

Git, Gestion de branches sous IntelliJ

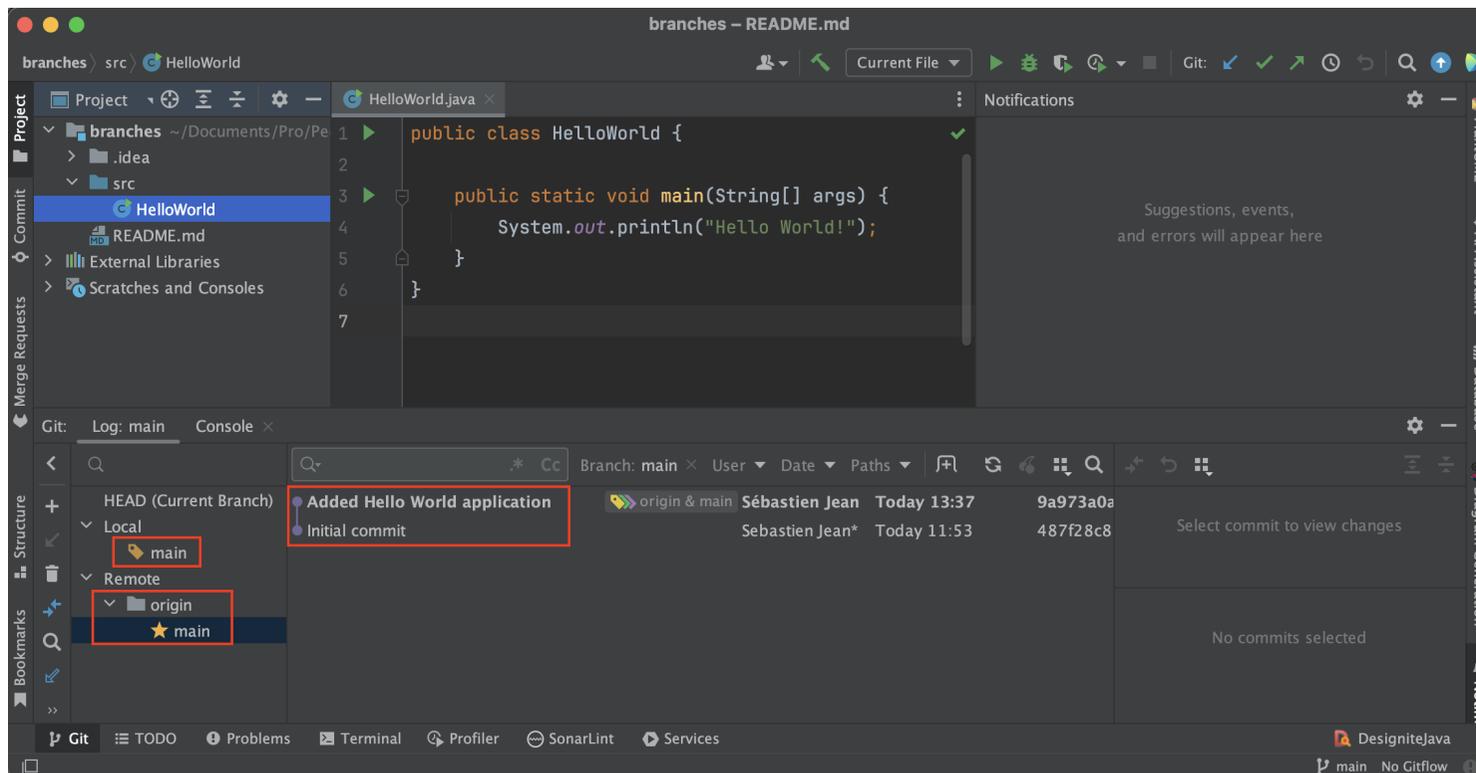
Sébastien Jean

IUT de Valence
Département Informatique

v1.0, 5 décembre 2023

Point de départ

- **Dépôt local initial** : une branche unique **main** (synchronisée) et **2** commits



Point de départ

- Dépôt distant initial : une branche unique `main` et 2 commits

gitlab.iut-valence.fr/jeans/branches

Sebastien Jean / branches - GitLab

Sebastien Jean > branches

branches
Project ID: 5141

2 Commits 1 Branch 0 Tags 14 KiB Project Storage

Dummy repository for git branching training using IntelliJ

Added Hello World application
Sébastien Jean authored 1 hour ago

9a973a8a

main branches / +

History Find file Edit ↓ ↓ Clone ↓

README Add LICENSE Add CHANGELOG Add CONTRIBUTING Set up CI/CD Configure Integrations

Name	Last commit	Last update
.idea	Initial commit	24 minutes ago
src	Added Hello World application	24 minutes ago
README.md	Initial commit	24 minutes ago

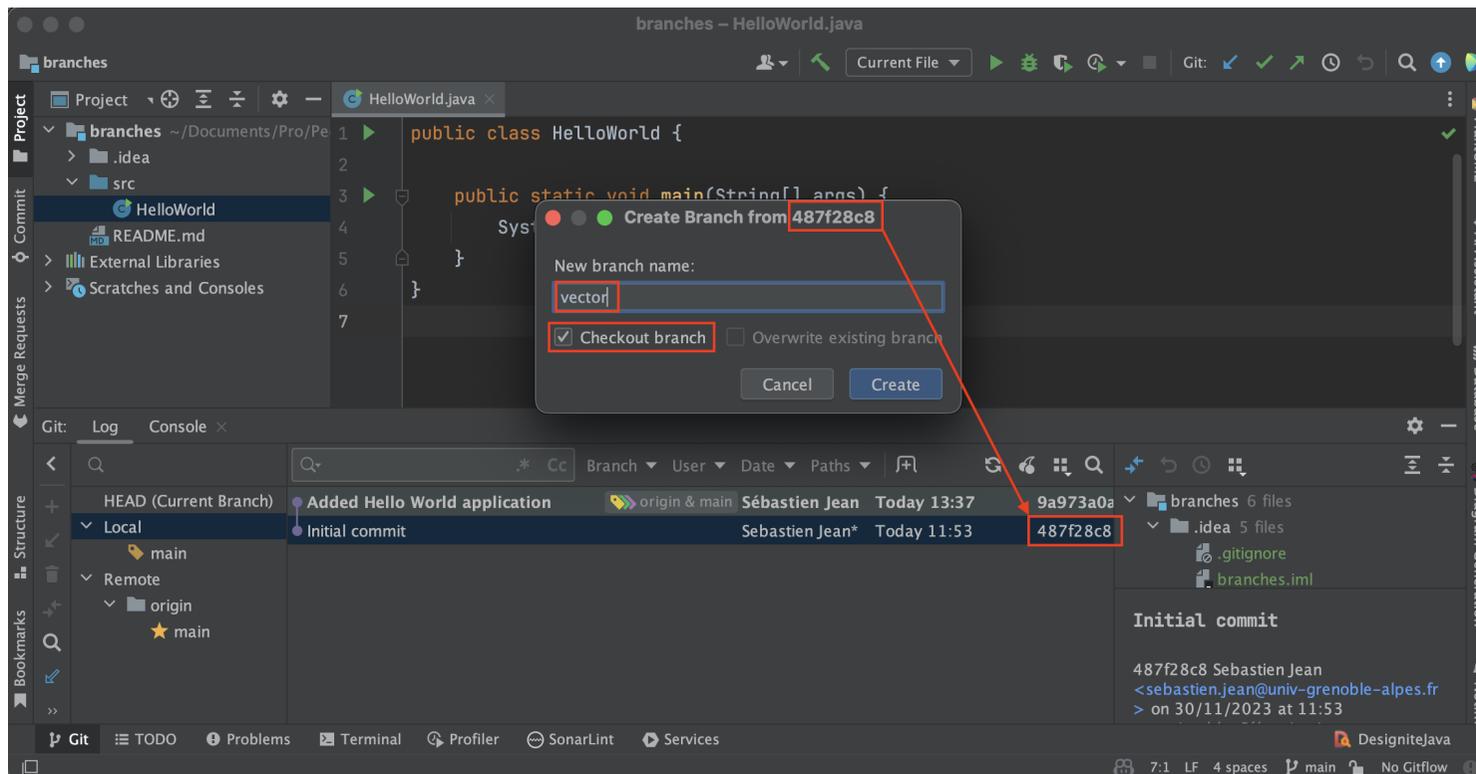
README.md

Git-Branches

Dummy repository for git branching training using IntelliJ.

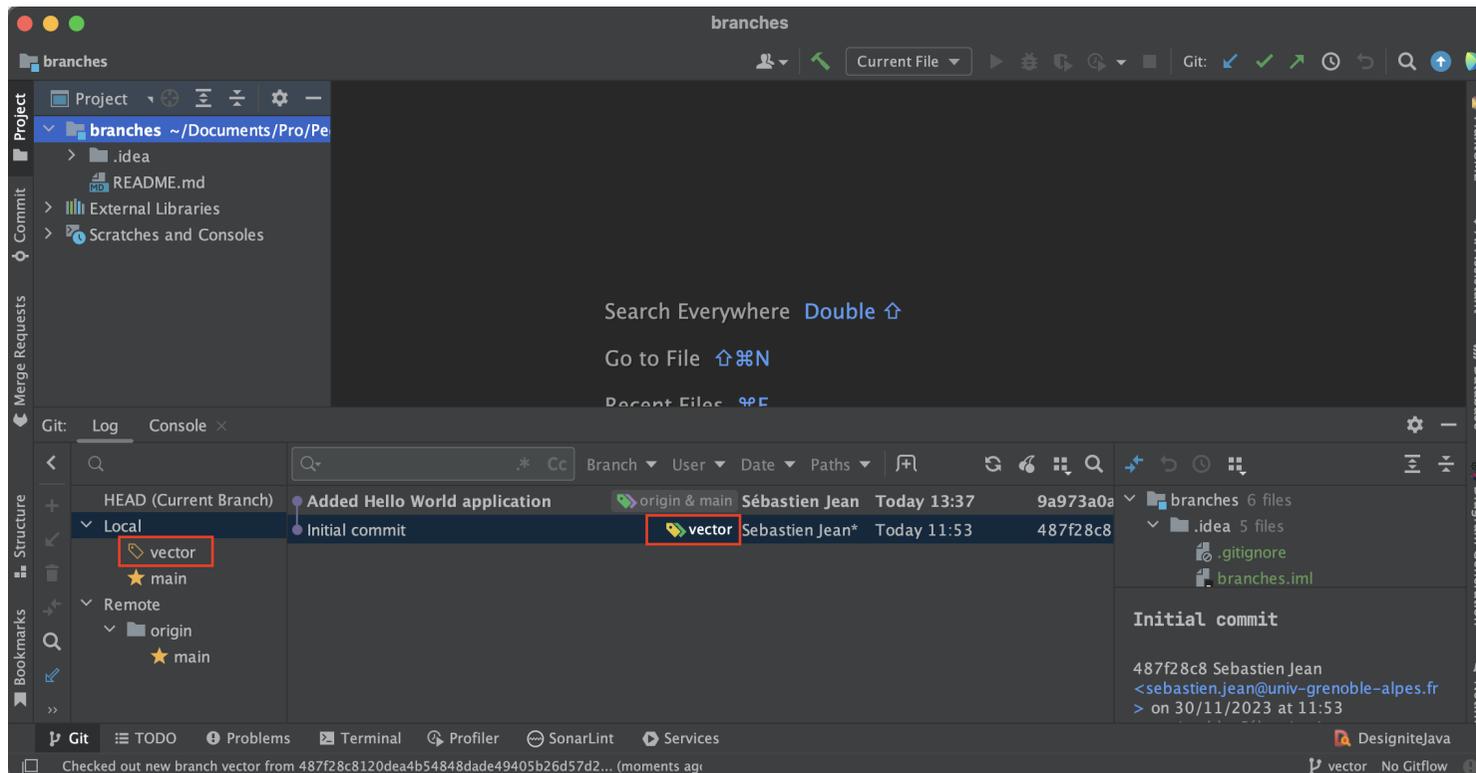
Créer une nouvelle branche

- En se plaçant sur un **commit** (ici 487f28c8)
- En indiquant un **nom** de branche
- Avec en **option** la possibilité de se **déplacer immédiatement** sur la nouvelle branche



