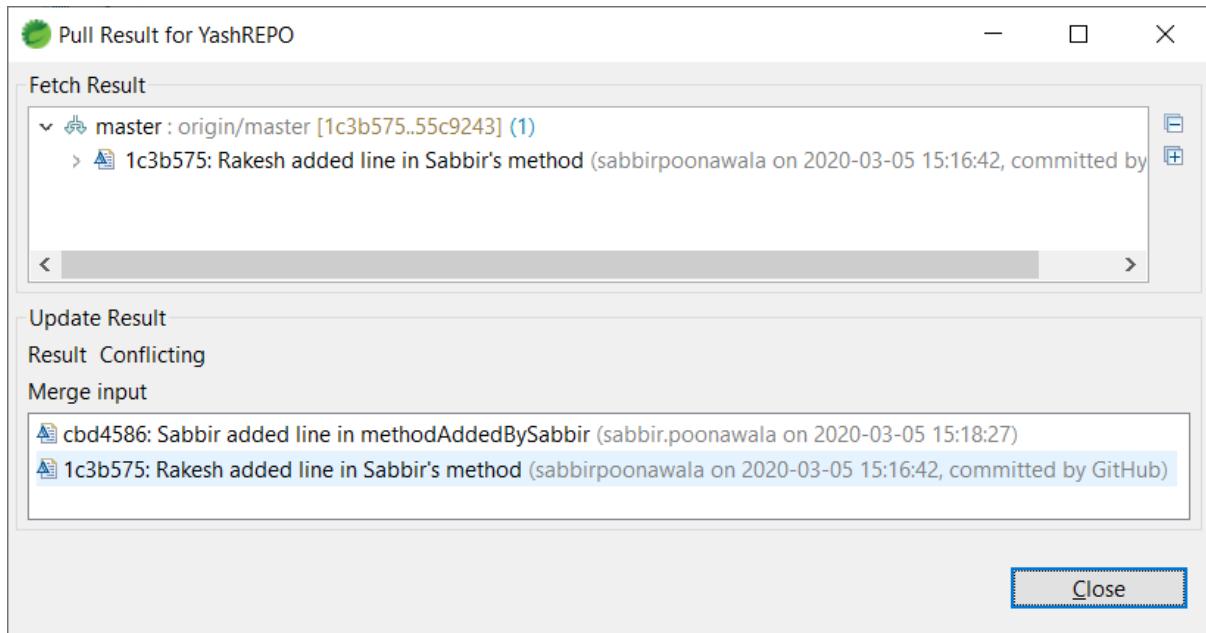
Commit and Push... Commit

And tries to commit to repository,

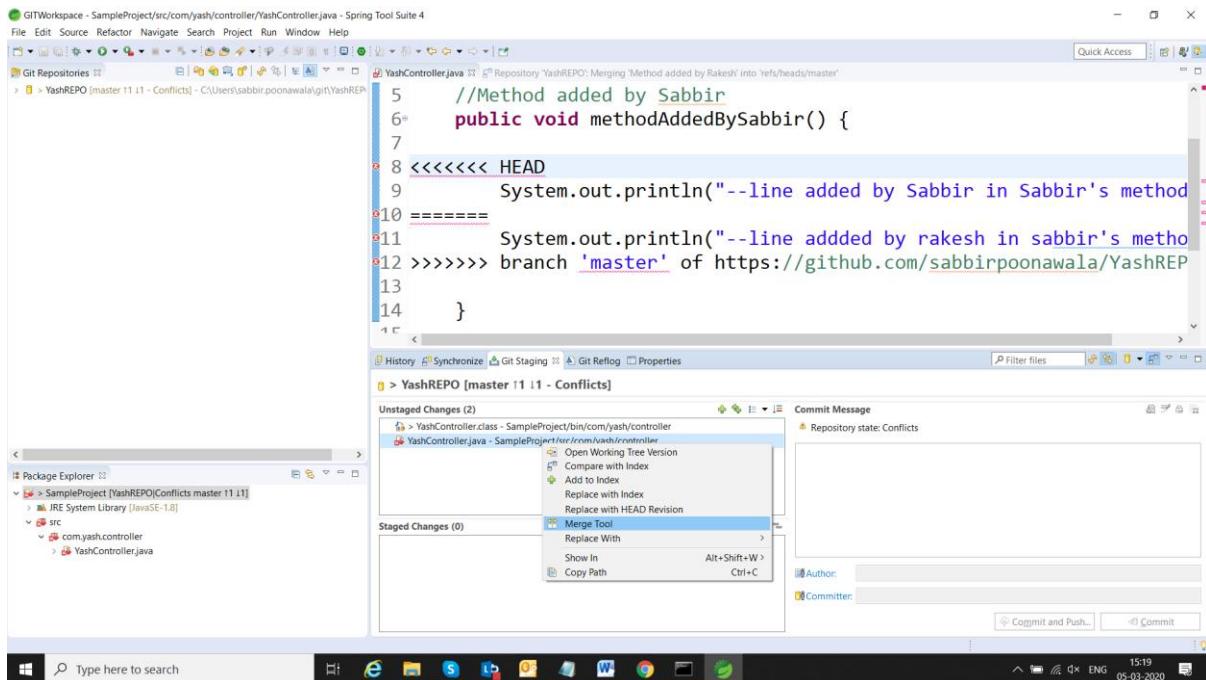


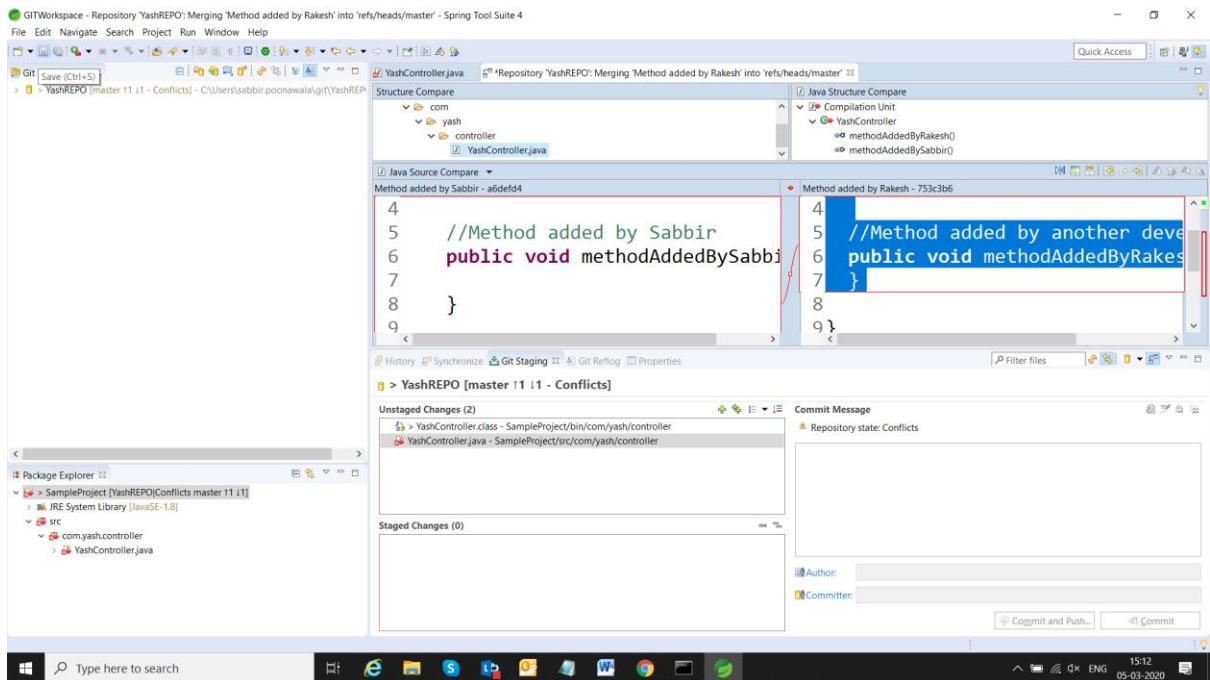
To resolve conflict follow below steps,





