

Generalitat de Catalunya Departament d'Educació Institut Caparrella	GS Mòdul 5: Entorns de desenvolupament	2023-24
	UF2: optimització de programari	

Activitat A4.2: Git. Branques

Descripció

- Crear, modificar, fusionar branques

Presentació de l'activitat / pràctica

- El nom del document serà: Ax_x_<el teu nom>.pdf

Qualificació de l'activitat / pràctica : **Feta** / No Feta

1. Descarrega el projecte del GitHub, utilitzant la comanda: git clone

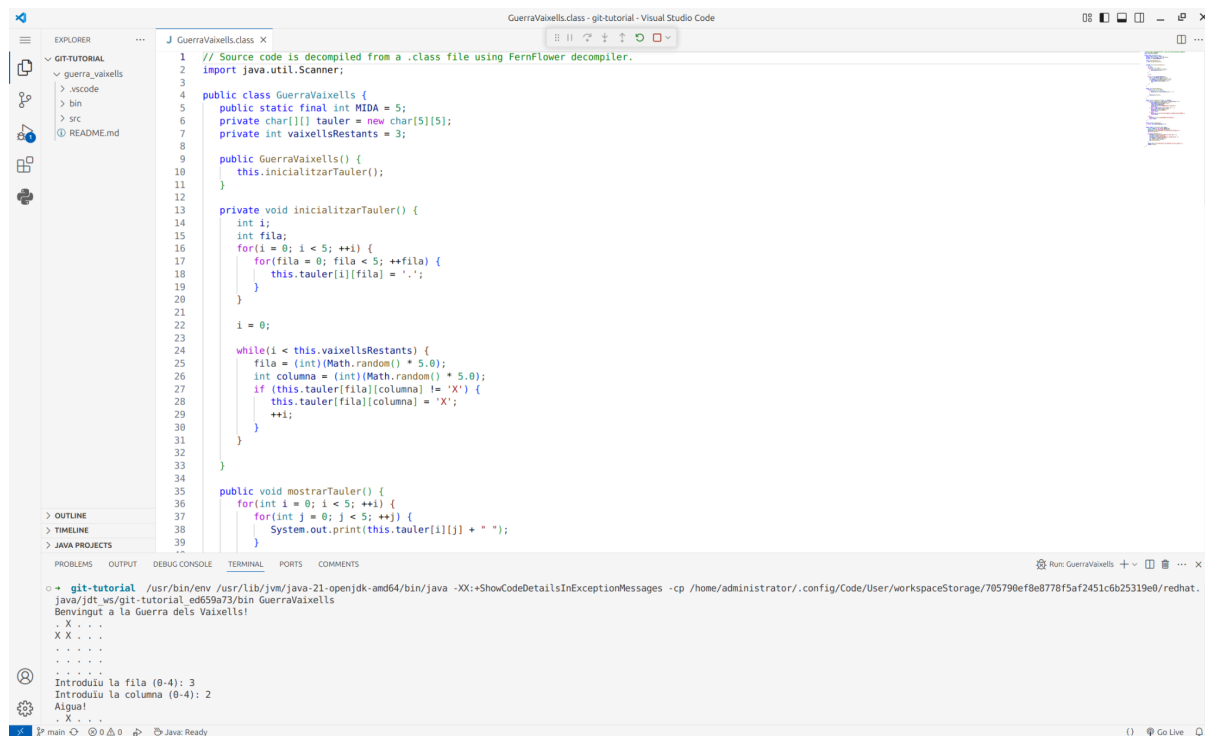
El projecte es troba a: https://github.com/jraichs01/guerra_vaixells

```

administrator@administrator-IdeaPad-5-Pro-14ACN6:~/Documents/git-tutorial
→ git-tutorial git clone https://github.com/jraichs01/guerra_vaixells.git
Cloning into 'guerra_vaixells'...
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 9 (delta 0), reused 9 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (9/9), done.
→ git-tutorial