Créer une nouvelle branche, suite

- La branche est créée **localement**
- Le **répertoire de travail** reflète le **dernier commit** sur la branche
- Avec en **option** la possibilité de se **déplacer immédiatement** sur la nouvelle branche



Créer une nouvelle branche, suite

- La branche est créée **localement uniquement**

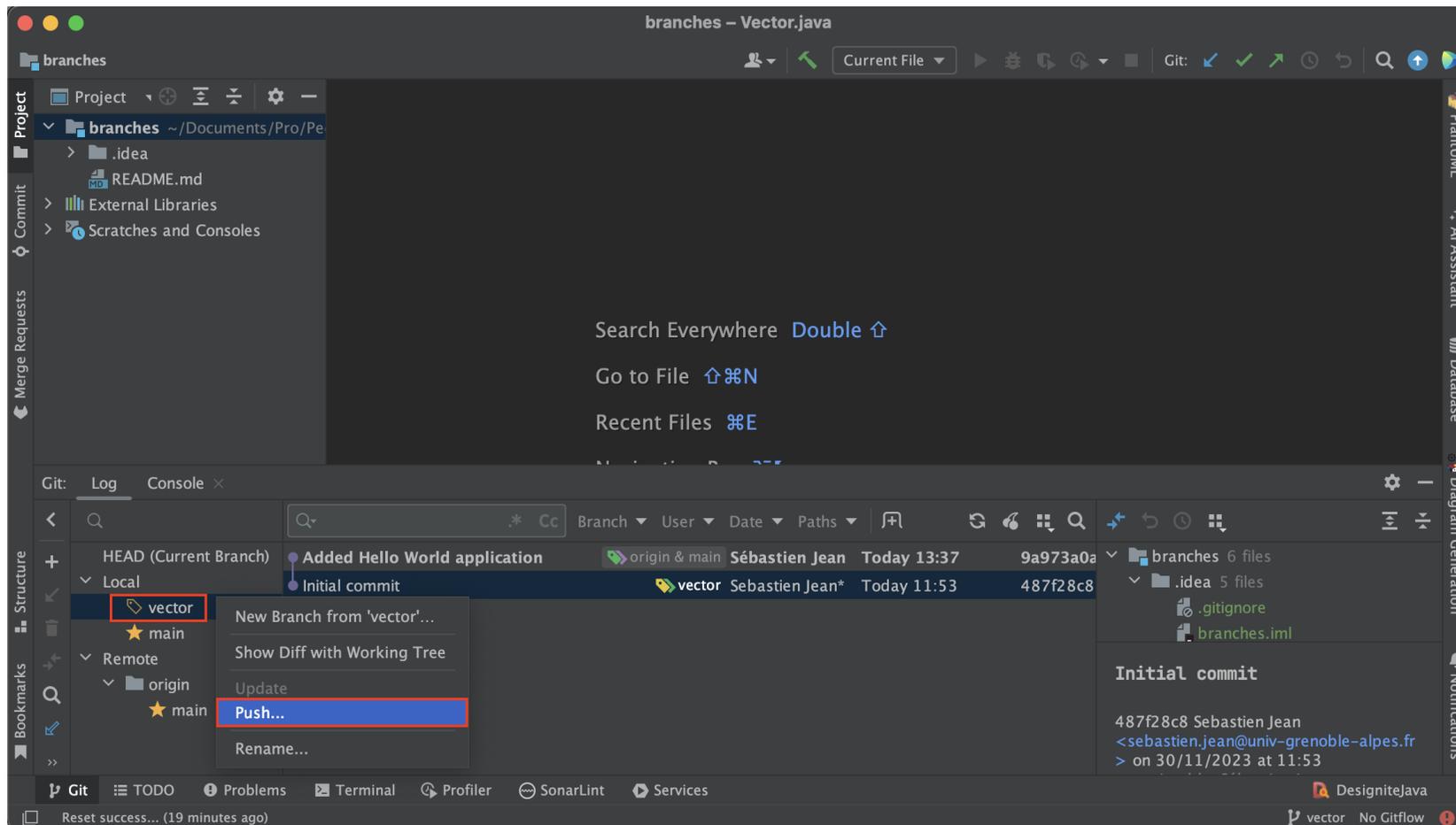
The screenshot shows the GitLab web interface for a repository named 'branches' (Project ID: 5141). The interface includes a sidebar with navigation options like 'Project', 'Pinned', 'Manage', 'Code', and 'Settings'. The main content area displays the repository's commit history, showing a single commit titled 'Added Hello World application' by Sébastien Jean, authored 1 hour ago. Below the commit history, there is a table listing the files in the repository:

Name	Last commit	Last update
.idea	Initial commit	24 minutes ago
src	Added Hello World application	24 minutes ago
README.md	Initial commit	24 minutes ago

Below the table, the content of the README.md file is displayed, showing the title 'Git-Branches' and the description 'Dummy repository for git branching training using IntelliJ.'

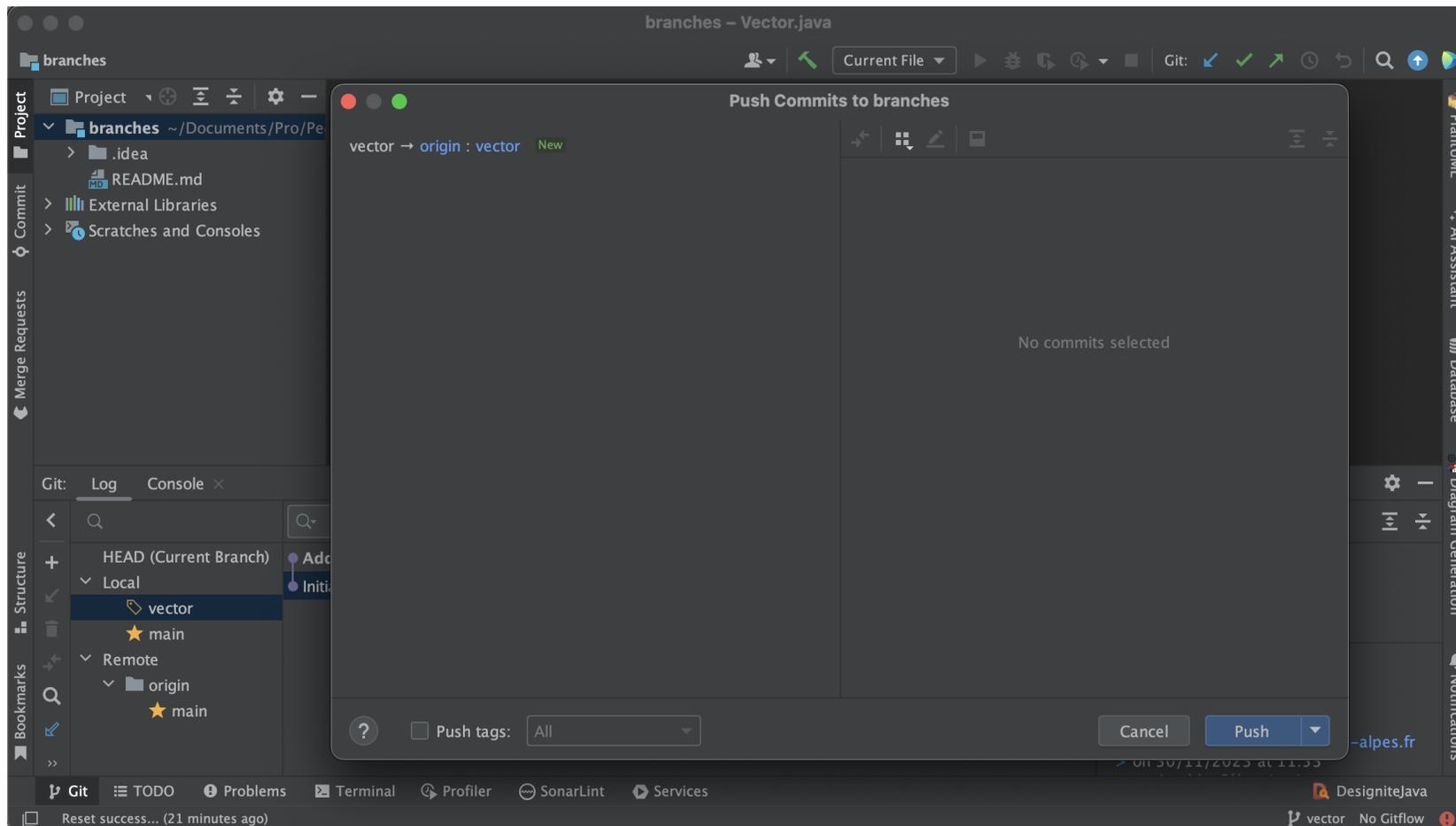
Publier une branche

- La branche doit être **publiée explicitement** sur le serveur



Publier une branche

- (La branche doit être **publiée explicitement** sur le serveur)



