Guadalupe Paulina López Cuevas
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INDIVIDUAL PROJECT PROPOSAL

Project description

In this project I will do a program based on OOP that will be able to interact with a user and let her/him to play a game call sudoku, where the program will contain a graphic interphase and the objects to execute the certain methods to get the values of numbers that the user wants to write in each cell.

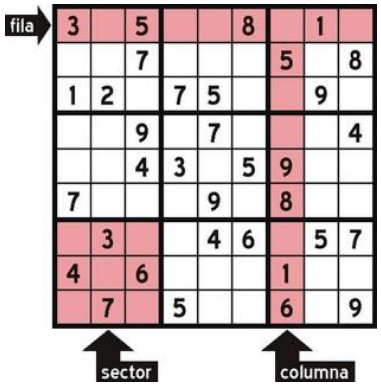
- ## Introduction

What is a Sudoku?

A sudoku is a game to learn logic-basic number placement puzzle. Sudoku is the short name for *Su-ji wa dokushin ni kagiru* which means "The numbers must be single".

- ## Description of the game (what does the game do? how does the user interacts with the game? etc)

The task is that the user must place the numbers from 1 to 9 into the empty cells in such a way that in every column, row and 3x3 region each number appears only once.



- ## Relevants characteristics of your game

A sudoku hast at least 17 given numbers but normally there are 22 to 30 numbers given at the beginning of the game.

- ## Features

3 Levels
Different sudokus
A menu
A menu level
Check if the answer are right or wrong
Restart game

- ## Mockups

The sudoku consists of 81 cells which are divided in 9 columns, rows and regions.

* Start identifying mandatory features vs optional features.

- ## Is the board generated randomly? Or it will have fixed locations?

It will have two different boards to have different difficulties depending on the boar the user chooses.

- ## Having a timer. Is this trivial? Or not?

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It will not have a timer because not everybody is able to solve a sudoku in the same amount of time, some people need hours and some not.

The main idea of the project that I will going to do is to create a sudoku that depending on the board that the user chooses it will have a higher lever of difficulty such as less numbers already written on the diagram, to make it more challenging. The user will have just 3 chances for help, that means that in each chance the user use in the board it will appear a number to help him/her to solve the sudoku. Also the game will have a option of restart the game if he/she doesn't know how to solve it and the chances are already used. And it also will have the hability of save the game until the user what to start a new one.

NOTE: saving the game and re-open it will be a **+2** for the final grade of the course.

Weigel, M. (2019). What is Sudoku?. Retrieved from: http://www.sudoku-space.com/sudoku.php

INDIVIDUAL FINAL PROJECT FINISHED

SUDOKUS IMPLEMENTED ON THE GAME, DEPENDING THE LEVEL

Level 1

8	7	6	4	9	1	2	5	3
4	1	3	5	2	8	9	7	6
5	9	2	3	6	7	1	8	4
7	2	4	6	3	5	8	1	9
9	5	8	7	1	4	6	3	2
6	3	1	2	8	9	5	4	7
3	4	9	8	5	2	7	6	1
1	8	7	9	4	6	3	2	5
2	6	5	1	7	3	4	9	8