```

2. Obre el projecte en Visual Studio Code i comprova que funciona correctament. Executa'l.



The screenshot shows the Visual Studio Code editor with the file `GuerraVaixells.class` open. The code is a Java class that simulates a battle between ships. It includes a static final `MIDA` of 5, a `tauler` (board) of size 5x5, and a `vaixellsRestants` (ships remaining) count of 3. The `inicialitzarTauler` method initializes the board with random ship positions. The `mostrarTauler` method prints the board state. The terminal output shows the program running and displaying the board state.

```
1 // Source code is decompiled from a .class file using FernFlow decompiler.
2 import java.util.Scanner;
3
4 public class GuerraVaixells {
5     public static final int MIDA = 5;
6     private char[][] tauler = new char[5][5];
7     private int vaixellsRestants = 3;
8
9     public GuerraVaixells() {
10         this.inicialitzarTauler();
11     }
12
13     private void inicialitzarTauler() {
14         int i;
15         int fila;
16         for(i = 0; i < 5; ++i) {
17             for(fila = 0; fila < 5; ++fila) {
18                 this.tauler[i][fila] = '.';
19             }
20         }
21
22         i = 0;
23
24         while(i < this.vaixellsRestants) {
25             fila = (int)(Math.random() * 5.0);
26             int columna = (int)(Math.random() * 5.0);
27             if (this.tauler[fila][columna] != 'X') {
28                 this.tauler[fila][columna] = 'X';
29                 ++i;
30             }
31         }
32     }
33
34     public void mostrarTauler() {
35         for(int i = 0; i < 5; ++i) {
36             for(int j = 0; j < 5; ++j) {
37                 System.out.print(this.tauler[i][j] + " ");
38             }
39         }
40     }
41 }
```

Terminal output:

```
Run GuerraVaixells
java/jdt ws/git-tutorial_ed659a73/bin GuerraVaixells
Benvingut a la Guerra dels Vaixells!
X X . . .
. . . . .
. . . . .
. . . . .
. . . . .
Introduïu la fila (0-4): 3
Introduïu la columna (0-4): 2
Aigua!
```

3. Des de la línia d'ordres, comprova l'estat del repositori local. Comprova-ho també des de l'IDE.
 - a. Quina és la branca principal.
 - i. És la branca main

The screenshot shows the Visual Studio Code editor with a Java class file named `GuerraVaixells.class` open. The code is a Java program for a Battleship game. A `git branch` window is open in the foreground, showing the following code:

```
int fila;
for(i = 0; i < 5; ++i) {
    for(fila = 0; fila < 5; ++fila) {
        this.tauler[i][fila] = '.';
    }
}

* main = 0;
(END)

while(i < this.vaixellsRestants) {
    fila = (int)(Math.random() * 5.0);
    int columna = (int)(Math.random() * 5.0);
    if (this.tauler[fila][columna] != 'X') {
        this.tauler[fila][columna] = 'X';
        ++i;
    }
}

public void mostrarTauler() {
    for(int i = 0; i < 5; ++i) {
        for(int j = 0; j < 5; ++j) {
            System.out.print(this.tauler[i][j] + " ");
        }
    }
}
```

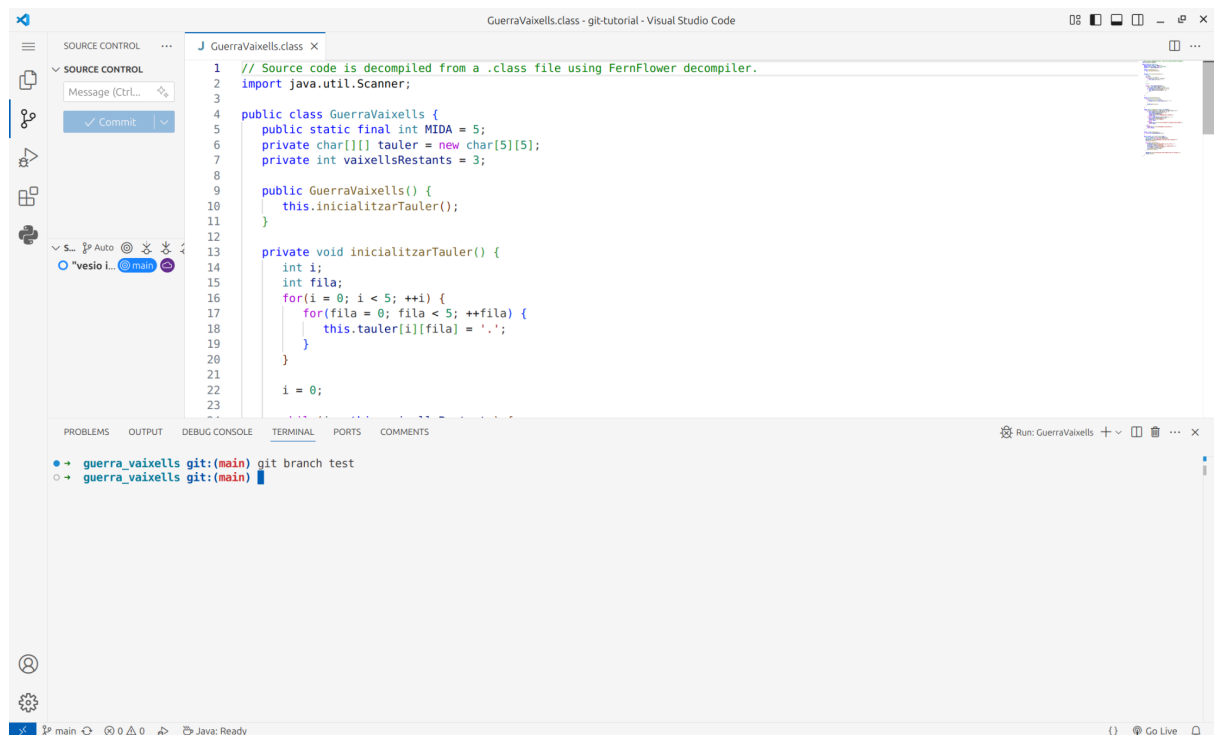
b. Quin és el codi del commit ?