Publier une branche, suite

- La branche distante est créée

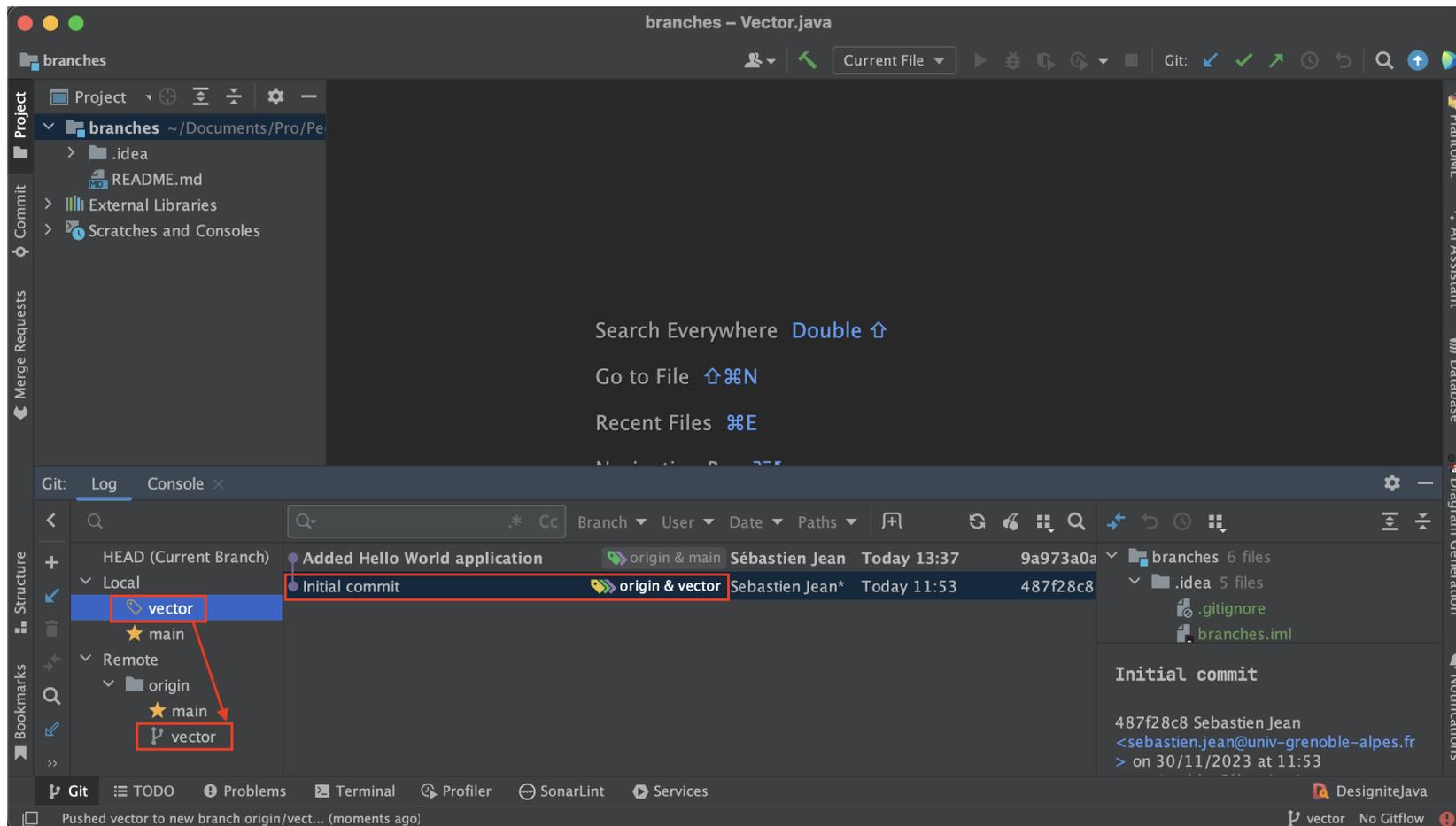
The screenshot shows the GitLab interface for a repository named 'branches'. The repository has 2 commits and 2 branches. A commit titled 'Added Hello World application' is highlighted. A dropdown menu for 'Select Git revision' is open, showing the 'vector' branch selected. The commit history table is visible below.

	Last commit	Last update
	Initial commit	1 hour ago
	Added Hello World application	1 hour ago
📄 README.md	Initial commit	1 hour ago

Git-Branches
Dummy repository for git branching training using IntelliJ.

Publier une branche, fin

- La branche **locale** est **associée** à la branche **distante** (*remote-tracking*)



Effectuer un commit sur une branche

- Un **commit** sur la branche `vector` fait avancer la branche `vector` **indépendamment** de `main`

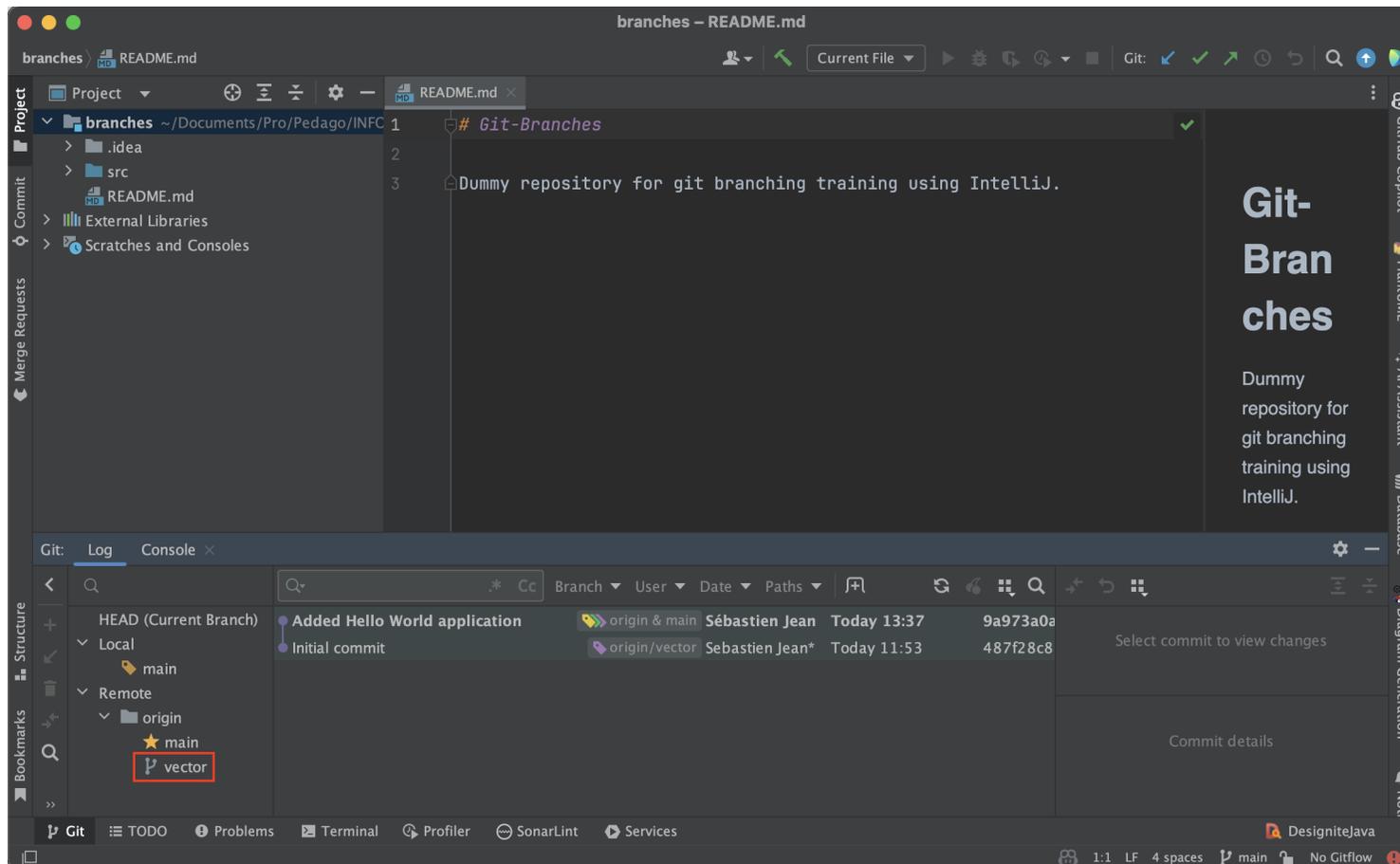
The screenshot shows an IDE window titled "branches - Vector.java". The main editor displays the code for a `Vector` class with two private final double attributes (`cx` and `cy`) and two public getter methods (`getCx()` and `getCy()`). The bottom panel shows the Git log for the `vector` branch. The log entries are:

Commit Hash	Message	Author	Date	SHA-1
97dfb9b9	Added Vector class	Sébastien Jean	Moments ago	97dfb9b9
9a973a0a	Added Hello World application	Sébastien Jean	Today 13:37	9a973a0a
487f28c8	Initial commit	Sebastien Jean*	Today 11:53	487f28c8

The "Initial commit" entry is highlighted in blue. The bottom status bar shows "1 file committed: Added Vector cla... (moments ago)".

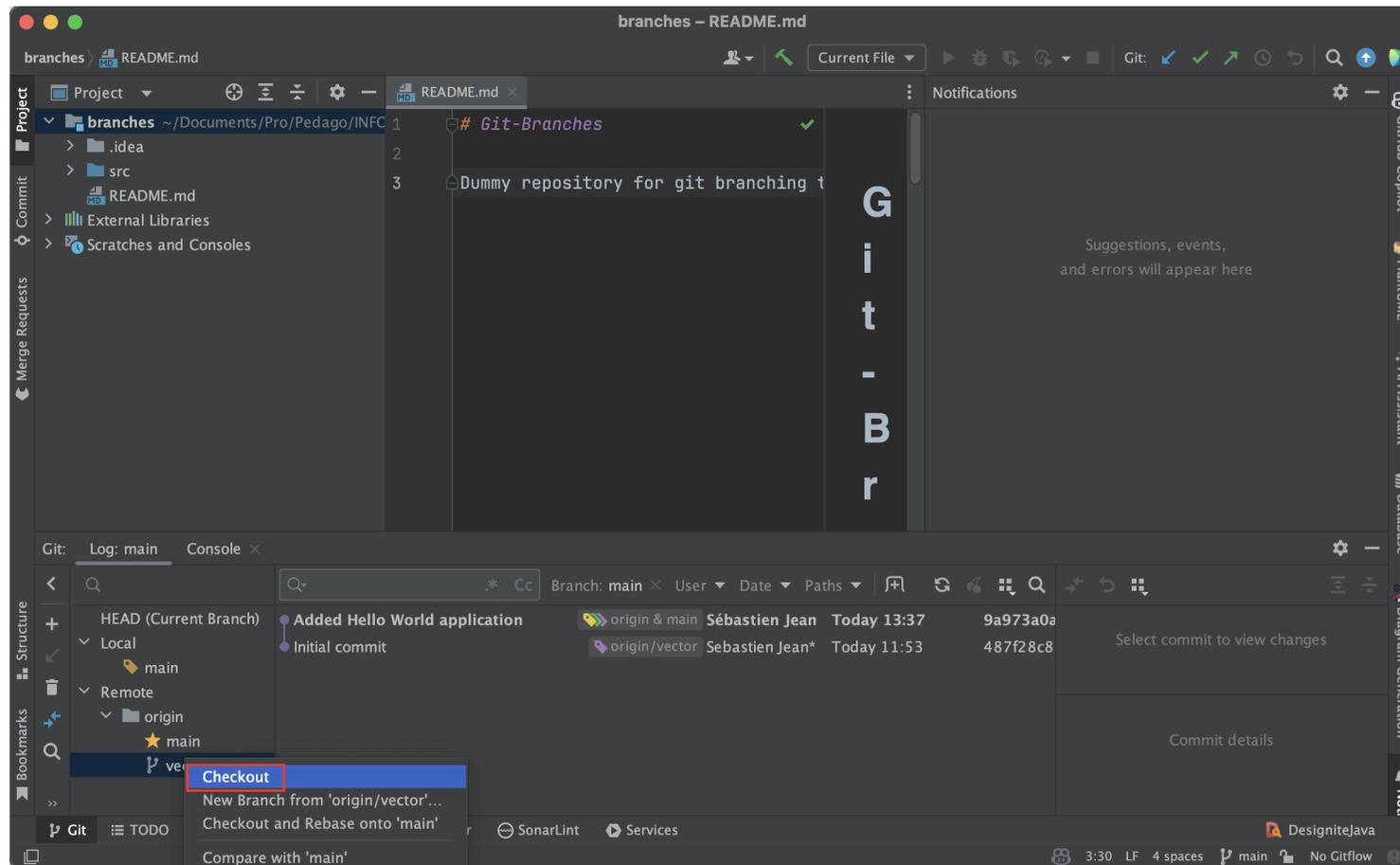
Cloner et reconstruire les branches

- Le **clonage d'un dépôt** contenant **plusieurs branches** :
 - **rapatrie** toutes les branches distantes (*fetch*)
 - **crée *uniquement*** la branche principale `main`