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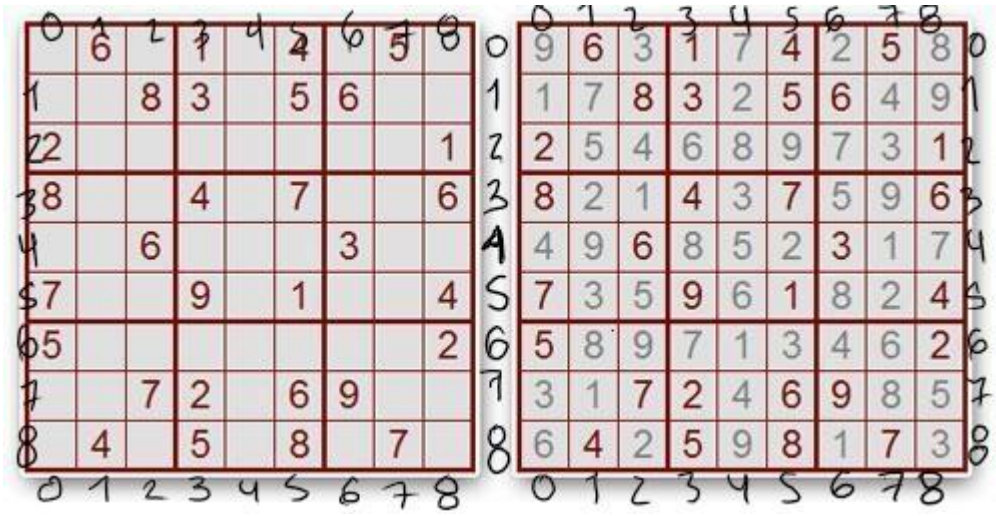
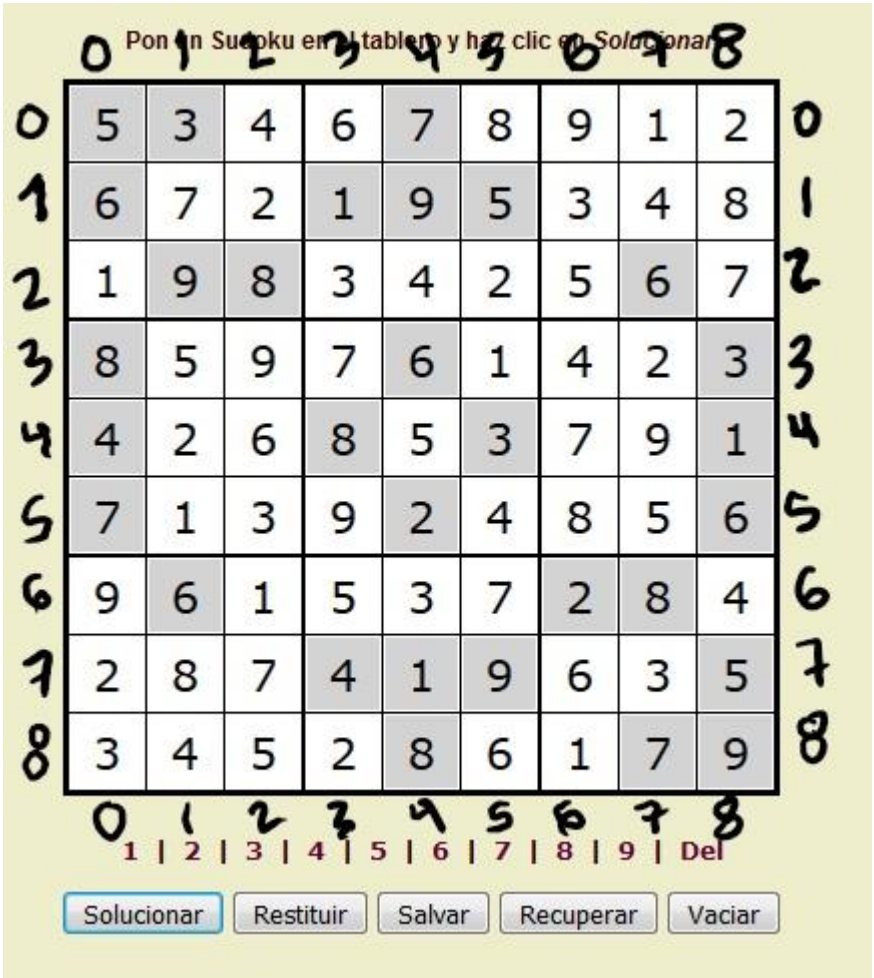
Level 2



	0	1	2	3	4	5	6	7	8
0		6		1		4		5	
1			8	3		5	6		
2									1
3				4		7			6
4			6				3		
5				9		1			4
6									2
7			7	2		6	9		
8		4		5		8		7	

	0	1	2	3	4	5	6	7	8
0	9	6	3	1	7	4	2	5	8
1	1	7	8	3	2	5	6	4	9
2	2	5	4	6	8	9	7	3	1
3	8	2	1	4	3	7	5	9	6
4	4	9	6	8	5	2	3	1	7
5	7	3	5	9	6	1	8	2	4
6	5	8	9	7	1	3	4	6	2
7	3	1	7	2	4	6	9	8	5
8	6	4	2	5	9	8	1	7	3

Level 3



	0	1	2	3	4	5	6	7	8
0	5	3	4	6	7	8	9	1	2
1	6	7	2	1	9	5	3	4	8
2	1	9	8	3	4	2	5	6	7
3	8	5	9	7	6	1	4	2	3
4	4	2	6	8	5	3	7	9	1
5	7	1	3	9	2	4	8	5	6
6	9	6	1	5	3	7	2	8	4
7	2	8	7	4	1	9	6	3	5
8	3	4	5	2	8	6	1	7	9