The screenshot shows a `git log` window with the following output:

```
commit 1ea3507edcd3875d2ace3c9b2ba24449127ff414 (HEAD -> main, origin/main, origin/HEAD)
Author: jraichs01 <jraichs@inscaparrella.cat>
Date: Mon Feb 17 17:23:55 2025 +0100

    "vesio inicial"
(END)
```

4. Hem de fer modificar el taulell per encabir-hi més vaixells. Per fer-ho hem decidit no modificar el codi principal i fer-ho en una branca pròpia. Per fer-ho:
- Obrirem el projecte amb Code (si no el tenim obert)
 - Obrirem el terminal dins de Code **Git Bash**.
 - Crea una branca pròpia amb el teu nom. (git branch <nom>)



The screenshot shows the Visual Studio Code interface. The main editor displays the file `GuerraVaixells.class` with the following Java code:

```
1 // Source code is decompiled from a .class file using FernFlower decompiler.
2 import java.util.Scanner;
3
4 public class GuerraVaixells {
5     public static final int MIDA = 5;
6     private char[][] tauler = new char[5][5];
7     private int vaixellsRestants = 3;
8
9     public GuerraVaixells() {
10         this.inicialitzarTauler();
11     }
12
13     private void inicialitzarTauler() {
14         int i;
15         int fila;
16         for(i = 0; i < 5; ++i) {
17             for(fila = 0; fila < 5; ++fila) {
18                 this.tauler[i][fila] = '.';
19             }
20         }
21         i = 0;
22     }
23 }
```

The left sidebar shows the SOURCE CONTROL view with a commit message input field and a 'Commit' button. The bottom panel shows the TERMINAL view with the following output:

```
• → guerra_vaixells git:(main) git branch test
○ → guerra_vaixells git:(main) |
```

- Posiciona't a la branca. (git switch <nom>)

```
1 // Source code is decompiled from a .class file using FernFlow decompiler.
2 import java.util.Scanner;
3
4 public class GuerraVaixells {
5     public static final int MIDA = 5;
6     private char[][] tauler = new char[5][5];
7     private int vaixellsRestants = 3;
8
9     public GuerraVaixells() {
10         this.inicialitzarTauler();
11     }
12
13     private void inicialitzarTauler() {
14         int i;
15         int fila;
16         for(i = 0; i < 5; ++i) {
17             for(fila = 0; fila < 5; ++fila) {
18                 this.tauler[i][fila] = '.';
19             }
20         }
21         i = 0;
22     }
23 }
```

guerra_vaixells git:(main) git branch test
guerra_vaixells git:(main) git switch test
Switched to branch 'test'
guerra_vaixells git:(test) |