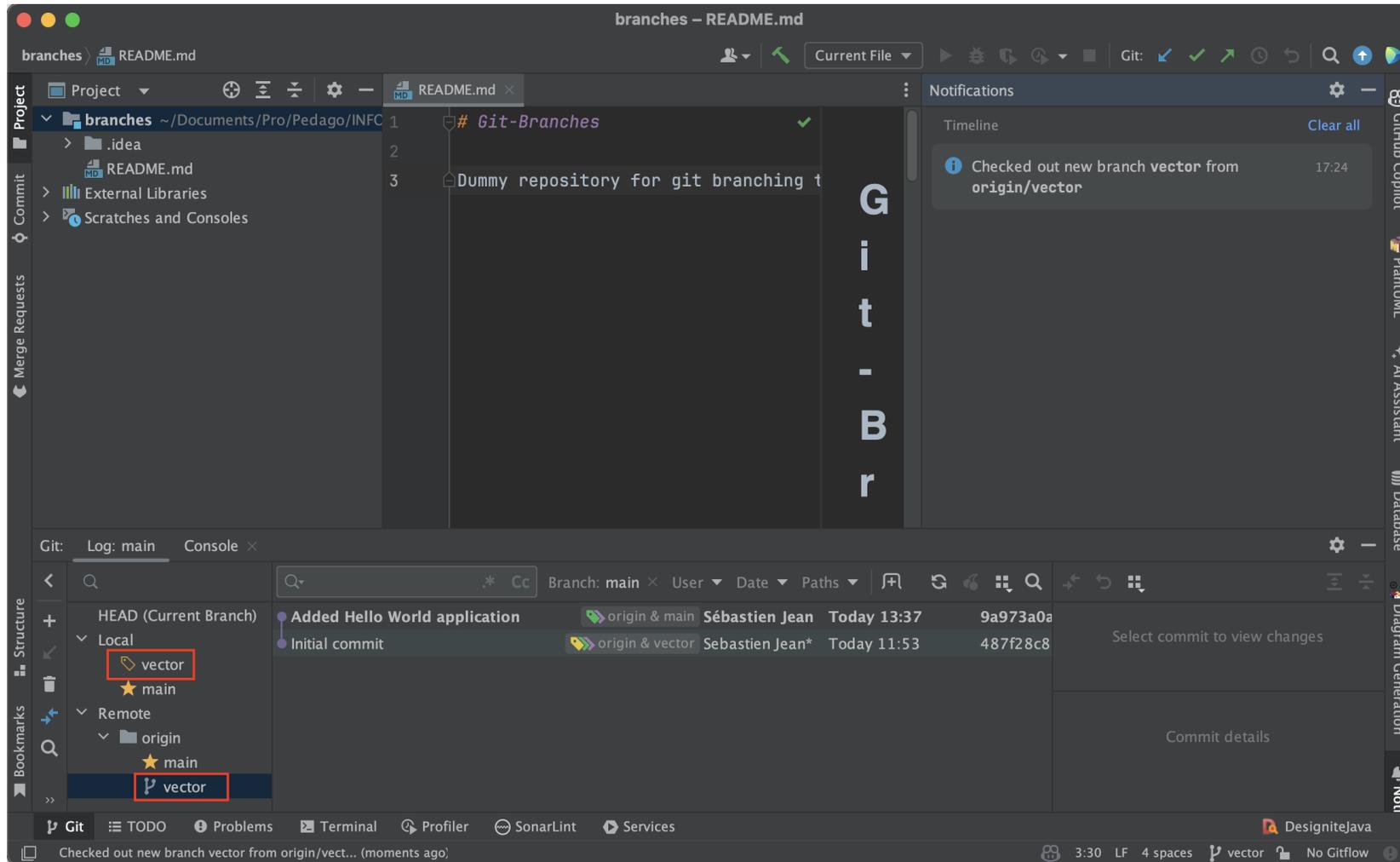


Cloner et reconstruire les branches, suite

- La création d'une branche locale à partir d'une branche distante est explicite



Cloner et reconstruire les branches, fin



Création d'une branche, sans publication, et commit

The screenshot shows the IntelliJ IDEA interface with a project named 'branches'. The 'src' directory contains a file named 'Point.java'. The code in the editor is as follows:

```

1 public class Point {
2
3     private final double x;
4     private final double y;
5
6     public Point(double x, double y) {...}
7
8
9
10
11     public double getX() { return this.x; }
12
13
14
15     public double getY() { return this.y; }
16
17
18 }

```

The Git tool window at the bottom shows the commit history. The most recent commit is highlighted with a red box:

Commit	Message	Author	Date	SHA-1
662be57c	Added Point class	Sébastien Jean	Moments ago	662be57c
97dfb9b9	Added Vector class	Sébastien Jean	31 minutes ago	97dfb9b9
9a973a0a	Added Hello World application	Sébastien Jean	Today 13:37	9a973a0a
487f28c8	Initial commit	Sébastien Jean*	Today 11:53	487f28c8

The commit details for the selected commit are shown below the table:

```

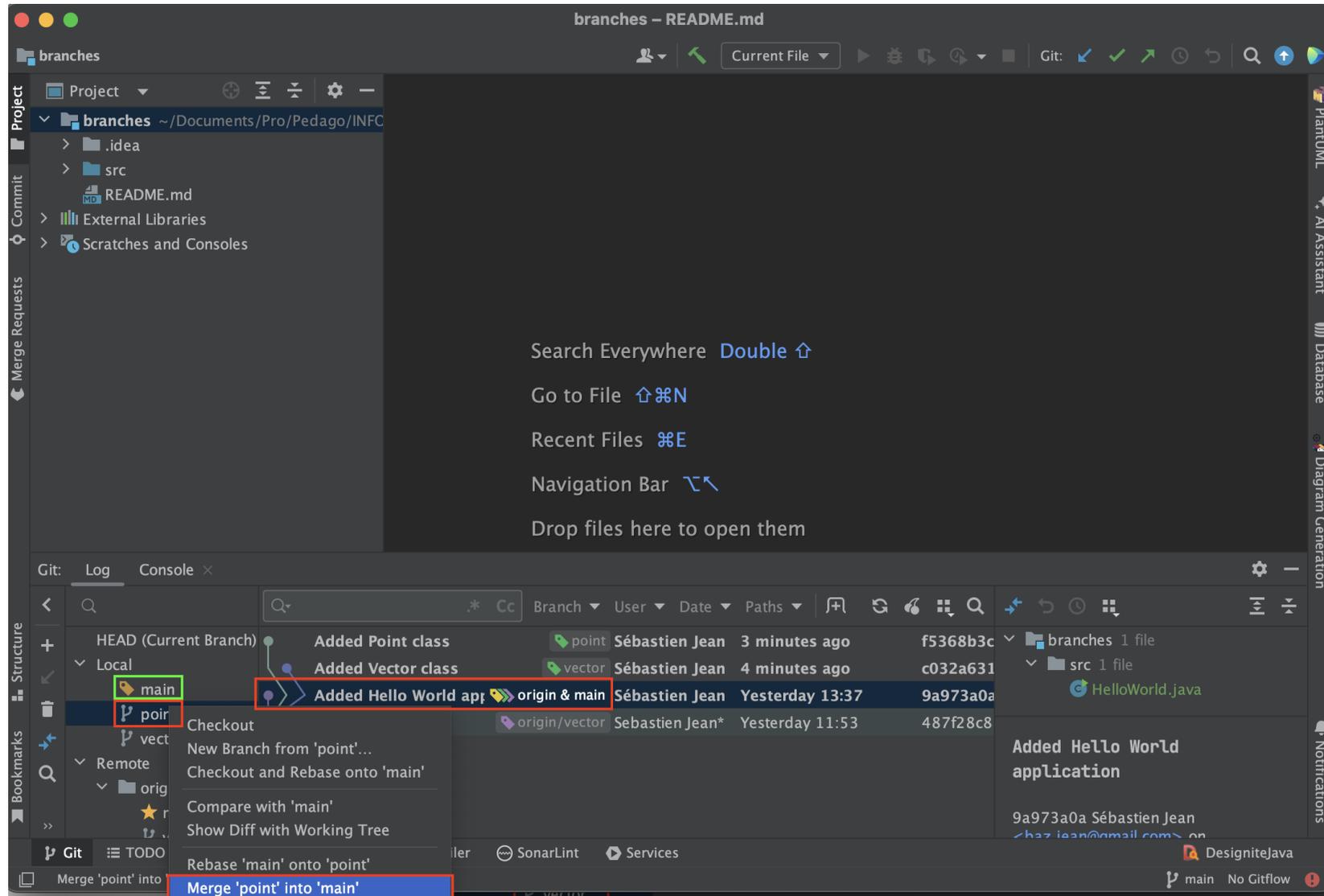
Added Point class
662be57d Sébastien Jean
<baz.jean@gmail.com> on 30/11/2023
at 16:24
HEAD point

```

The bottom status bar indicates: 1 file committed: Added Point cla... (moments ago). The current branch is 'point'.

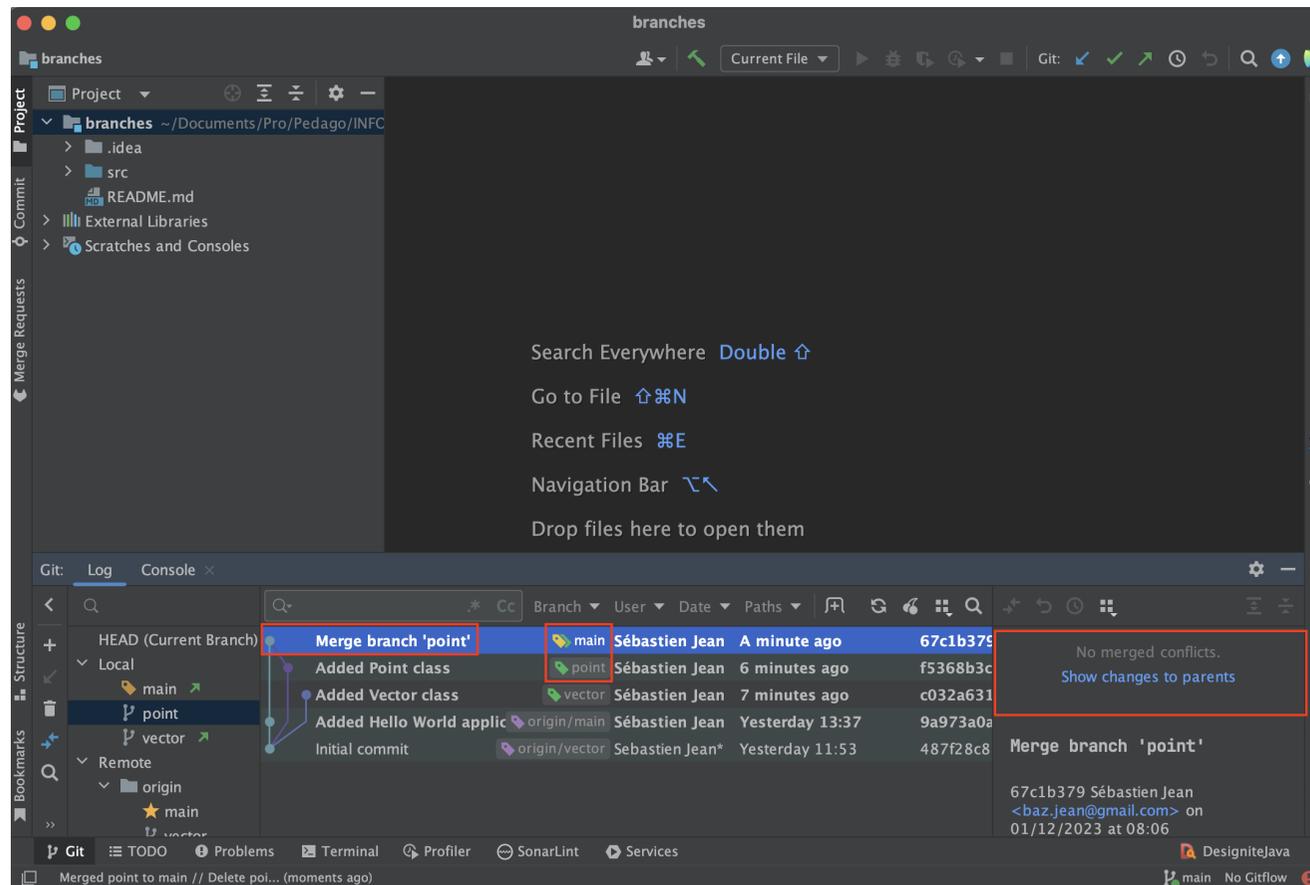
Fusionner 2 branches locales (*merge*)