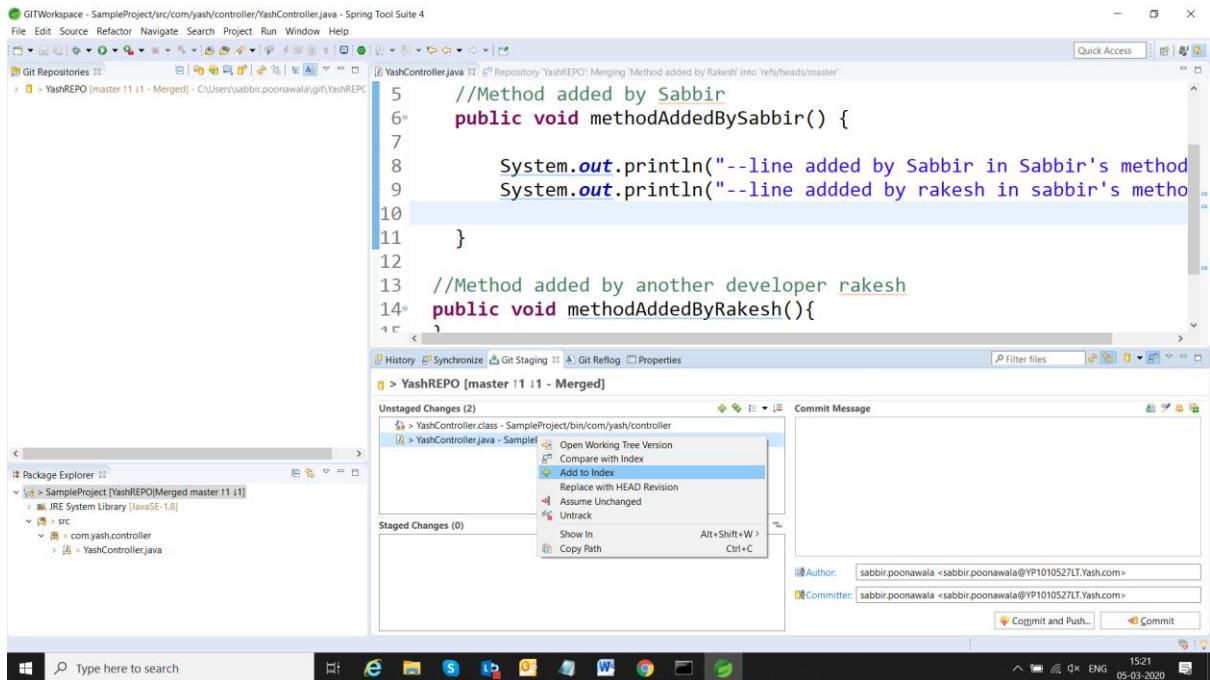
Right click on file having conflict and select merge tool,





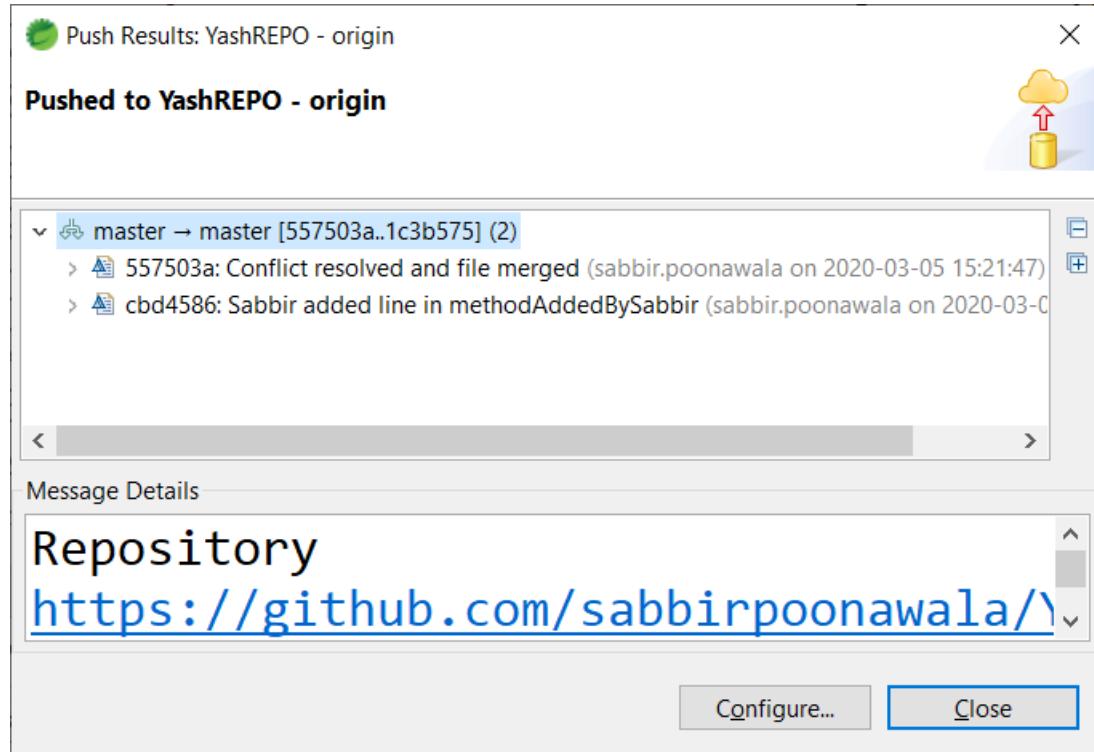
Click on icon “Add conflicting code from right to left”