TIME LOG OF THE INDIVIDUAL FINAL PROJECT

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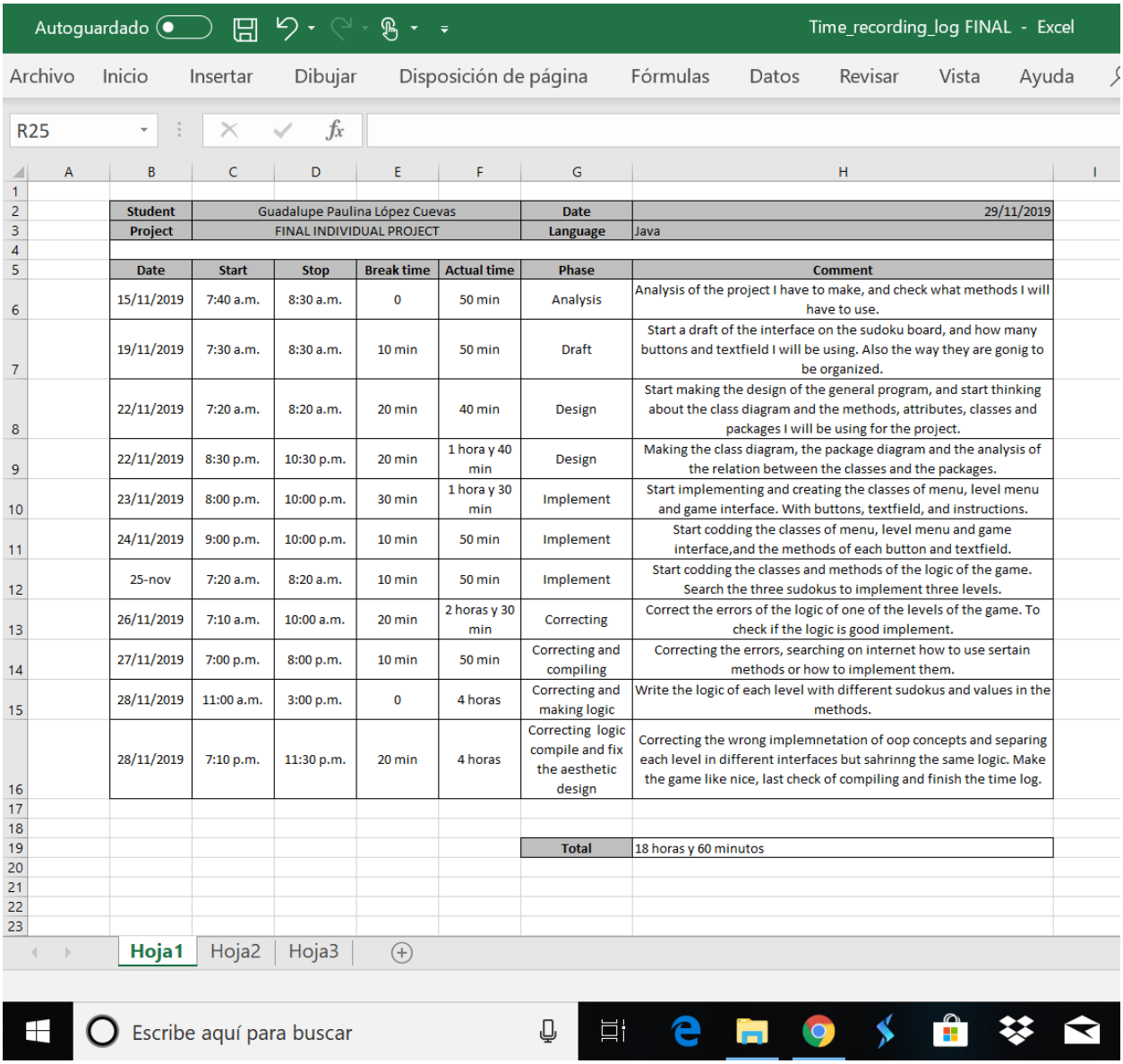

Autoguardado — Time_recording_log FINAL - Excel

Archivo Inicio Insertar Dibujar Disposición de página Fórmulas Datos Revisar Vista Ayuda

R25

Student	Guadalupe Paulina López Cuevas				**Date**	29/11/2019	
Project	FINAL INDIVIDUAL PROJECT				**Language**	Java	
Date	**Start**	**Stop**	**Break time**	**Actual time**	**Phase**	**Comment**	
15/11/2019	7:40 a.m.	8:30 a.m.	0	50 min	Analysis	Analysis of the project I have to make, and check what methods I will have to use.	
19/11/2019	7:30 a.m.	8:30 a.m.	10 min	50 min	Draft	Start a draft of the interface on the sudoku board, and how many buttons and textfield I will be using. Also the way they are gonig to be organized.	
22/11/2019	7:20 a.m.	8:20 a.m.	20 min	40 min	Design	Start making the design of the general program, and start thinking about the class diagram and the methods, attributes, classes and packages I will be using for the project.	
22/11/2019	8:30 p.m.	10:30 p.m.	20 min	1 hora y 40 min	Design	Making the class diagram, the package diagram and the analysis of the relation between the classes and the packages.	
23/11/2019	8:00 p.m.	10:00 p.m.	30 min	1 hora y 30 min	Implement	Start implementing and creating the classes of menu, level menu and game interface. With buttons, textfield, and instructions.	
24/11/2019	9:00 p.m.	10:00 p.m.	10 min	50 min	Implement	Start codding the classes of menu, level menu and game interface,and the methods of each button and textfield.	
25-nov	7:20 a.m.	8:20 a.m.	10 min	50 min	Implement	Start codding the classes and methods of the logic of the game. Search the three sudokus to implement three levels.	
26/11/2019	7:10 a.m.	10:00 a.m.	20 min	2 horas y 30 min	Correcting	Correct the errors of the logic of one of the levels of the game. To check if the logic is good implement.	
27/11/2019	7:00 p.m.	8:00 p.m.	10 min	50 min	Correcting and compiling	Correcting the errors, searching on internet how to use sertain methods or how to implement them.	
28/11/2019	11:00 a.m.	3:00 p.m.	0	4 horas	Correcting and making logic	Write the logic of each level with different sudokus and values in the methods.	
28/11/2019	7:10 p.m.	11:30 p.m.	20 min	4 horas	Correcting logic compile and fix the aesthetic design	Correcting the wrong implemnetation of oop concepts and separing each level in different interfaces but sahrinng the same logic. Make the game like nice, last check of compiling and finish the time log.	
					Total	18 horas y 60 minutos	

