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PROJECT: VIRTUAL SCHOOL GAME

The project is about a video game where you can be a university student and your objective is to pass the semester defeating the homeworks (PDF'S FILES) you have. Is a game with different stages, each stage has a different quantity of enemies (PDF'S). When you defeat all PDF'S in the stage, you will pass to the next stage with more enemies. The game does not have an end. It is a competitive game with scores, try to be the best and be the number one in the ranking.

The game will have a main menu that allows you to start a new game, load a saved game, check game scores, information on the sessions started and exit the game. When starting a game you can choose between the two characters, male or female, and as the enemies are eliminated, the total moodleCoins will increase.

Why does the project need two members?

We can distribute the different responsibilities and achieve a good quality game in a short time, in addition to the fact that the two members have a great love for video games, which is why we will show our commitment and performance not to abandon the project.

FUNCTIONAL REQUIREMENTS:

- RF 1.** Menu: The program needs to have a menu with the options play, score and exit.
- RF 2.** Save score: The program needs to save the score of the player when he loses or he leaves the game.
- RF 3.** Show ScoreTable: The program needs to show the score of all players of the game.
- RF 4.** Exit: The program has a button to close the application.
- RF 5.** Choose character: Show a screen to choose between two characters, **MALE OR FEMALE.**
- RF 6.** Attack: the player could attack with a gun the PDF'S.
- RF 7.** Buy guns: the player could buy guns with **MoodleCoins.**
- RF 8.** Save game: the player could save the game to return later.
- RF 9.** Show ScoreInScreen: the score will be updated and displayed on the screen.
- RF 10.** Shop: The player can access a shop to buy different powers with MoodleCoins, the button shop will be on the screen of the game.
- RF 11.** Pause game: The player can pause the current game.
- RF 12.** Move player: the player can move in the map of the game.
- RF 13.** Enemies: there will be several enemies, the enemies will chase and kill the player.
- RF 14.** ChangeStage: when the player kills all the enemies, the stage will change and will generate more quantities of enemies. (the advice of change of scenery will be displayed on the screen).
- RF 15.** SearchPlayerScoreTable: the program can search the scores associated with the nickname to search.
- RF 16.** Collisions: the player, enemies and the powers will have collisions to know when the power impacts the enemy or when the enemy attacks us.

NO FUNCTIONAL REQUIREMENTS:

RNF 1. Serialize all the information of all players and their own scores

RNF 2. Design and implement automated unit tests for all project methods

RNF 3. Save both the score of each player and the damage generated to enemies in binary trees

RNF 4. Implement the binary search in the search for a user and the position of the game score

RNF 5. Use the bubble sorting algorithm to sort the levels, the insertion algorithm to sort the amount of enemies and the selection algorithm to sort the amount of money generated by the user.

RNF 6. Implement motion interface for characters.

RNF 7. Create custom exceptions for:

- Creating a new game the user enters a required nickname
- The user does not buy a gun without having enough money
- Search a user and position existing

RNF 8. Create java api-own exceptions for all persistent files

RNF 9. Apply inheritance to the Characters, Weapons, and Enemies classes

RNF 10. Load a player's saved games using plain text file persistence

RNF 11. Implement threads for the movement and attack of the players and enemies

RNF 12. Implement the binary tree for the players and for the data session

RNF 13. Use naturally recursive methods in the two binary tree of players and the data session

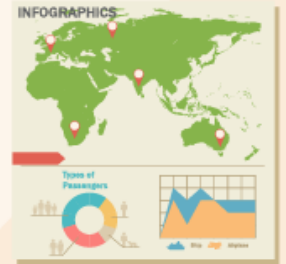
VIRTUAL SCHOOL GAME

NEW GAME

LOAD GAME

SCORES

EXIT



PLAYERS:



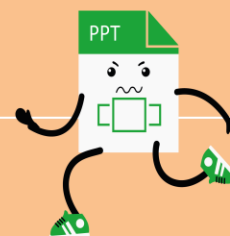
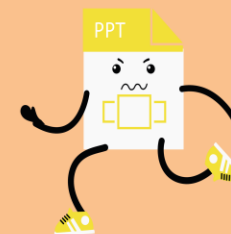
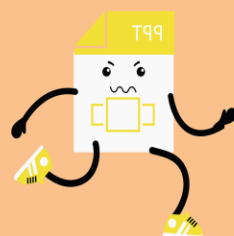
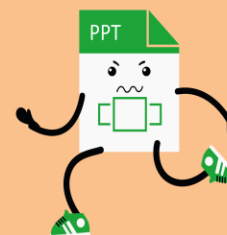
Choose



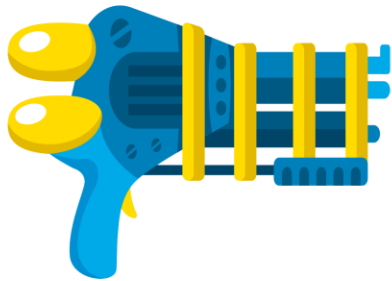
Choose



1500



ModdleCoins: 1500



1500



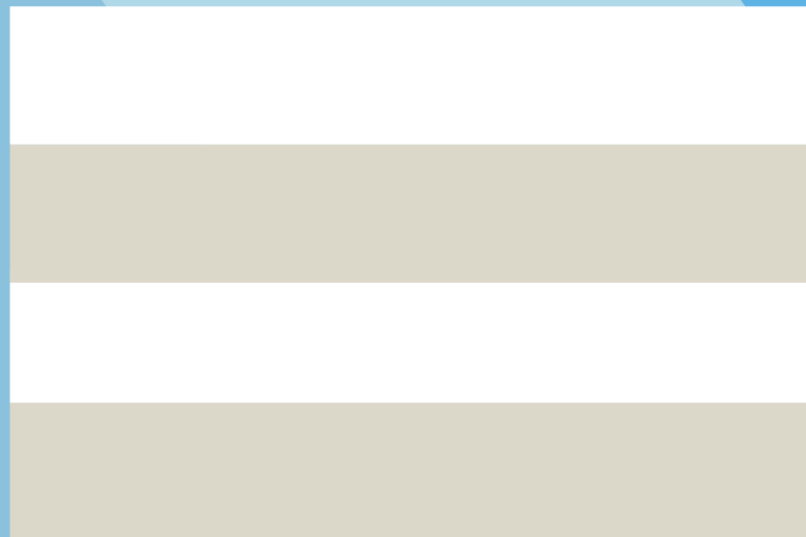
3500



5000

BACK

LOAD GAME



Load

Back

SCORES

Search by user

Search

Search by position

Search

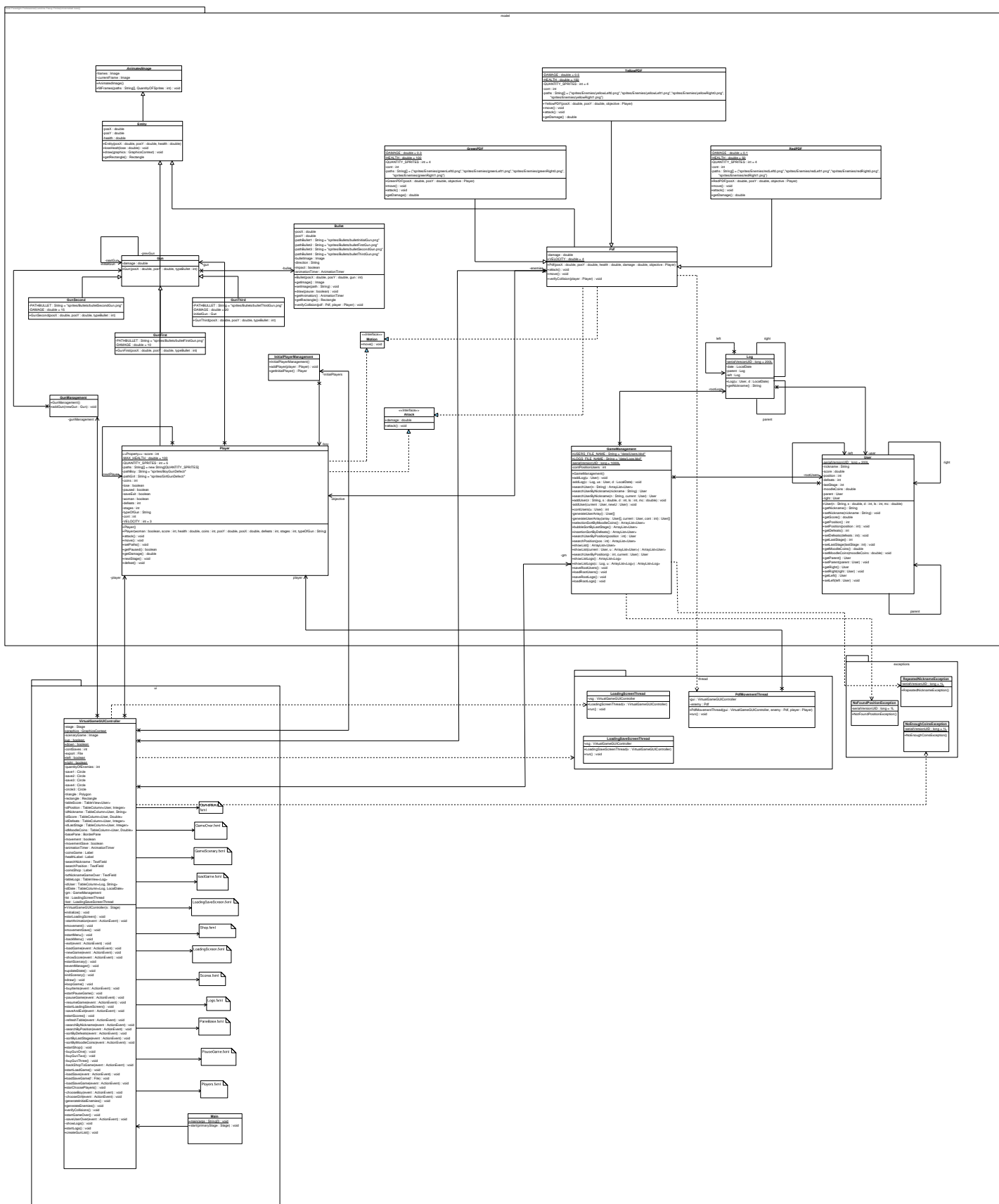
REFRESH

SORT BY DEFEATS

SORT BY LAST STAGE

SORT BY MOODLECOINS

BACK



JUNIT TEST

CONFIGURATION OF THE STAGES:

Name	Class	Stage
setupStage1	UserTest	Create a user
setupStage1	PdfTest	Create a pdf
setupStage1	GunFirstTest	Create a basic gun
setupStage1	GunSecondTest	Create a medium gun
setupStage1	GunThirdTest	Create a maximum gun
setupStage1	GreenPDFTest	Create a green pdf
setupStage1	RedPDFTest	Create a red pdf
setupStage1	YellowPDFTest	Create a yellow pdf
setupStage1	GameManagementTest	
setupStage2	GameManagementTest	Create a file with a serialized object of the GameManagment class
setupStage1	PlayerTest	Create a player
setupStage2	PlayerTest	Create a user
setupStage3	PlayerTest	Create a player

setupStage1	MotionTest	Create a enemy
setupStage1	AttackTest	Create a player
setupStage1	LogTest	Create a log

TEST CASE:

Test Objective: Verify that the user was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly.				
Clase	Método	Escenario	Valores de Entrada	Resultado
User	User	setupStage1	nickname="Unicode" score=901 position=10 defeats=12 lastStage=8 moodleCoins=4.200	The user has been created successfully. Each of the attributes of the new user is correctly assigned.

Test Objective: Verify that the first gun was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly.				
Clase	Método	Escenario	Valores de Entrada	Resultado
GunFirst	GunFirst	setupStage1	design=gunFirstImage damage=4 magicWeaponry="Witchcraft"	The first gun has been created successfully. Each of the attributes of the new first gun is correctly assigned.