To update eclipse that conflict is resolved and file is merged, right click on file and select “Add to index”



The screenshot shows the Eclipse IDE interface. In the center, a code editor displays a Java file named `YashController.java`. The code contains two methods: `methodAddedBySabbir()` and `methodAddedByRakesh()`. The `methodAddedBySabbir()` method has two print statements: `System.out.println("--line added by Sabbir in Sabbir's method")` and `System.out.println("--line added by rakesh in sabbir's method")`. Below the code editor is a Git commit dialog titled "Commit Message" with the text "Conflict resolved and file merged". It also shows the author and committer information as `sabbir.poonawala <sabbir.poonawala@YPT1010527LT.Yash.com>`. At the bottom right of the dialog are "Commit and Push..." and "Commit" buttons.

Now commit will be successful.



To verify in remote repository,

The screenshot shows a GitHub repository page for 'YashREPO/YashController.java'. The pull request has been merged by 'sabbir.poonawala' with the message 'Conflict resolved and file merged'. The code editor displays the Java file 'YashController.java' with 17 lines of code. The code includes two methods: 'methodAddedBySabbir()' and 'methodAddedByRakesh()'. Both methods print specific messages to the console.

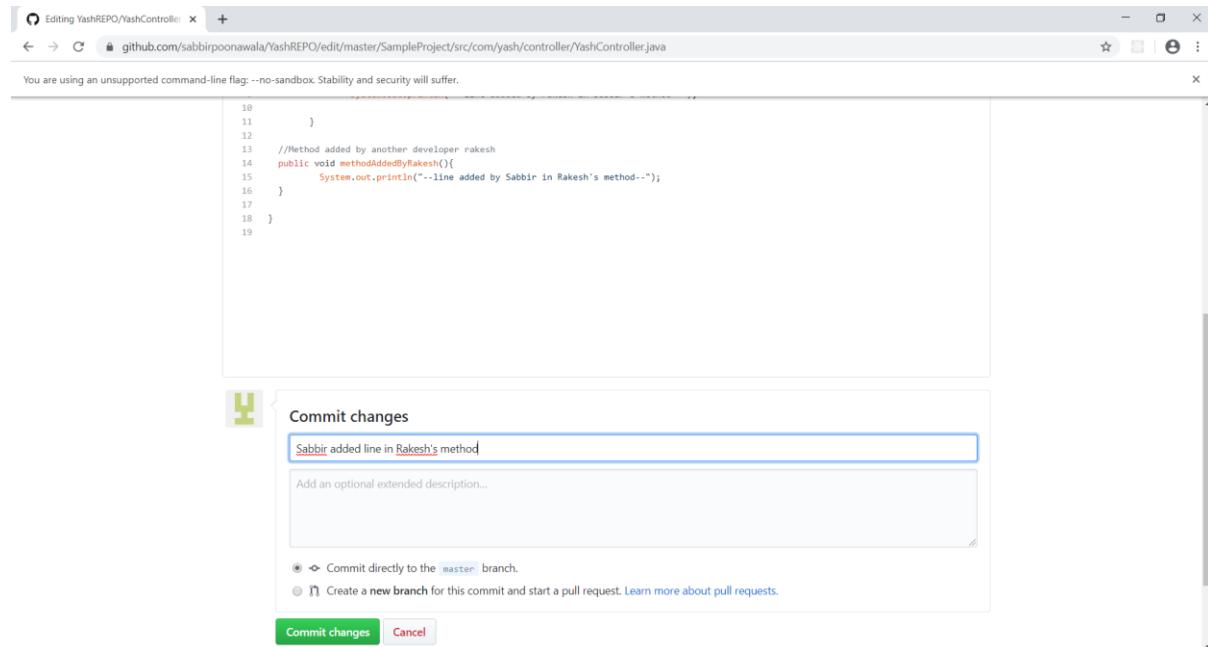
```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8         System.out.println("--line added by Sabbir in Sabbir's method--");
9         System.out.println("--line added by rakesh in sabbir's method--");
10    }
11
12
13    //Method added by another developer rakesh
14    public void methodAddedByRakesh(){
15    }
16
17 }
```