Hoja1 Hoja2 Hoja3

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Package diagram

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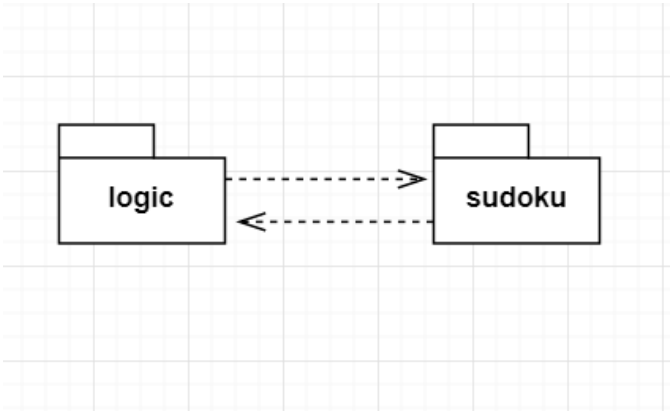
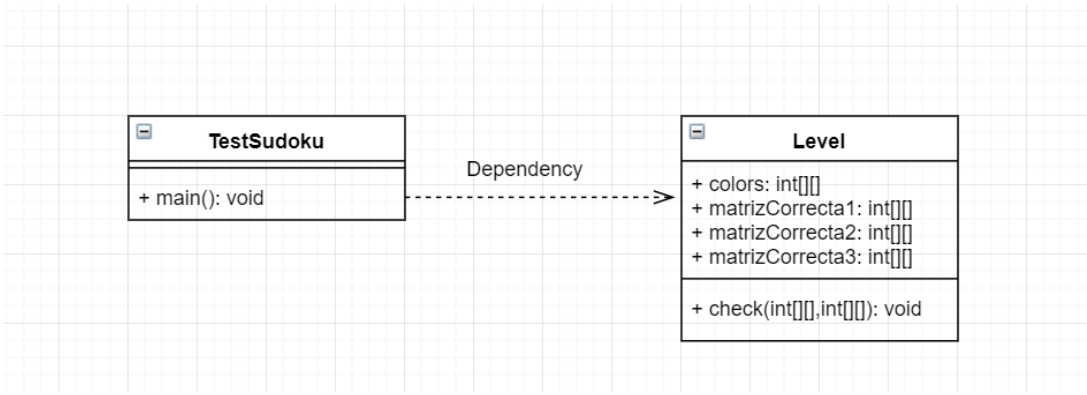
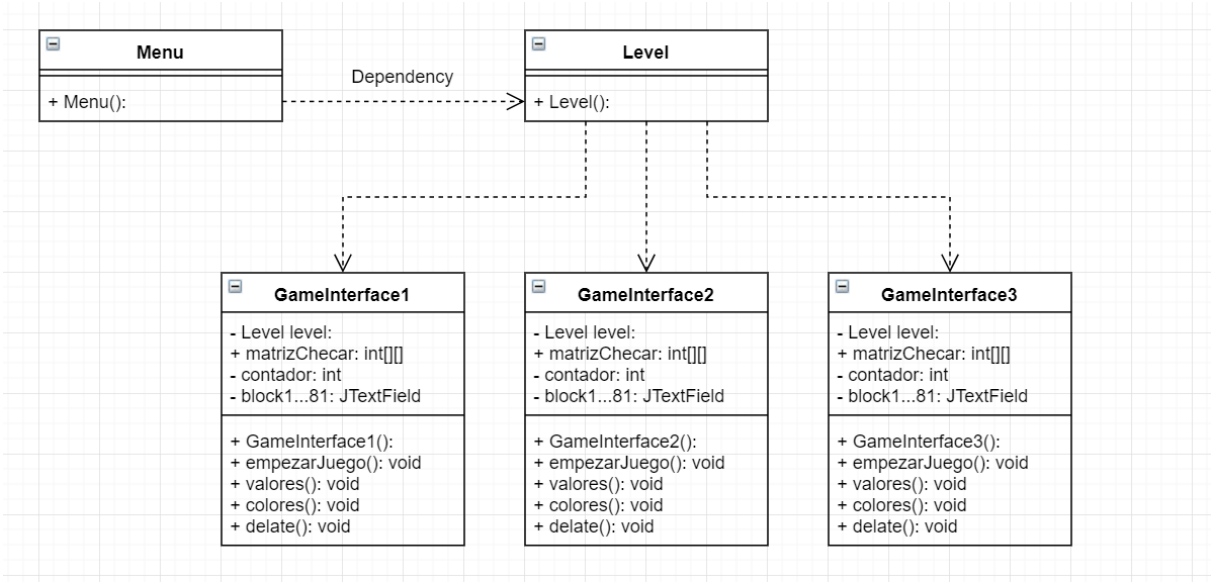