- La fusion s'opère d'une **branche sélectionnée** vers la **branche courante**



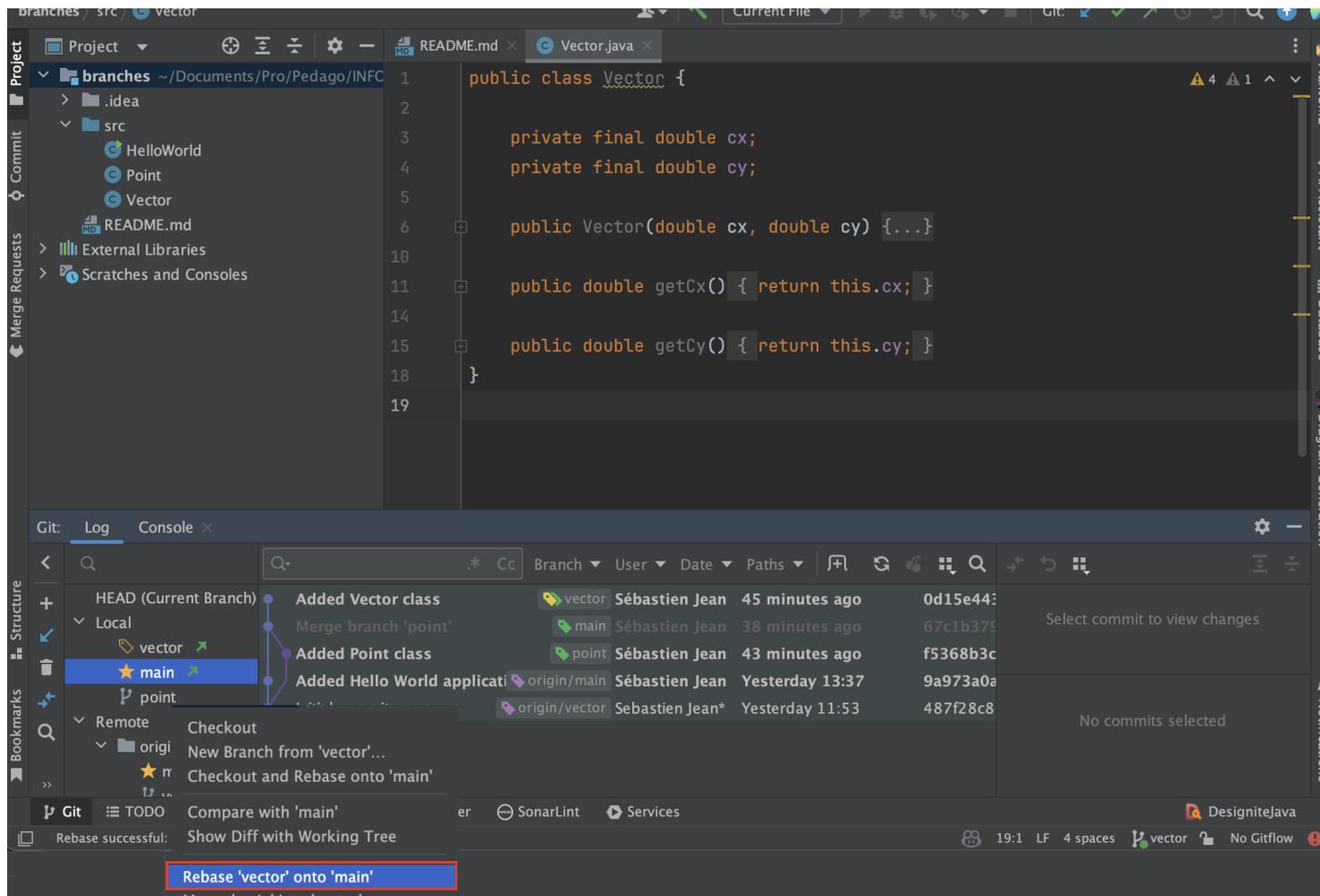
Fusionner 2 branches locales (*merge*), fin

- La **branche courante intègre** les commits de la branche sélectionnée, **pas l'inverse**
 - La fusion est marquée par un **commit (de fusion) ayant 2 parents**
 - Quand il n'y a **pas de conflit**, le commit n'ajoute pas de modification



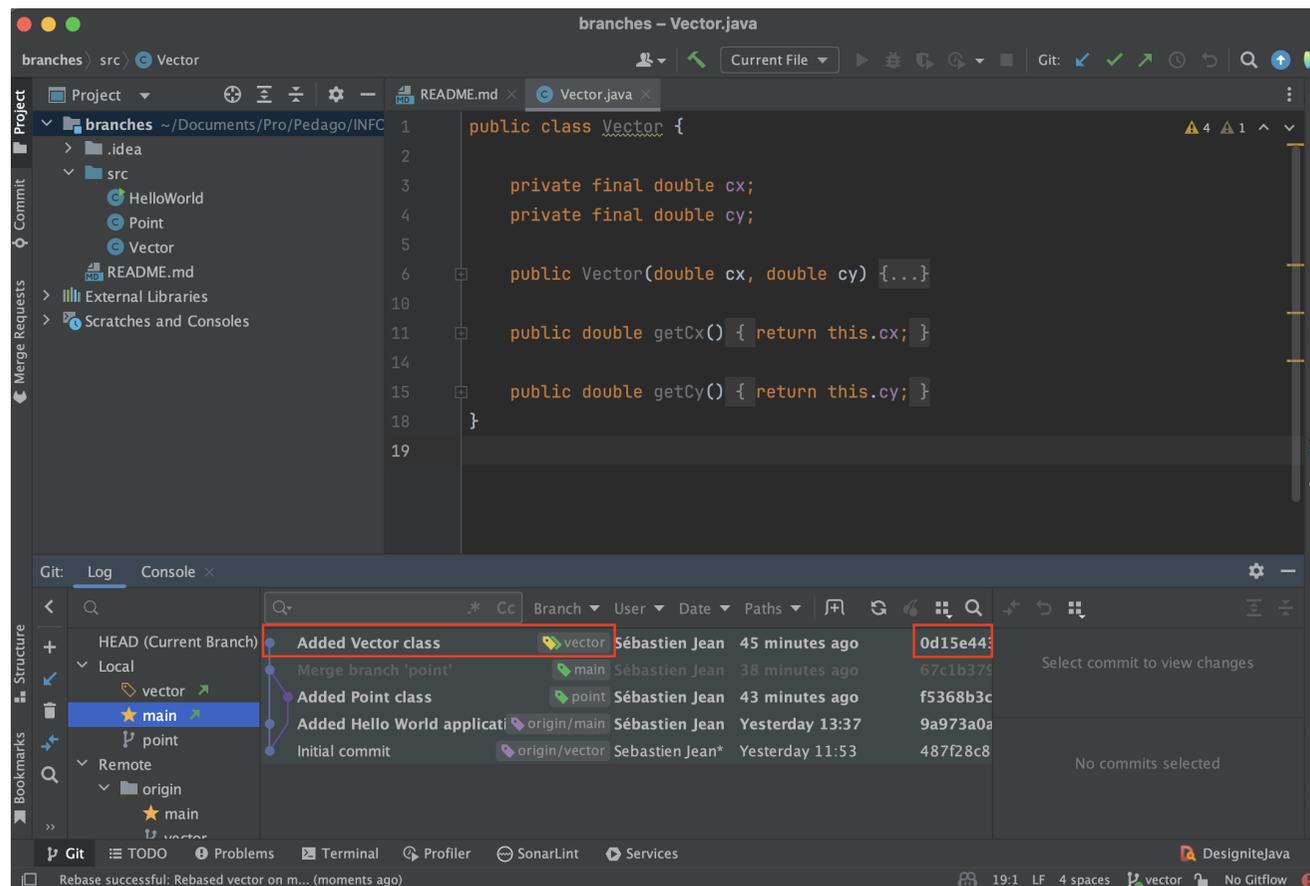
Rebaser une branche locale (*rebase*)

- Les commits de la **branche courante** sont **recalculés** pour se **replacer au dessus du dernier commit** de la **branche sélectionnée**



Rebaser une branche locale (*rebase*), fin

- La **branche courante intègre** les commits de la branche sélectionnée, **pas l'inverse**
 - Les commits sont bien recalculés (hash différent)
 - En cas de **conflit**, chaque **commit recalculé** inclura également les **modifications de résolution manuelle**



Fusionner 2 branches locales (*merge*) sans divergence

The screenshot shows the IntelliJ IDEA interface with the Git tool window open. The 'Log' tab displays the commit history:

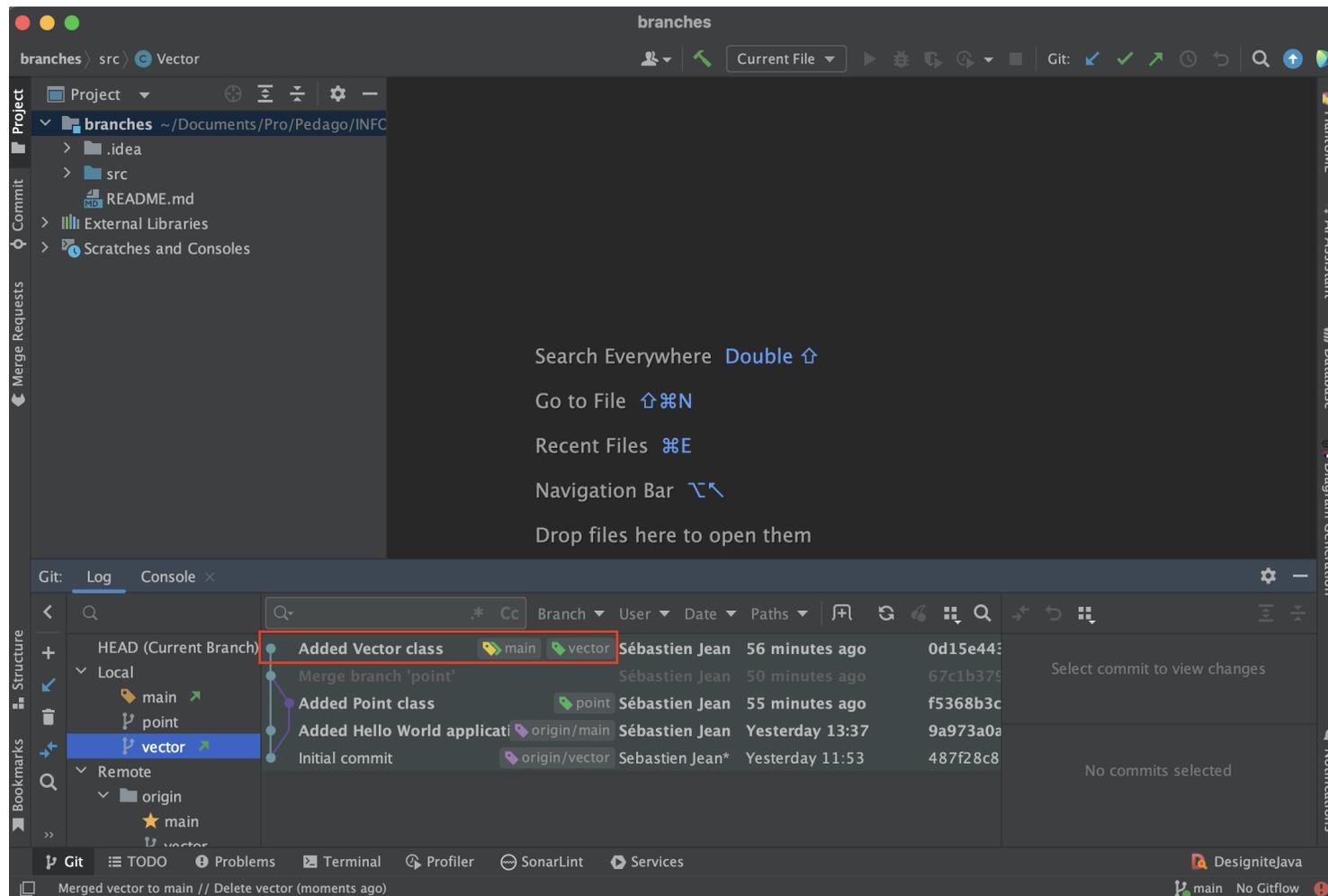
Commit	Message	Branch	User	Date	SHA-1
HEAD (Current Branch)	Added Vector class	vector	Sébastien Jean	54 minutes ago	0d15e443
Local	Merge branch 'point'	main	Sébastien Jean	48 minutes ago	67c1b379
Local	Added Point class	point	Sébastien Jean	53 minutes ago	f5368b3c
Remote	Added Hello World applicati...	origin/main	Sébastien Jean	Yesterday 13:37	9a973a0a
Remote		origin/vector	Sebastien Jean*	Yesterday 11:53	487f28c8

The context menu for the 'main' branch is open, showing the following options:

- Checkout
- New Branch from 'vector'...
- Checkout and Rebase onto 'main'
- Compare with 'main'
- Show Diff with Working Tree
- Rebase 'main' onto 'vector'
- Merge 'vector' into 'main'**

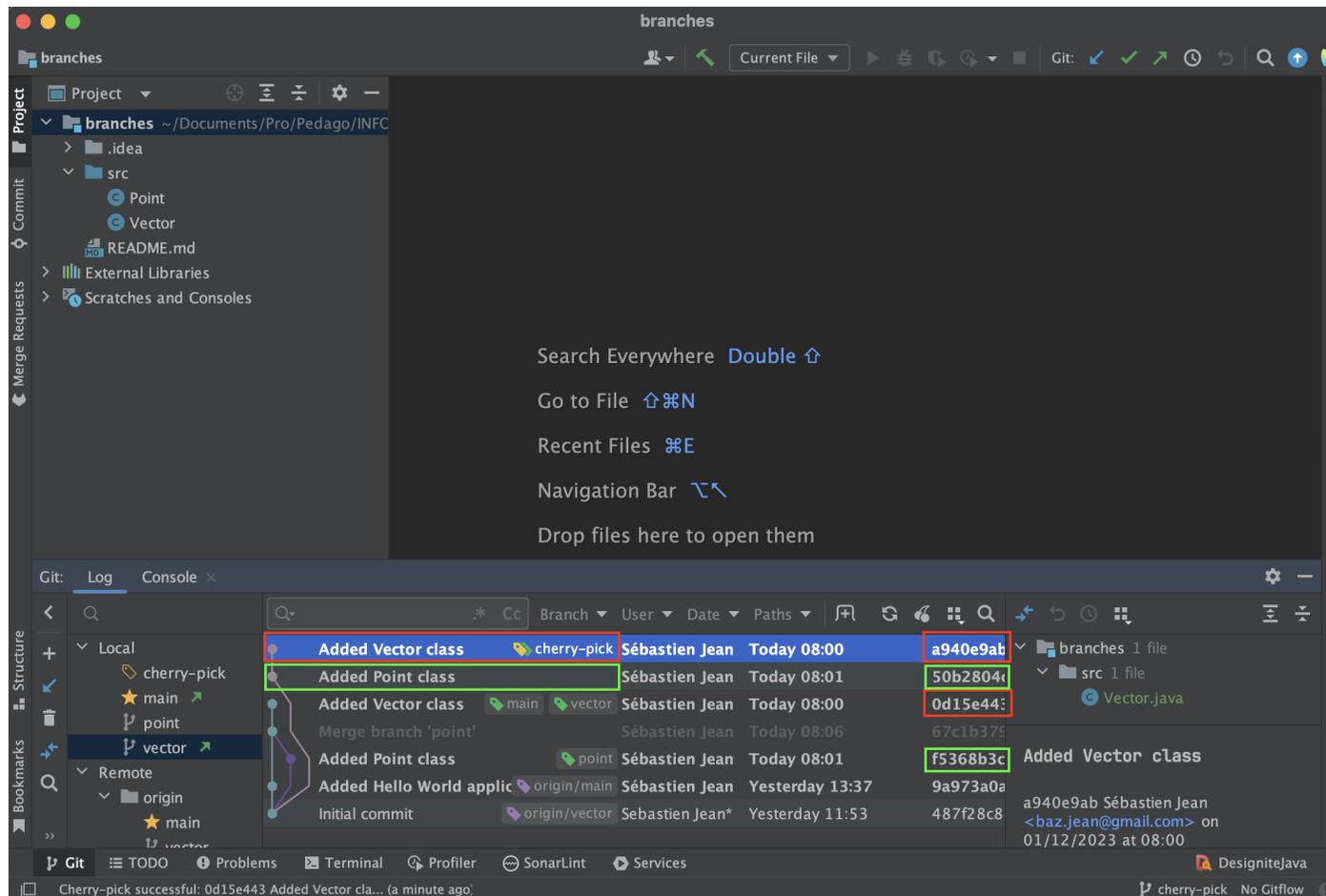
Fusionner 2 branches locales (*merge*) sans divergence, fin

- Le commit de fusion n'est **pas nécessaire**, seul le **pointeur de branche se déplace**



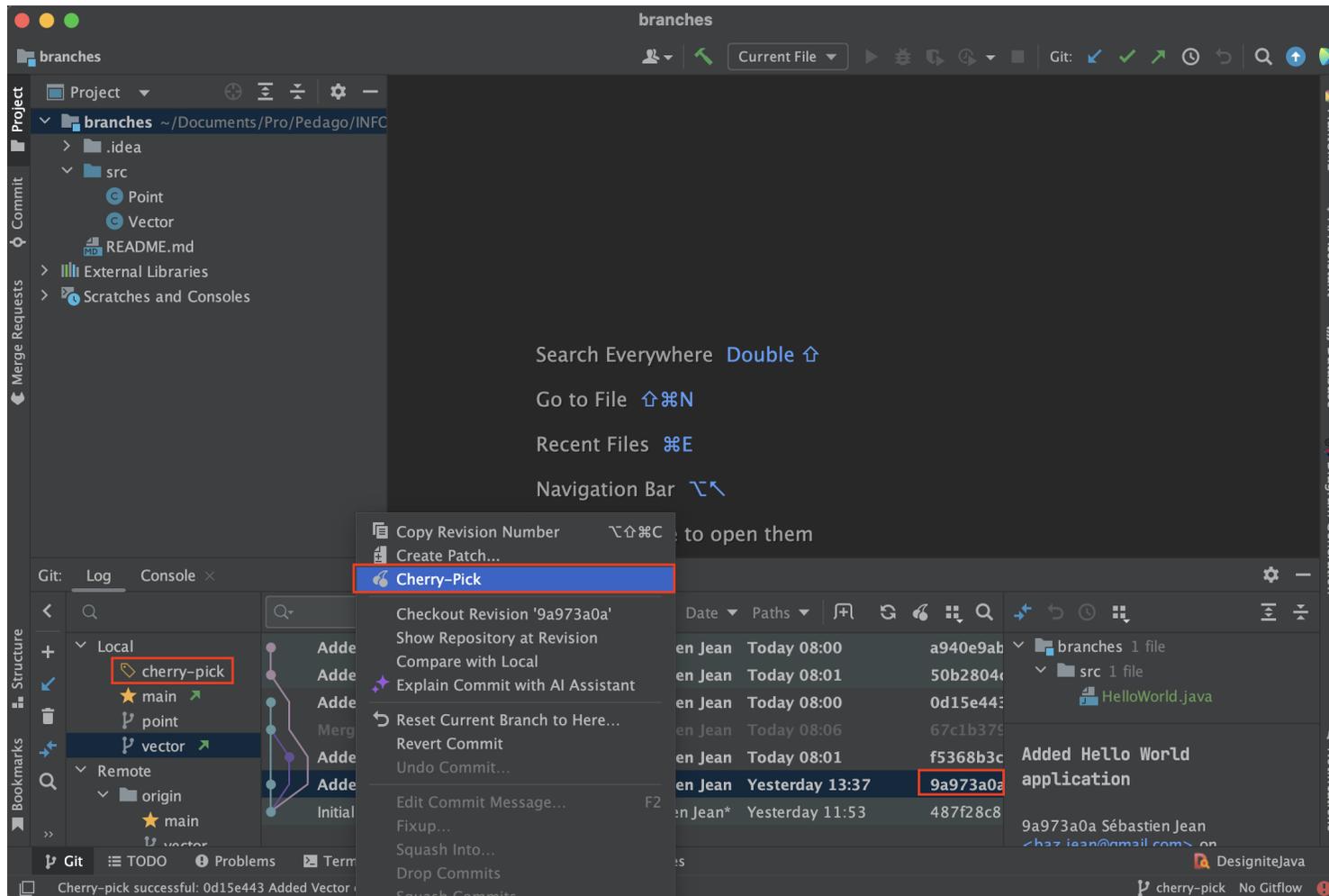
Picorer des commits (*cherry-pick*)

- Intégrer individuellement des commits d'autres branches
 - Ici, on a créé une branche `cherry-pick` à partir du **commit initial**
 - On y a **intégré deux commits** provenant des branches `point` et `vector`, recalculés



Picorer des commits (*cherry-pick*), suite

- On intègre un autre commit plus ancien ... ()



Picorer des commits (*cherry-pick*), fin

- (On intègre un autre commit plus ancien) ... **recalculé** également

The screenshot shows the IntelliJ IDEA interface during a cherry-pick operation. The 'Log' window is open, displaying a list of commits. The commit 'Added Hello World applic' with hash 9a973a0a is highlighted in blue. The 'Structure' window shows the project files, including 'HelloWorld.java' in the 'src' directory. The status bar at the bottom indicates 'Cherry-pick successful: 9a973a0a Added Hello World applicati... (a minute ago)'.