Developer Sabbir's source is also updated,

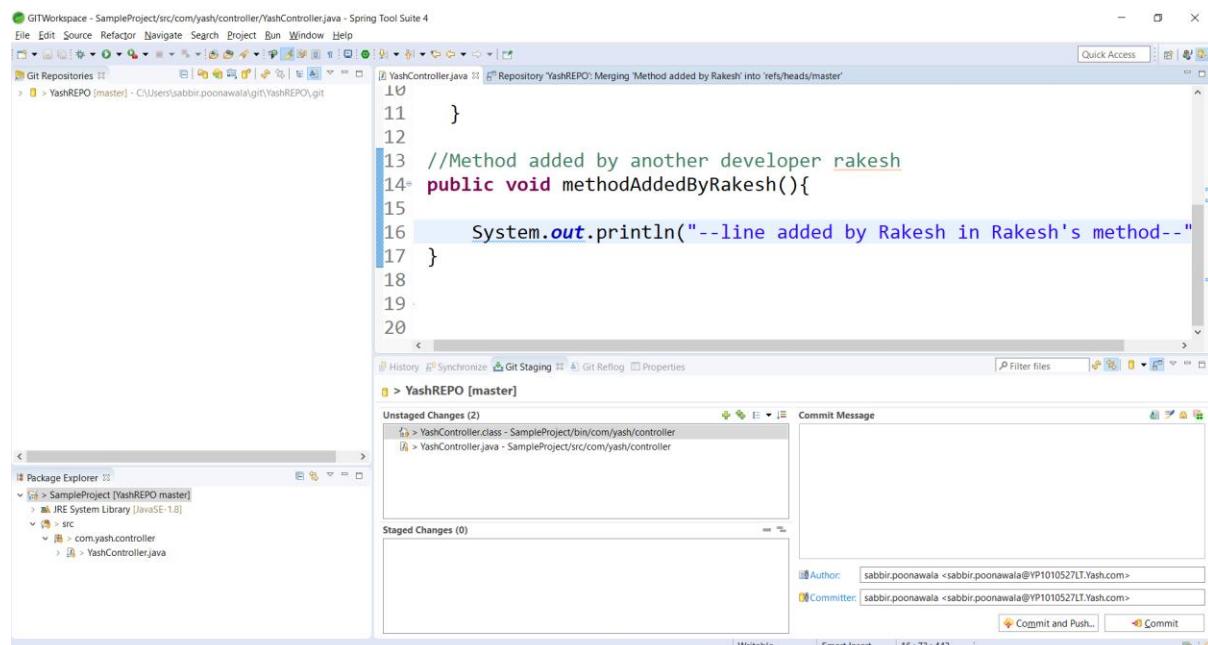
The screenshot shows the Eclipse IDE interface with the 'GITWorkspace - SampleProject/src/com/yash/controller/YashController.java' file open. The code editor displays the same Java file as the GitHub screenshot, showing the merged changes. The code includes two methods: 'methodAddedBySabbir()' and 'methodAddedByRakesh()'. Both methods print specific messages to the console.

```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8         System.out.println("--line added by Sabbir in Sabbir's method--");
9         System.out.println("--line added by rakesh in sabbir's method--");
10    }
11
12
13    //Method added by another developer rakesh
14    public void methodAddedByRakesh(){
15    }
16
17 }
18
```

Just for practice repeat the above steps assuming Sabbir adds a statement in Rakesh's method,



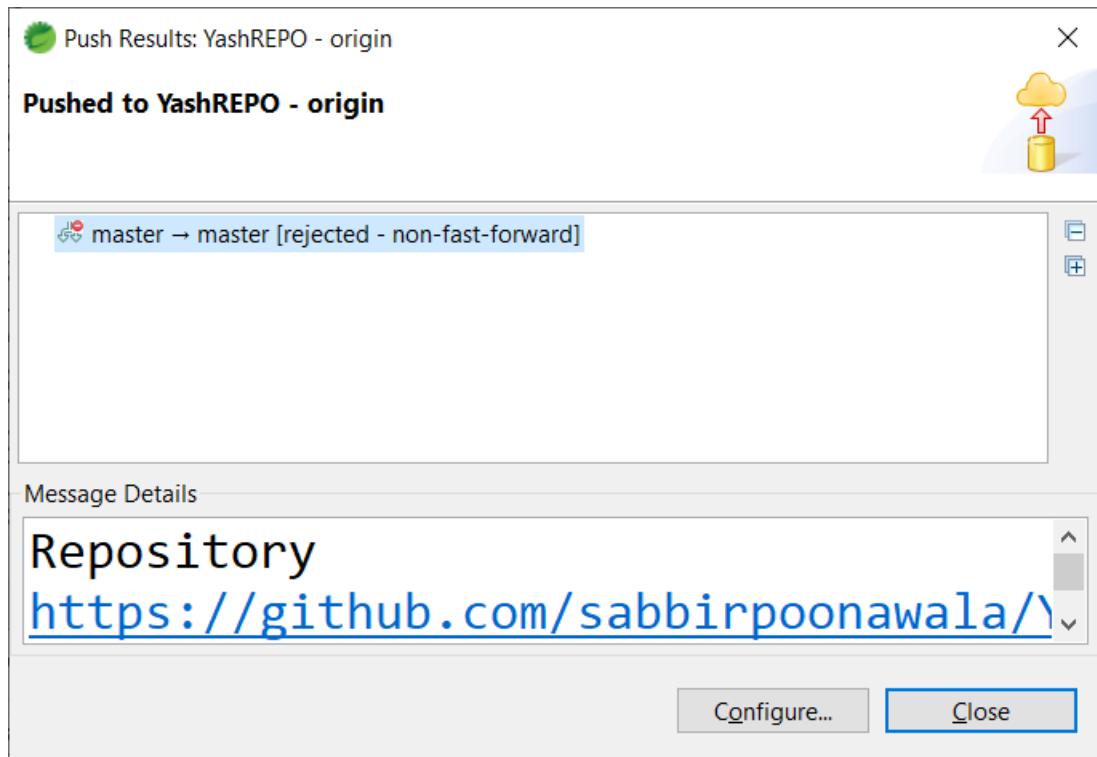
Now when Rakesh adds a statement in his own method and tries to commit,



The screenshot shows the Spring Tool Suite 4 interface. In the center, a code editor displays a Java file named YashController.java with the following content:

```
10
11  }
12
13 //Method added by another developer rakesh
14* public void methodAddedByRakesh(){
15
16     System.out.println("--line added by Rakesh in Rakesh's method--"
17 }
18
19
20
```