ii. Amplia el taulell a 10x10, pots modificar altres coses.

```
3 public class GuerraVaixells {
4     public static final int MIDA = 10; // Mida del tauler (5x5)
5     private char[][] tauler; // Matriu per al tauler de joc
6     private int vaixellsRestants; // Nombre de vaixells a enfonsar
7
8     public GuerraVaixells() {
9         // Inicialitzem el tauler amb aigua ('.') i després col·loquem els vaixells ('X')
10        private void inicialitzarTauler() {
11            // Mostra el tauler de joc (amb les posicions de les aigua i els vaixells no descoberts)
12            public void mostrarTauler() {
13                // Realitza un disparo a les coordenades indicades
14                public boolean disparar(int fila, int columna) {
15                // Comprova si el jugador ha guanyat
16                public boolean haGuanyat() {
17
18            Run | Debug
19            public static void main(String[] args) {
20                Scanner scanner = new Scanner(System.in);
21                GuerraVaixells joc = new GuerraVaixells();
22
23                System.out.println("Benvingut a la Guerra dels Vaixells!");
24                joc.mostrarTauler();
25
26                while (!joc.haGuanyat()) {
27                    System.out.print("Introduïu la fila (0-9): ");
28                    int fila = scanner.nextInt();
29                    System.out.print("Introduïu la columna (0-9): ");
30                    int columna = scanner.nextInt();
31                }
32            }
33 }
```

guerra_vaixells git:(test) git log
guerra_vaixells git:(test) x git status
On branch test
Changes not staged for commit:
 (use "git add <file>..." to update what will be committed)
 (use "git restore <file>..." to discard changes in working directory)
 modified: src/GuerraVaixells.java
no changes added to commit (use "git add" and/or "git commit -a")

iii. Fes un commit. (git commit -a -m "modificat per <nom>")

The screenshot shows the Visual Studio Code editor with the file `GuerraVaixells.java` open. The code defines a class `GuerraVaixells` with a static final `MIDA` of 10, a `tauler` array, and a `vaixellsRestants` variable. It includes methods for initializing the board, displaying it, and a `disparar` method. The `main` method uses a `Scanner` to get user input for row and column coordinates. A terminal window is open, showing the execution of `git commit -a -m "modificat per navdeep singh"` and `git show test`. The output of `git show test` shows the changes made in the `test` branch, including the `disparar` method and the `main` method's `while` loop.

d. Veuràs que tens 2 commits (git log), fixa't on apunta el HEAD

The screenshot shows the Visual Studio Code editor with the file `GuerraVaixells.java` open. The code is the same as in the previous screenshot. A terminal window is open, showing the output of `git log`. The output shows two commits: one by Navdeep Singh (commit 5432c3a2f903250f2bc2c236252052de206d082) and one by jraichs01 (commit 1ea3507edcd3875d2ace3c9b2ba24449127ff414). The `HEAD` pointer is shown pointing to the commit by Navdeep Singh. The terminal also shows the output of `git show test`, which is the same as in the previous screenshot.

5. Si consideres que la teva modificació de codi està bé. Fes un merge a la branca principal.

git branch

git switch main

git merge <nom>

The screenshot shows the Visual Studio Code interface with a Java file named 'GuerraVaixells.java' open. The file contains a Java class 'GuerraVaixells' with methods for initializing a game board, displaying it, and handling player moves. A terminal window is open in the bottom right, showing the following commands and output:

```
administrator@administrator-IdeaPad-S-...  
+ guerra_vaixells git:(test) git branch  
+ guerra_vaixells git:(test) git switch main  
Switched to branch 'main'  
Your branch is up to date with 'origin/main'.  
- guerra_vaixells git:(main) git merge test  
Updating 1ea3507..5432c3a  
Fast-forward  
src/GuerraVaixells.java | 2 +  
1 file changed, 1 insertion(+), 1 deletion(-)
```

Les modificacions s'han inclòs a la branca principal.

6. Comprova que els 2 comits el main i el <nom> són iguals, ja que el codi serà el mateix. (git show main ...)

The screenshot shows the Visual Studio Code editor with the file `GuerraVaixells.java` open. The code is a Java program for a Battleship game. The `main` method creates a `Scanner` object, initializes the game board, and enters a loop where the user can play. A `git diff` window is open in the foreground, showing the changes between the current branch and the `main` branch. The diff shows that the `main` branch has been updated with the changes from the `test` branch.

7. Elimina la teva branca creada, ja que consideres que tot és correcte.

git branch -d

The screenshot shows a terminal window with the following commands and output:

```
administrator@administrator-IdeaPad-5-Pro-14ACN6:~/Documents/git-tu...
→ guerra_vaixells git:(main) git branch -d test
Deleted branch test (was 5432c3a).
→ guerra_vaixells git:(main)
```