Commit Message	Author	Date	Hash
Added Hello World applic	Sébastien Jean	Yesterday 13:37	9b3cd024
Added Vector class	Sébastien Jean	Today 08:00	a940e9ab
Added Point class	Sébastien Jean	Today 08:01	50b2804
Added Vector class	Sébastien Jean	Today 08:00	0d15e44
Merge branch 'point'	Sébastien Jean	Today 08:06	67c1b37
Added Point class	Sébastien Jean	Today 08:01	f5368b3c
Added Hello World applic	Sébastien Jean	Yesterday 13:37	9a973a0a
Initial commit	Sébastien Jean*	Yesterday 11:53	487f28c8

Nouveau point de départ

The screenshot shows an IDE window titled "branches - Main.java". The main editor displays the following Java code:

```

1 public class Main {
2
3     public static void main(String[] args) {
4         System.out.println(new Point( x: 0, y: 0));
5     }
6 }
7

```

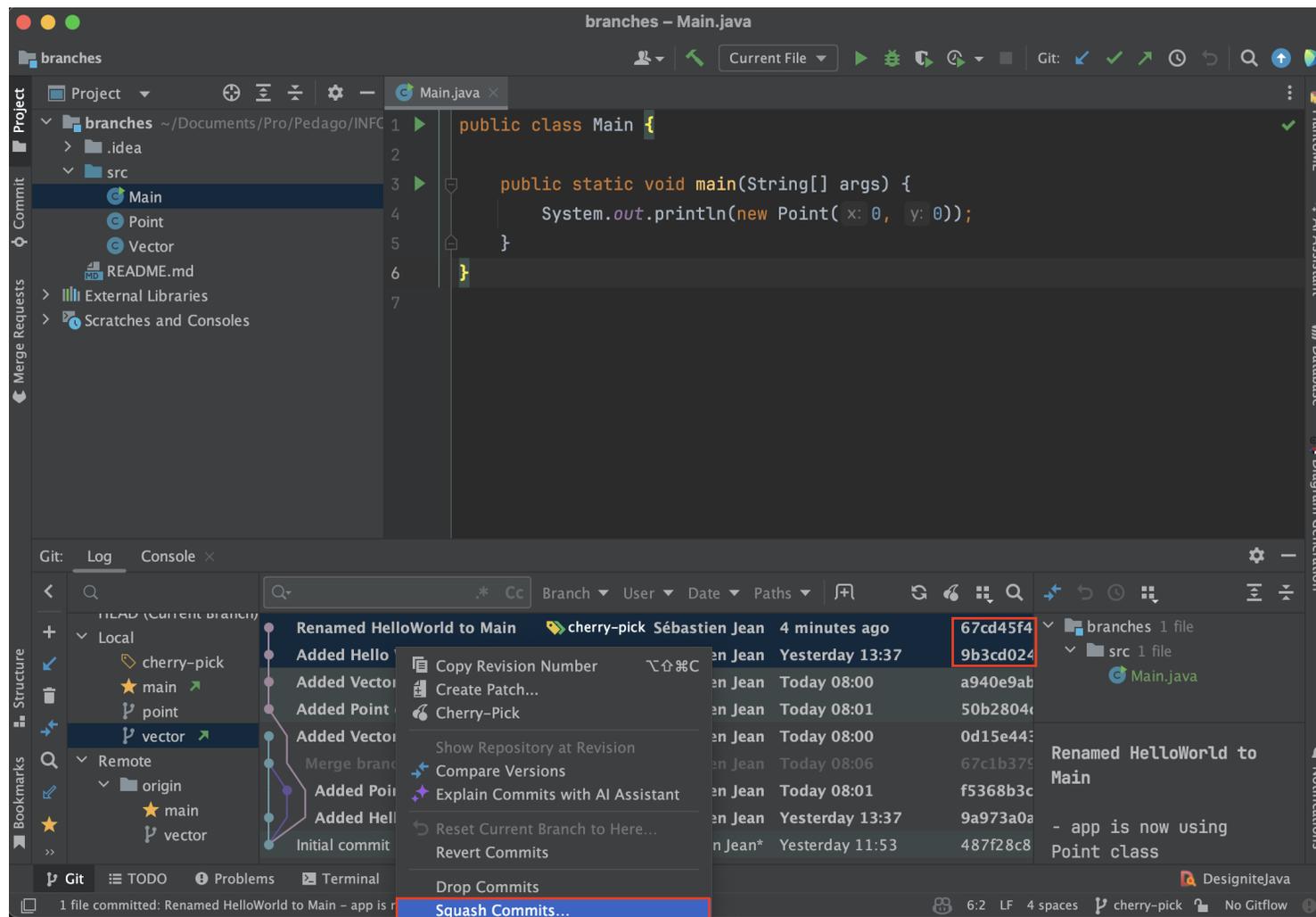
The left sidebar shows the project structure with "Main" selected under the "src" directory. The bottom panel shows the Git Log with the following entries:

Commit Hash	Message	User	Date	Hash
67cd45f4	Renamed HelloWorld to Main	Sébastien Jean	3 minutes ago	67cd45f4
9b3cd024	Added Hello World application	Sébastien Jean	Yesterday 13:37	9b3cd024
a940e9ab	Added Vector class	Sébastien Jean	Today 08:00	a940e9ab
50b2804c	Added Point class	Sébastien Jean	Today 08:01	50b2804c
0d15e443	Added Vector class	Sébastien Jean	Today 08:00	0d15e443
67c1b379	Merge branch 'point'	Sébastien Jean	Today 08:06	67c1b379
f5368b3c	Added Point class	Sébastien Jean	Today 08:01	f5368b3c
9a973a0a	Added Hello World application	Sébastien Jean	Yesterday 13:37	9a973a0a
487f28c8	Initial commit	Sebastien Jean*	Yesterday 11:53	487f28c8

The commit log also shows a "cherry-pick" icon next to the "Renamed HelloWorld to Main" commit. The bottom status bar indicates "1 file committed: Renamed HelloWorld to Main - app is now using Point cla... (2 minutes ago)".

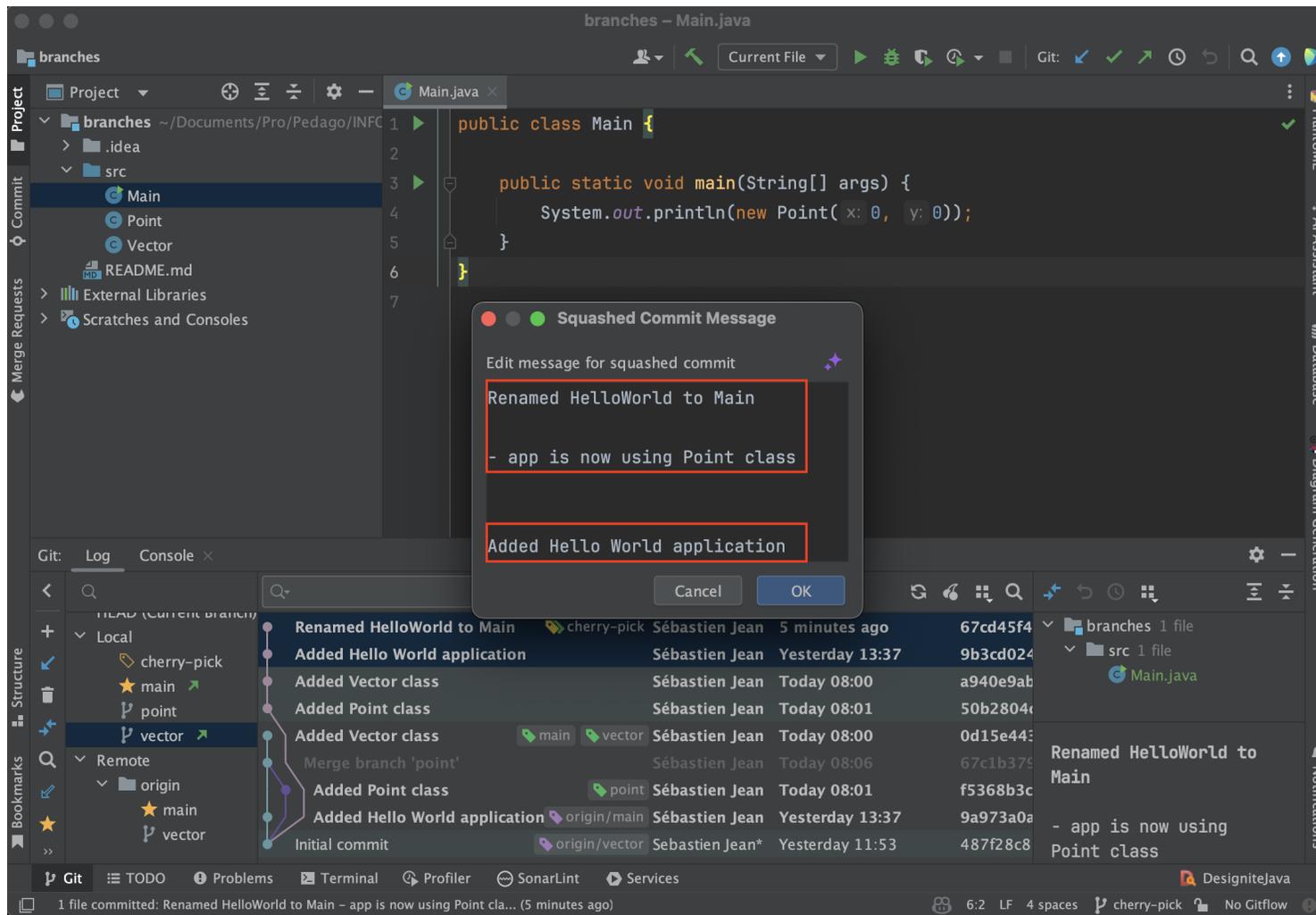
Regrouper des commits (*squash*)

- **Compacter localement 2 commits** de la **même branche**
- Attention : « interdit » si les commits ont déjà été poussés