Logic Class diagram



Sudoku Class diagram



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PRIMER DIAGRAMA DE CLASES

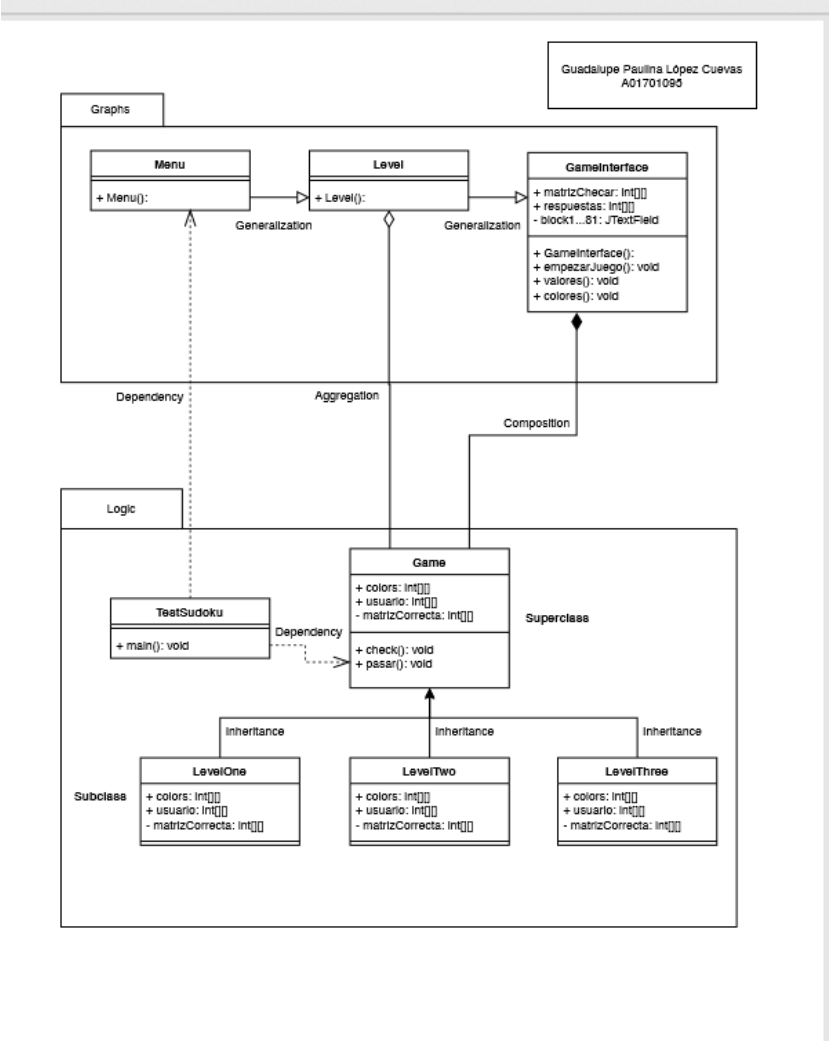
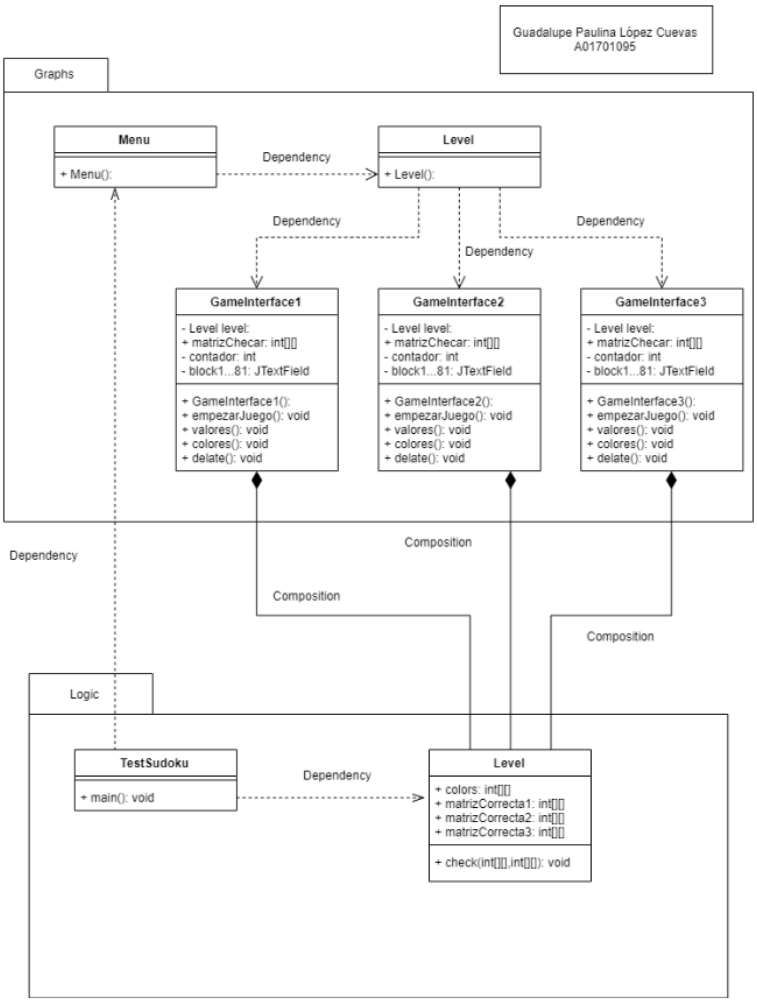


DIAGRAMA CORREGIDO Y BIEN DEFINIDO CON EL PROYECTO FINAL



Most of the classes just use dependency, but Level has composition to the Game Interfaces because Level depends on them, and this is how Game Interface of the three levels are able to use the same logic of Level to prove if the answer of the user is right or wrong.