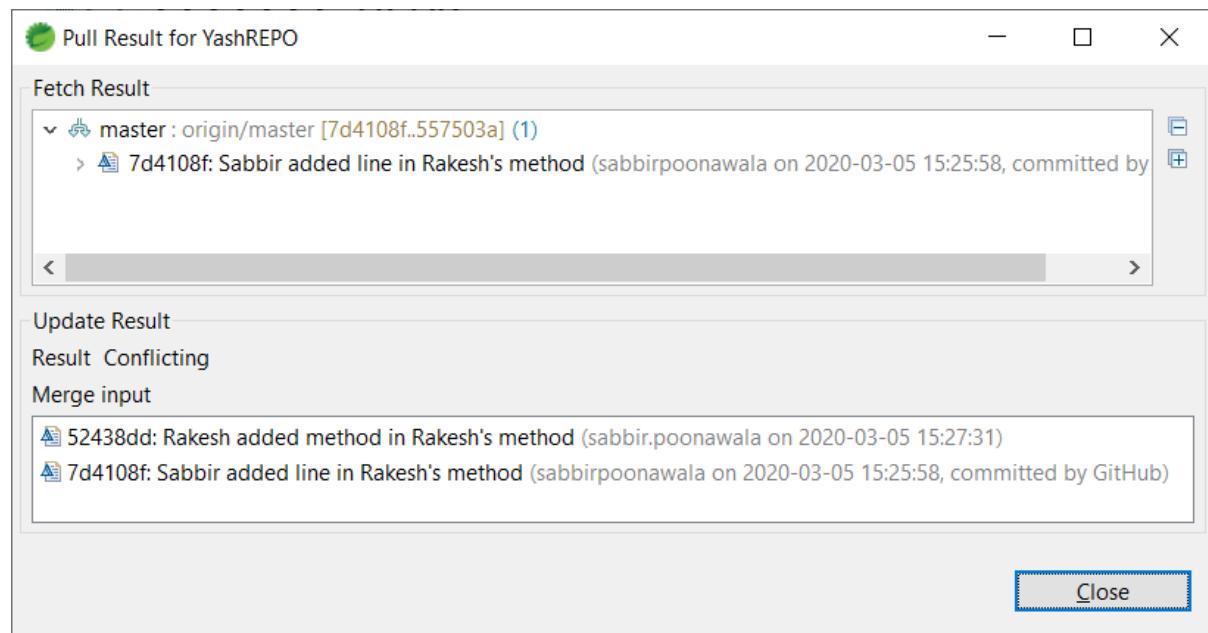
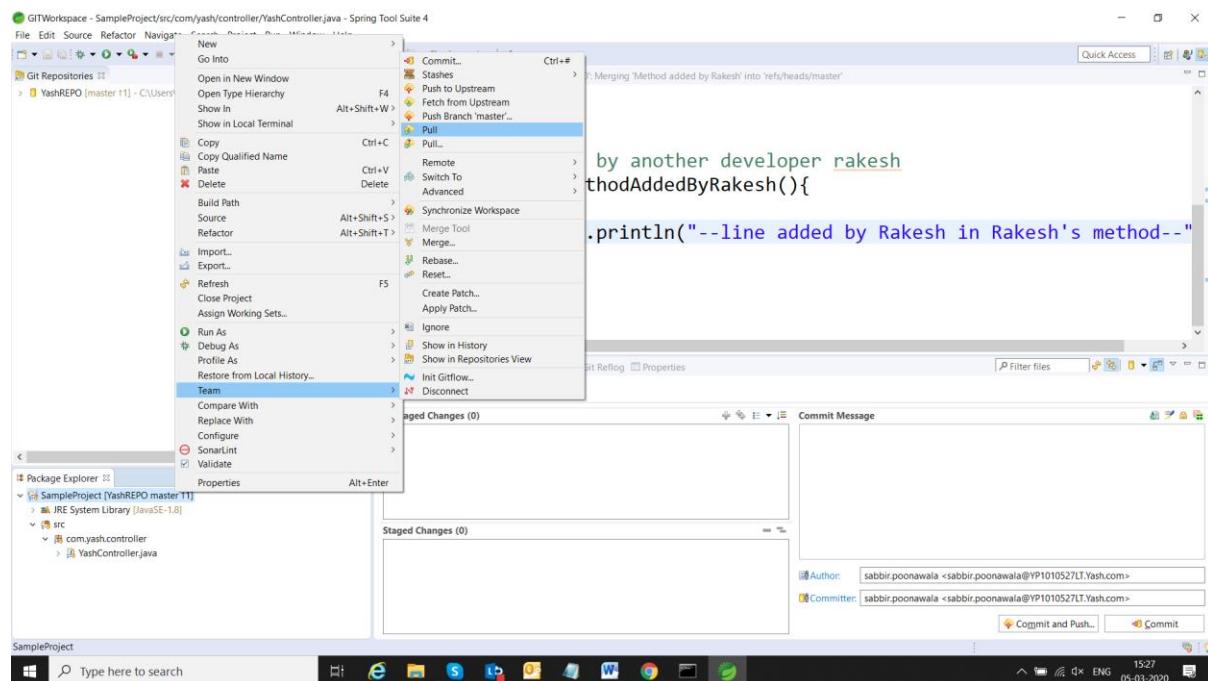
The file is shown as being merged from 'YashREPO' into 'refs/heads/master'. Below the code editor is the Git Repositories view, which shows a single repository 'YashREPO [master]'. The commit message for the current commit is 'Rakesh added method in Rakesh's method'. The commit dialog includes fields for Author and Committer, both set to 'sabbir.poonawala <sabbir.poonawala@YPT1010527LT.Yash.com>'. At the bottom right of the dialog are 'Commit and Push...' and 'Commit' buttons.