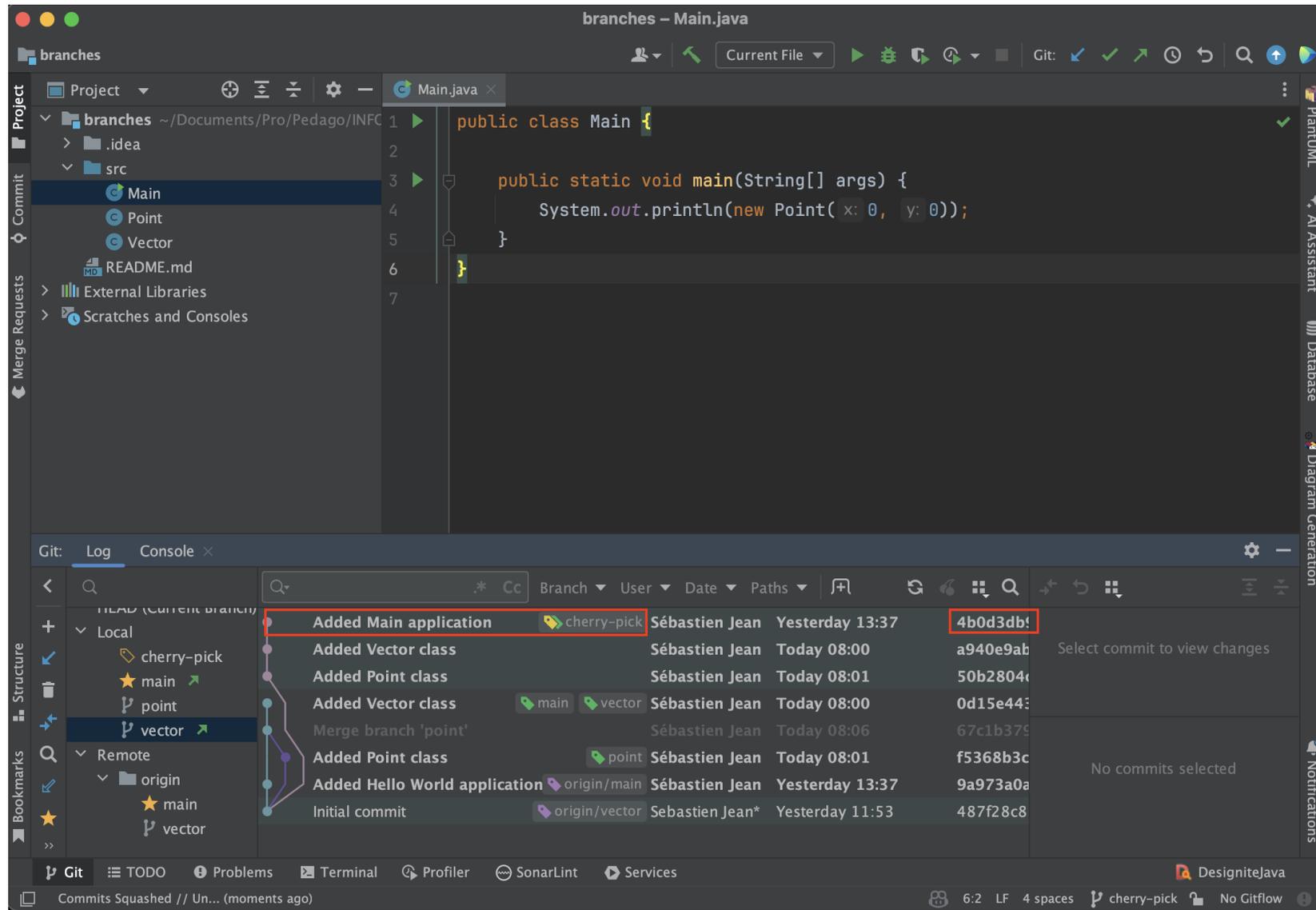
Regrouper des commits (*squash*), suite

- Le message peut être re-rédigé à partir des 2 messages initiaux



Regrouper des commits (*squash*), suite

- Le nouveau commit est recalculé

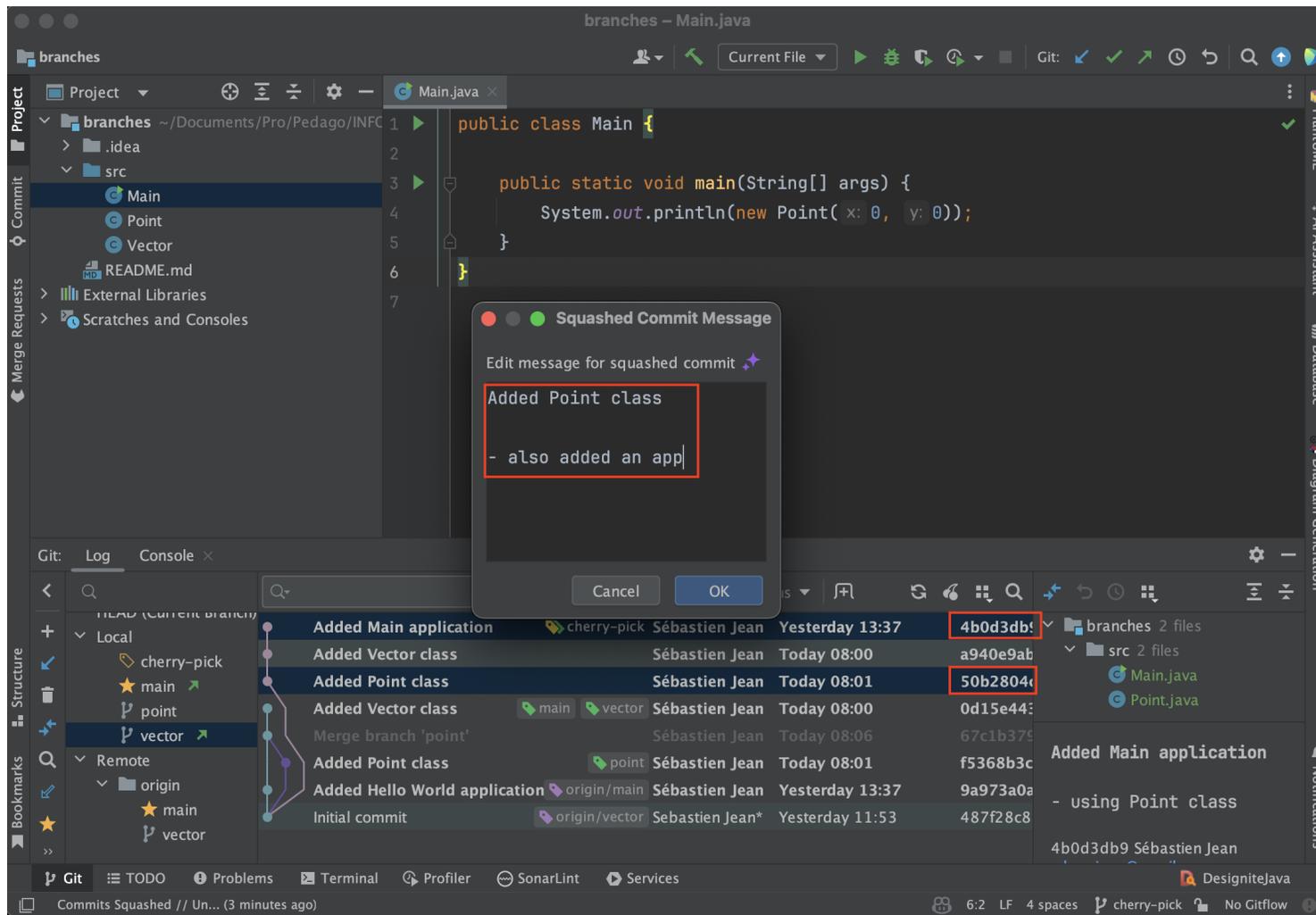


The screenshot shows the IntelliJ IDEA interface with a Git commit log at the bottom. The log displays a series of commits, with the top commit highlighted in red, indicating it is the selected commit. The highlighted commit is titled "Added Main application" and has a commit hash of 4b0d3db1. The log also shows other commits, including "Added Vector class", "Added Point class", and "Merge branch 'point'".

Commit Message	Author	Date	Commit Hash
Added Main application	Sébastien Jean	Yesterday 13:37	4b0d3db1
Added Vector class	Sébastien Jean	Today 08:00	a940e9ab
Added Point class	Sébastien Jean	Today 08:01	50b2804c
Added Vector class	Sébastien Jean	Today 08:00	0d15e443
Merge branch 'point'	Sébastien Jean	Today 08:06	67c1b379
Added Point class	Sébastien Jean	Today 08:01	f5368b3c
Added Hello World application	Sébastien Jean	Yesterday 13:37	9a973a0a
Initial commit	Sebastien Jean*	Yesterday 11:53	487f28c8

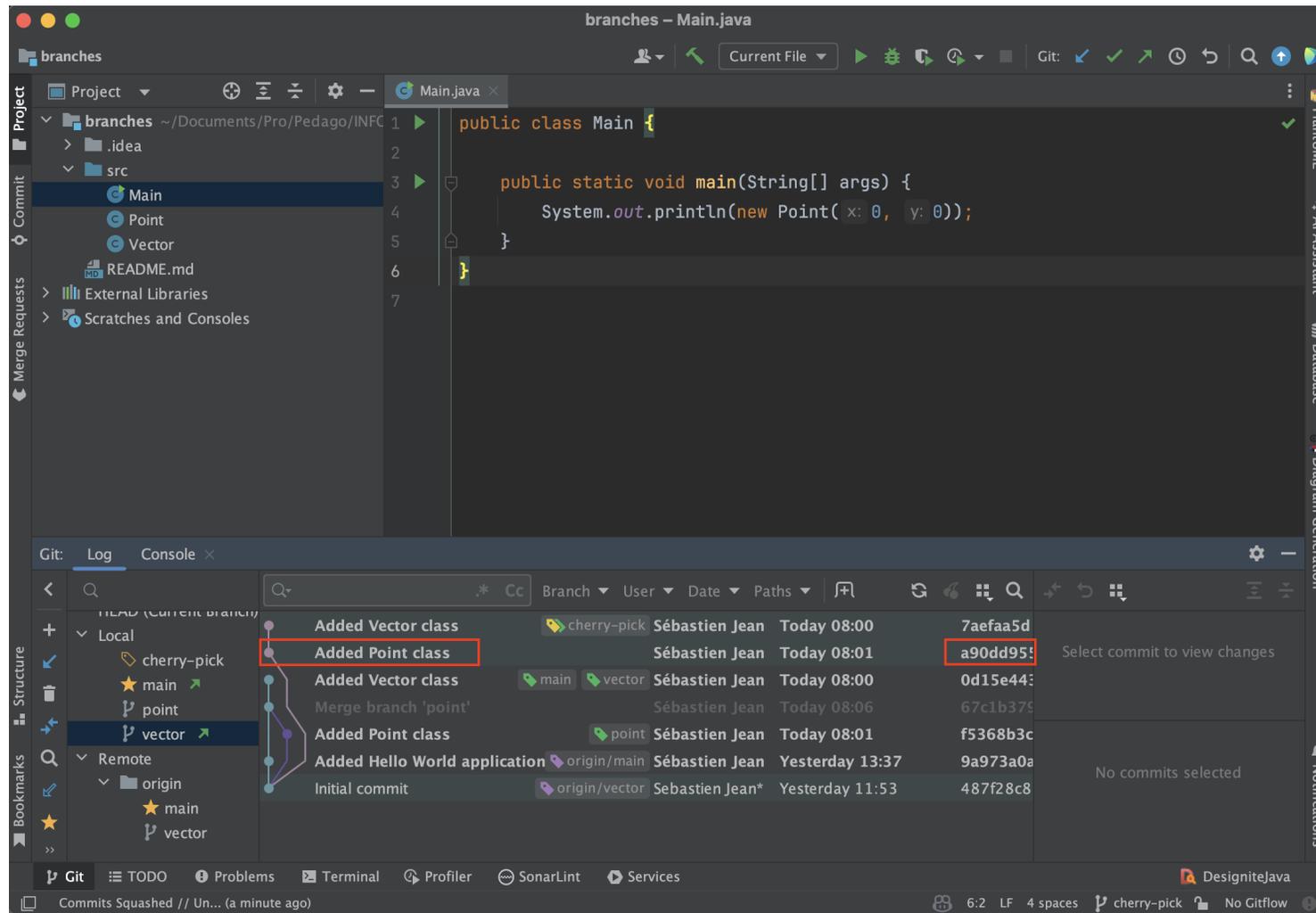
Regrouper des commits (*squash*), suite

- Les 2 commits ne sont pas forcément successifs



Regrouper des commits (*squash*), fin

- Le nouveau commit est recalculé
- Attention : il peut y avoir une **résolution de conflit à opérer**



Fin !