Distribution of the project in packages and classes

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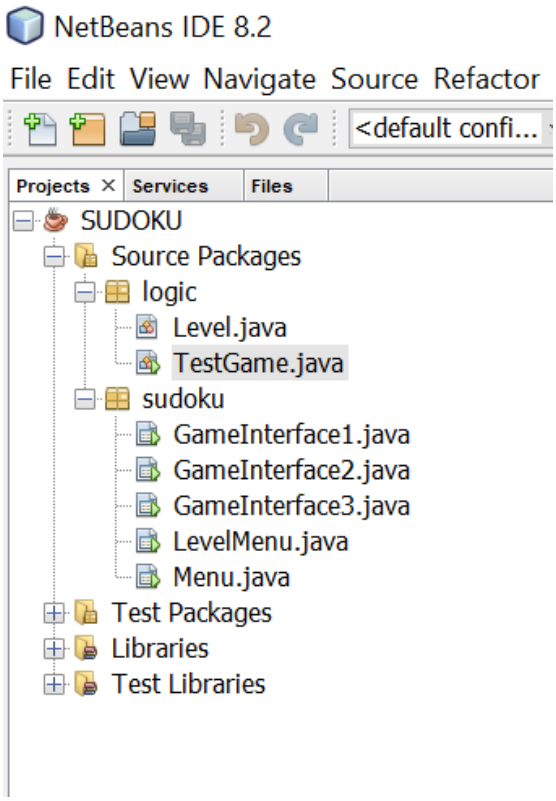
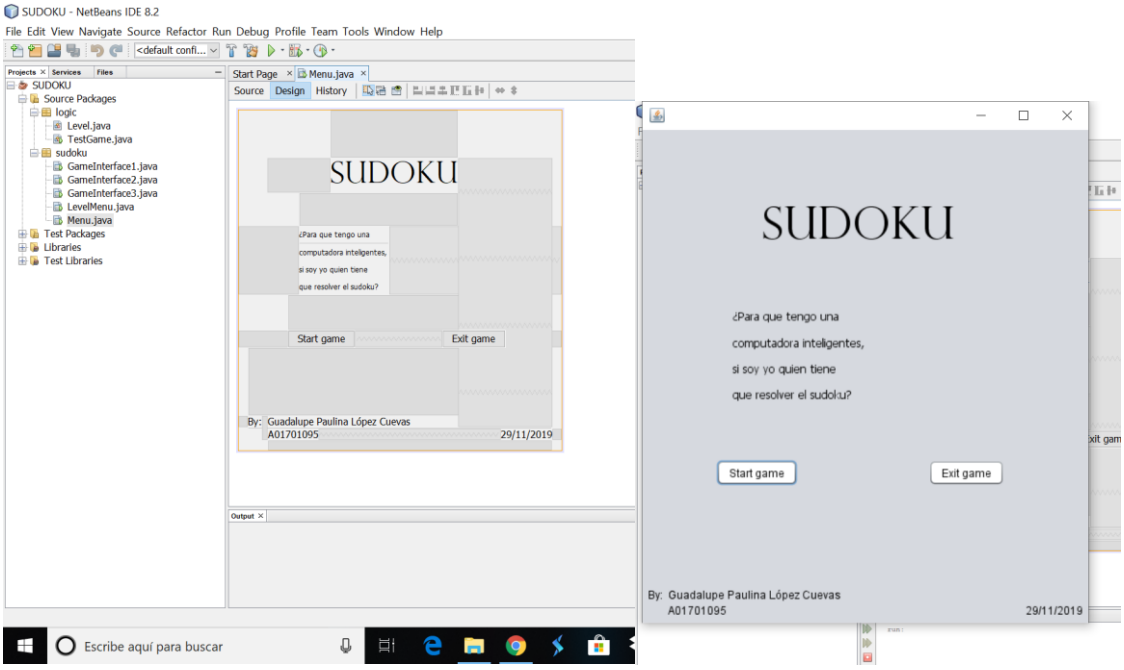