To resolve follow below steps,

Right click on project in project explorer,

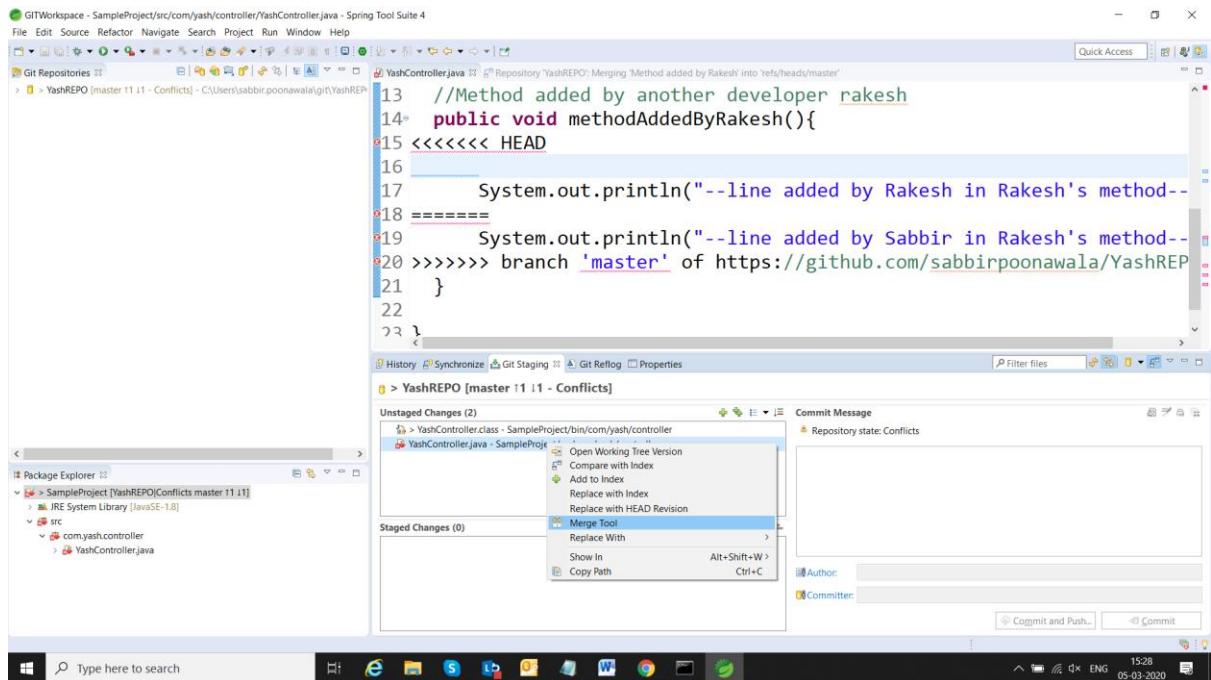
Team-> pull

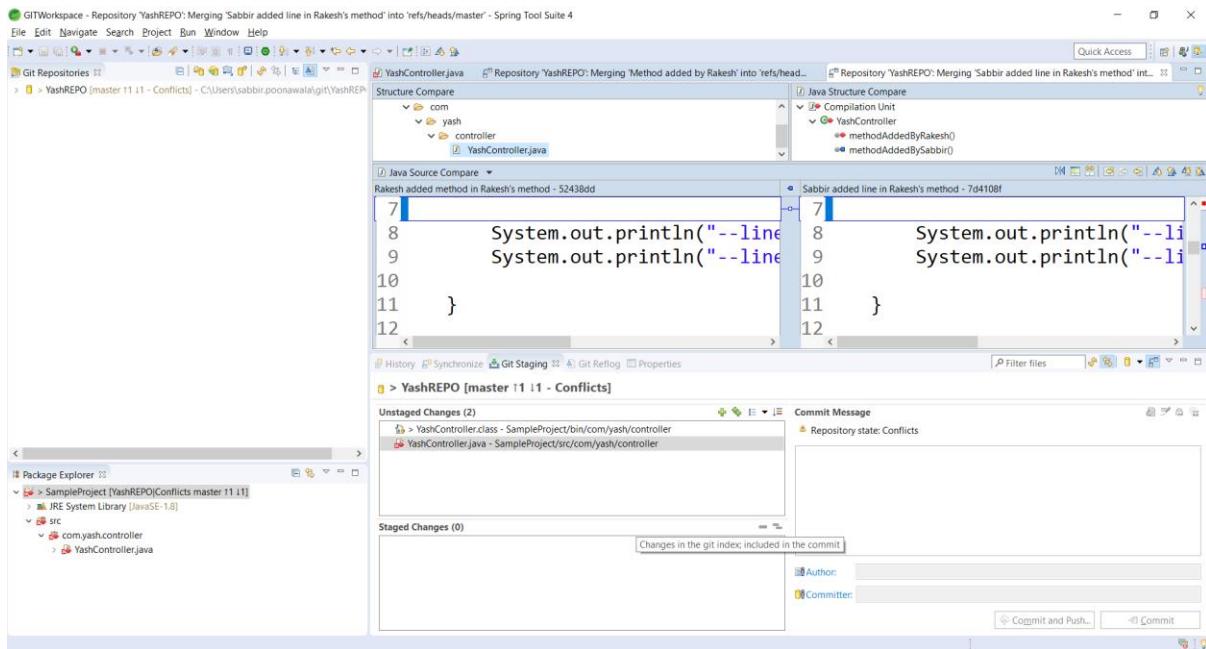


The screenshot shows the Eclipse IDE interface with the following details:

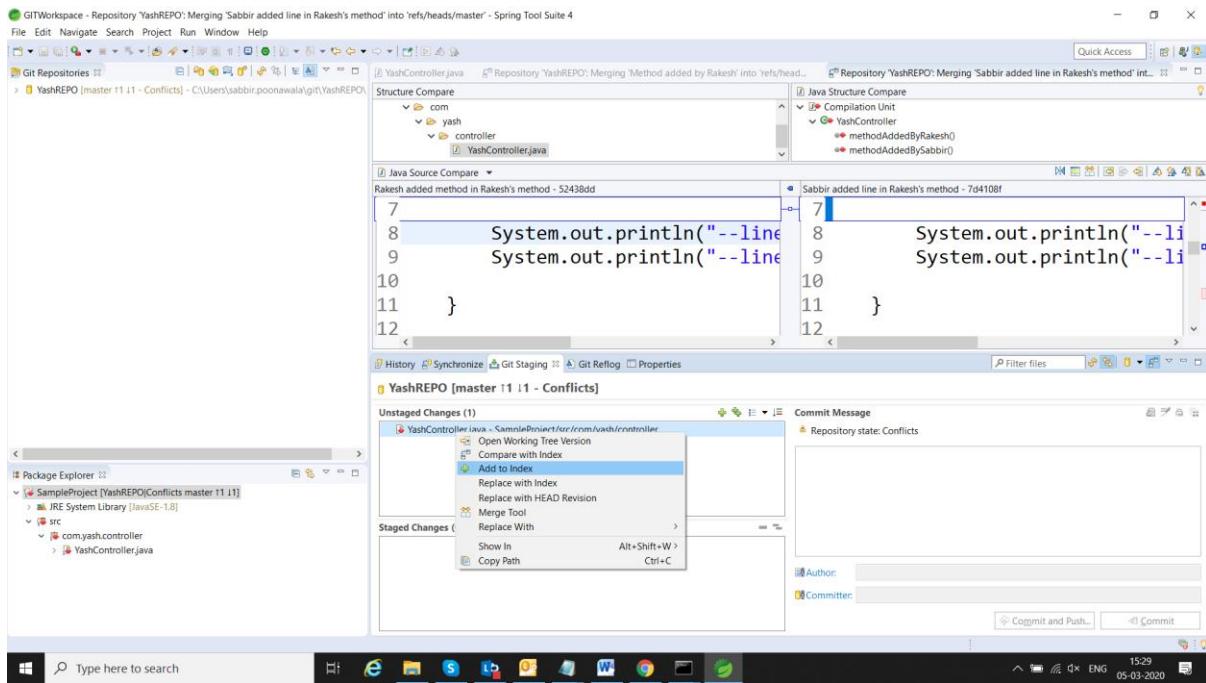
- File Header:** GITWorkspace - SampleProject/src/com/yash/controller/YashController.java - Spring Tool Suite 4
- Code Editor:** Shows a Java file with merge conflicts. Lines 13-14 are from 'rakesh', line 15 is a conflict marker, lines 17-19 are from 'Sabbir', and line 20 is a conflict marker.
- Git Staging View:** Shows 'Unstaged Changes' with a red arrow next to YashController.java, indicating a conflict.
- Context Menu:** A context menu is open over the YashController.java file in the Git Staging view, with 'Merge Tool' selected.