Test Objective: Verify that the second gun was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly.

Clase	Método	Escenario	Valores de Entrada	Resultado
GunSecond	GunSecond	setupStage1	design=gunSecondImage damage=7 naturalWeaponry="Elemental Mimicry"	The second gun has been created successfully. Each of the attributes of the new second gun is correctly assigned.

Test Objective: Verify that the third gun was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly.

Clase	Método	Escenario	Valores de Entrada	Resultado
GunThird	GunThird	setupStage1	design=gunThirdImage damage=10 dimensionalWeaponry="Space Shooting"	The third gun has been created successfully. Each of the attributes of the new third gun is correctly assigned.

Test Objective: Verify that the Green pdf was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly.

Clase	Método	Escenario	Valores de Entrada	Resultado
GreenPDF	GreenPDF	setupStage1	pdf=pdfGreenSprite duration=210.3 width=80 height=80 posX = 220 posY = 410 health=100 damage=10	The green pdf has been created successfully. Each of the attributes of the new green pdf is correctly assigned.

			dimensionalShield=8	
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Test Objective: Verify that the red pdf was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly.				
Clase	Método	Escenario	Valores de Entrada	Resultado
RedPDF	RedPDF	setupStage1	pdf=pdfRedSprite duration=130.3 width=75 height=80 posX = 210 posY = 387 health=70 damage=8 naturalShield=6	The red pdf has been created successfully. Each of the attributes of the new red pfd is correctly assigned.

Test Objective: Verify that the yellow pdf was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly.				
Clase	Método	Escenario	Valores de Entrada	Resultado
Yellow PDF	YellowPDF	setupStage 1	pdf=pdfYellowSprite duration=320.3 width=90 height=92 posX = 230 posY = 249 health=100 damage=6 magicalShield=4	The yellow pdf has been created successfully. Each of the attributes of the new yellow pfd is correctly assigned.
Test Objective: Verify that the game management was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly. Also, verify that the gun are correctly created				

Clase	Método	Escenario	Valores de Entrada	Resultado
GameManagment	GameManagment	setupStage1	Anyone	The game management has been created successfully.
GameManagment	saveGameManagment	setupStage2	Anyone	An object of the class GameManagment with the attributes of the serialized object

Test Objective: Verify that the player was created correctly, checking the information that passes through the parameter meets the requirements to be able to create and search correctly. Also verify that a user from player is created correctly				
Clase	Método	Escenario	Valores de Entrada	Resultado
Player	Player	setupStage1	nickname="Cpasuy" score=721 position=2 defeats=20 lastStage=12 moodleCoins=7.200 lose=true paused=false gun=gunThird	The player has been created successfully. Each of the attributes of the new player is correctly assigned.
Player	addUser	setupStage2	nickname="Cpasuy" score=721 position=2 defeats=20 lastStage=12 moodleCoins=7.200	The user has been created successfully. Each of the attributes of the new user is correctly assigned.
Player	addLog	setupStage3	User=User Date=21/12/2021 Hour=8:30	The log has been created successfully. Each of the attributes of the new log is correctly assigned.

Test Objective: Verify that the class log is working correctly				
Clase	Método	Escenario	Valores de Entrada	Resultado
Log	Log	setupStage1	User=User Date=21/12/2021 Hour=8:30	An object of class Log (parent = null, left = null, right = null, date = actualDate, user = user) successfully added to ABB's logs

Test Objective: Verify that the motion is working correctly				
Clase	Método	Escenario	Valores de Entrada	Resultado
Motion	move	setupStage1	nickname="unicode" score=721 position=2 defeats=20 lastStage=12 moodleCoins=7.200 lose=true paused=false gun=gunThird	The character has to move the directions of a player wants

Test Objective: Verify that the attack is working correctly				
Clase	Método	Escenario	Valores de Entrada	Resultado
			nickname="sebas32" score=721	The character has to attack linearly on the direction of the enemies

Attack	move	setupStage1	position=2 defeats=20 lastStage=12 moodleCoins=7.200 lose=true paused=false gun=gunThird	
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