INTERFACES OF THE GAME

Menu



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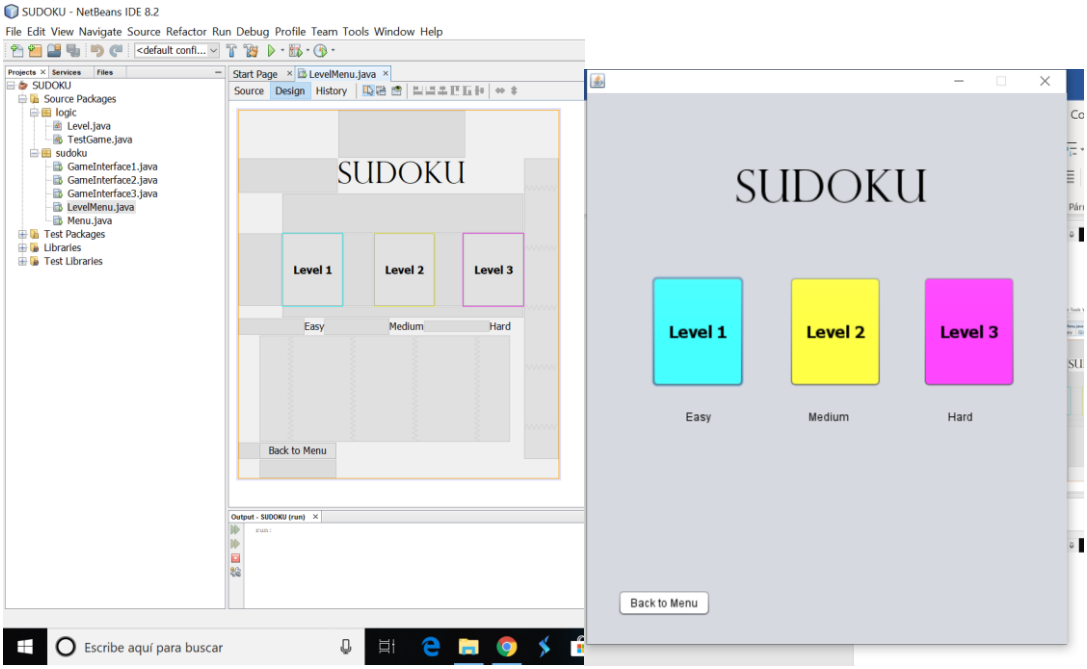
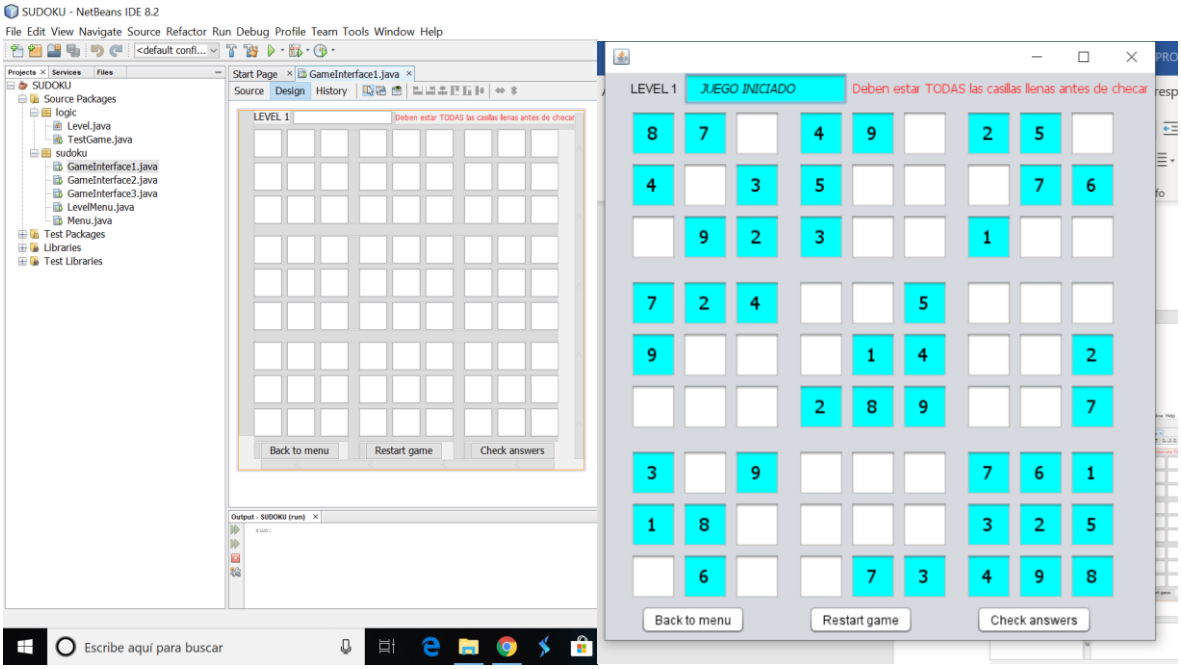
Level Menu