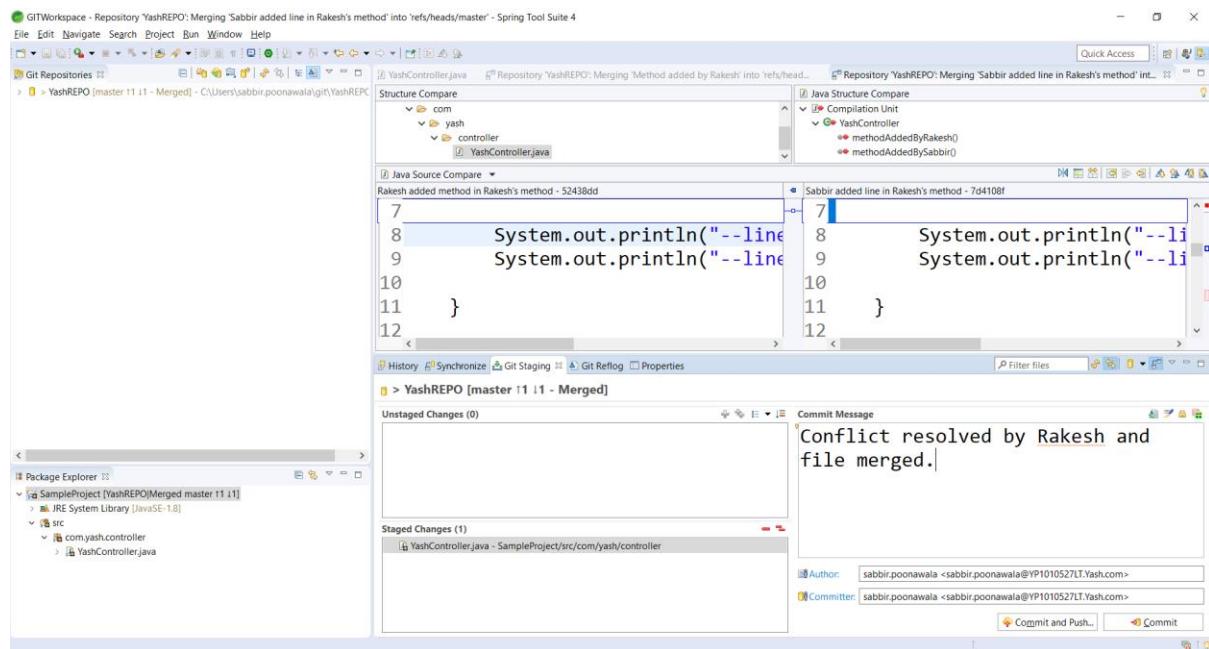
Right click on file with red arrow( file having conflict) and select mergetool,