Game Interface Level 1



Game Interface Level 2

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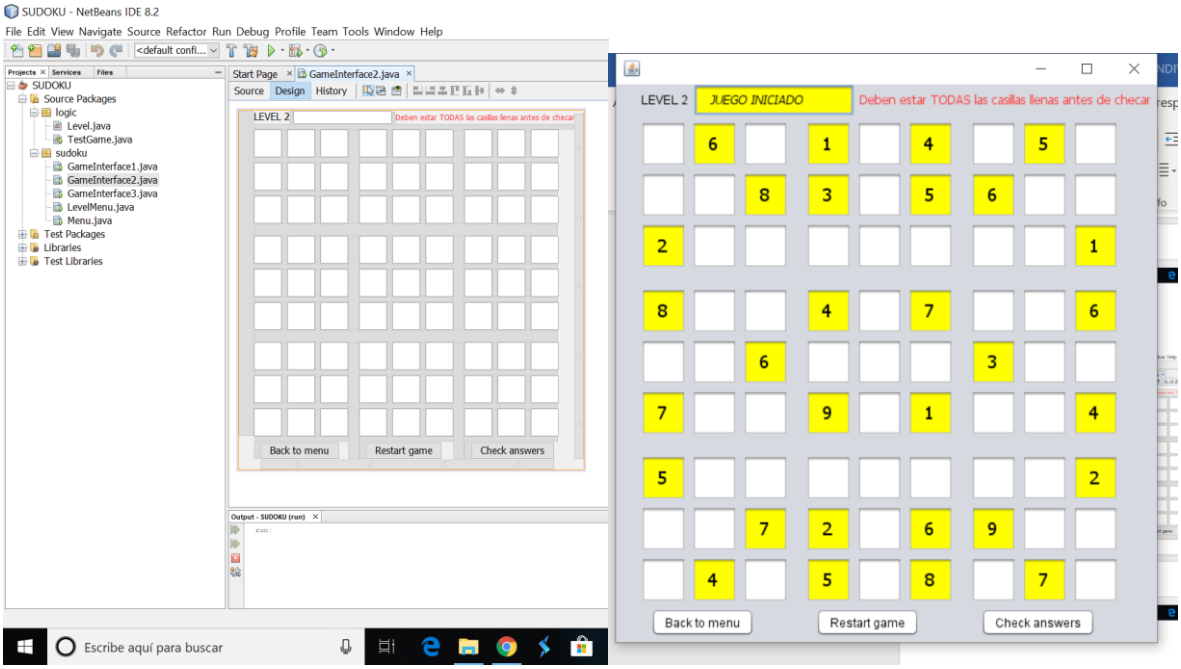
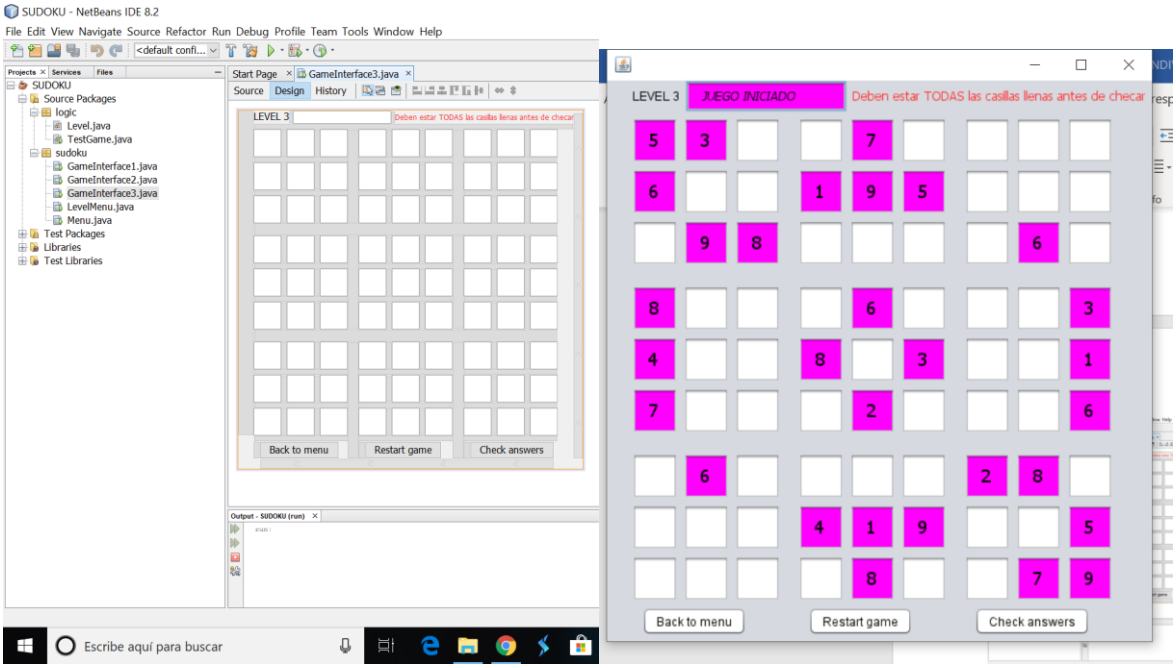


Game Interface Level 3



Ate the beginning I actually didn't know how to use the IDE because I was so use to the noteblock that I never learn to use an IDE and less a Interface. While I was experimenting, I learn how to use the interfaces. First I didn't know how to start to make the sudoku. I start with the sudoku board and start with the main menu and the level menu using the

buttons to change from one window to another when you press certain button. Then I start with the logic but I haven´t really clear the relationship between the classes, so when I deliver my class diagram it was a mess. At the end I change the class diagram and add and delate methods and variables to make it work and easier to program. It was a trouble because at the beginning I try to use inheritance I a wrong way, but I ask for help and a friend explain me a easier way to make the sudoku so that's how I end with three interfaces and just one class of logic that have the three sudoku answers on a matrix each one. At the end I put a bit of color so the user could notice the difference between each level. And at the end I finish the time log and de documentation with the program compiling, running and executing well done.

DESCRIPTION OF THE PROGRAM

When you start the program, it automatically shows you a main menu, that have a start button and a exit button, if you press exit you leave the game and it end the program. If you press start game, it disappear the menu and appear the level menu were there are 4 buttons, one to go back to the menu, and the other three to choose the level you want to play, level 1, level 2 and level 3. Depending on what level you choose it would be de difficulty to solve the sudoku, and with that will depend how many numbers do the game give you at the beginning as a help to solve the sudoku. When you press any of the level buttons it will send you to a interface with a sudoku board with certain numbers already guessed, this ones CAN´T be edited by the user. Also it will appear three more buttons which are back to menu that send you to the main menu, restart game that will erased all the cells the user write and put them in null so you can start over again the game, and the check answer button, when you finish to complete all the cells, press that button and it will show you the right and wrong answers you have in the sudoku.