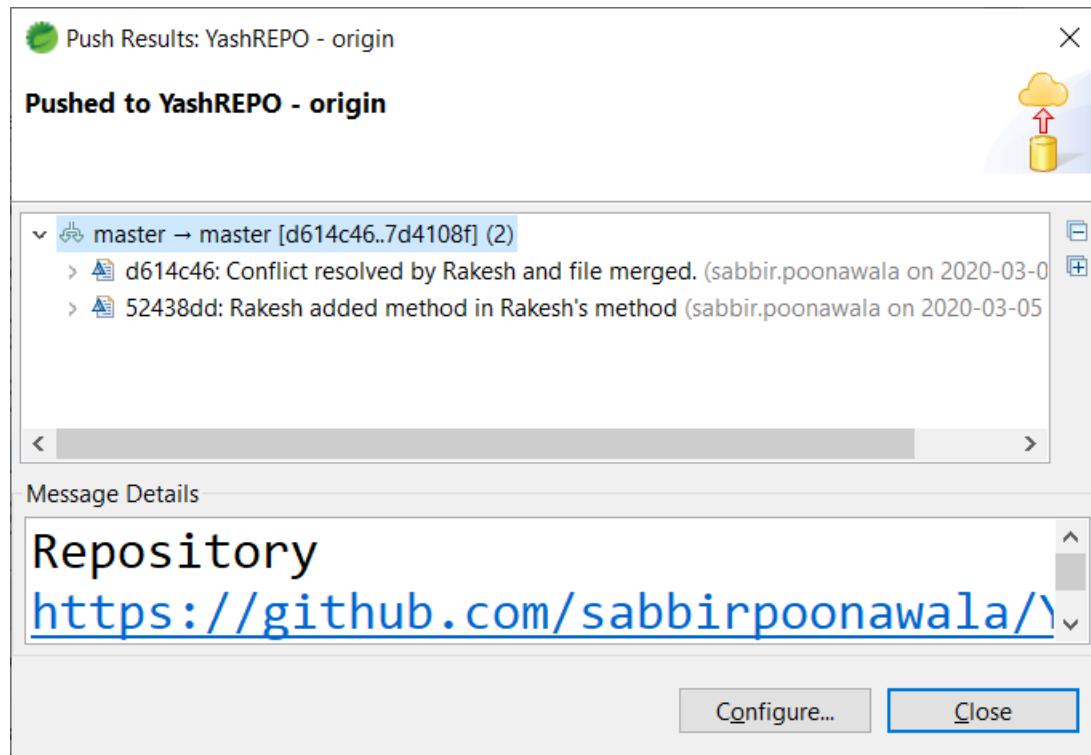


Click on icon “Copy conflicting code from right to left”,

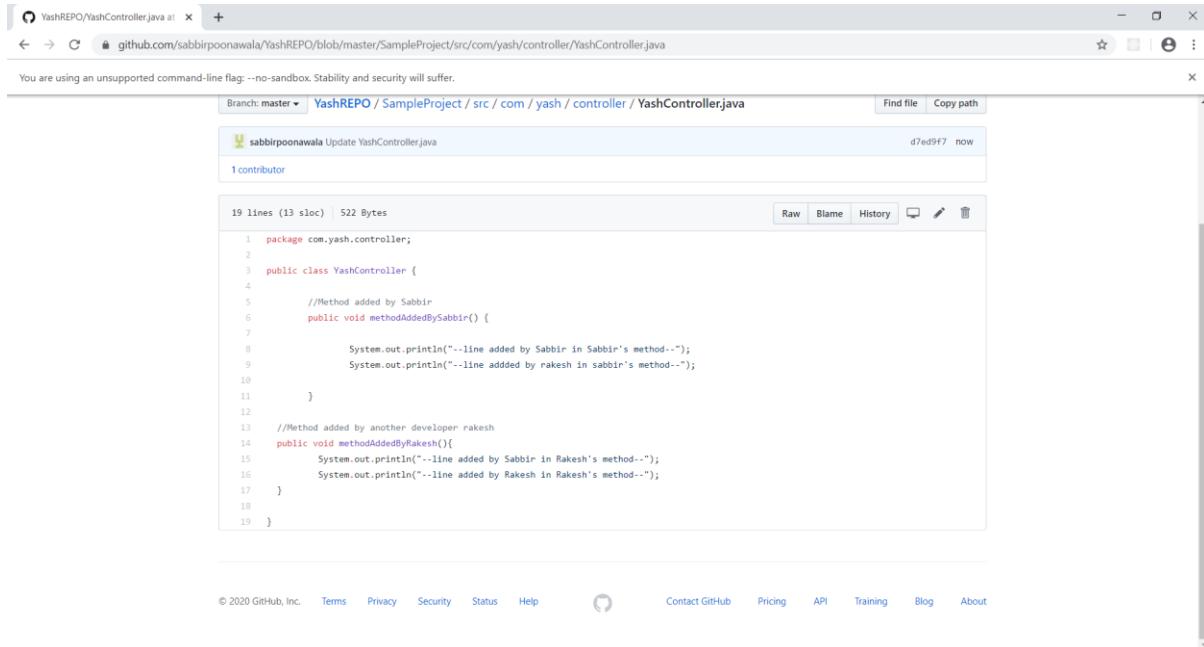




Since conflict are resolved and file merged, commit to remote repository will be successful.



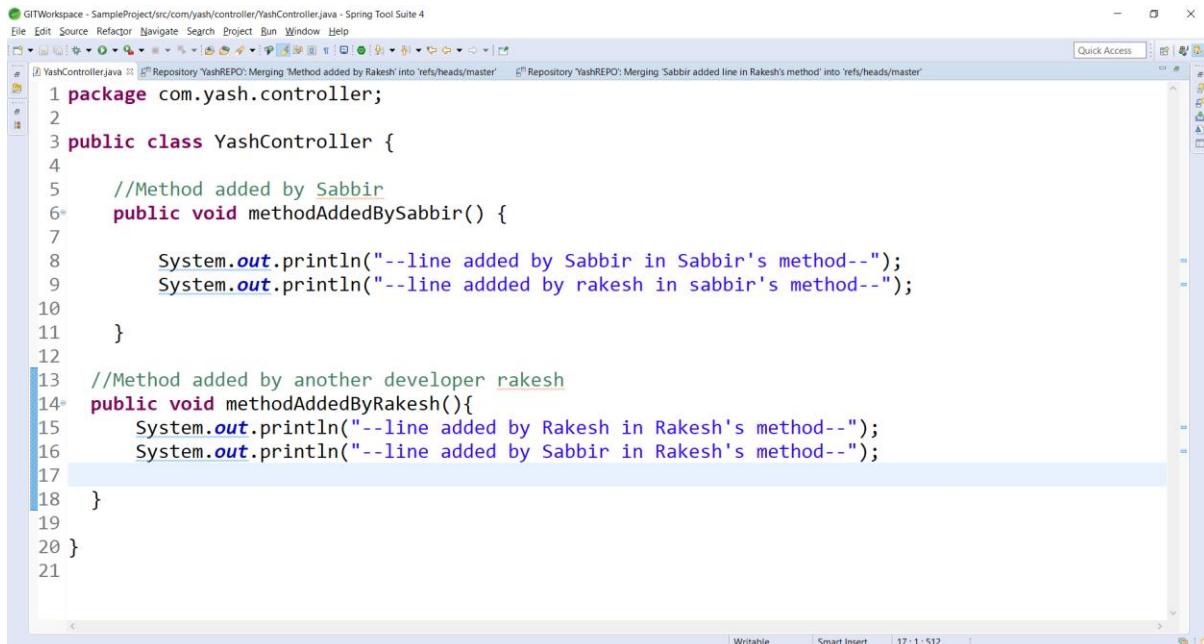
## Verify in repository,



The screenshot shows a GitHub repository page for 'YashREPO/YashController.java'. The code is as follows:

```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8         System.out.println("--line added by Sabbir in Sabbir's method--");
9         System.out.println("--line added by rakesh in sabbir's method--");
10    }
11
12    //Method added by another developer rakesh
13    public void methodAddedByRakesh(){
14        System.out.println("--line added by Rakesh in Rakesh's method--");
15        System.out.println("--line added by Sabbir in Rakesh's method--");
16    }
17 }
18
19
20 }
```

Verify in eclipse if the YashController is updated.



The screenshot shows the Eclipse IDE with the YashController.java file open. The code is identical to the one shown in the GitHub screenshot, indicating successful merge.

```
1 package com.yash.controller;
2
3 public class YashController {
4
5     //Method added by Sabbir
6     public void methodAddedBySabbir() {
7
8         System.out.println("--line added by Sabbir in Sabbir's method--");
9         System.out.println("--line added by rakesh in sabbir's method--");
10    }
11
12    //Method added by another developer rakesh
13    public void methodAddedByRakesh(){
14        System.out.println("--line added by Rakesh in Rakesh's method--");
15        System.out.println("--line added by Sabbir in Rakesh's method--");
16    }
17 }
18
19
20 }
```

For any queries write to,

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