**INTEGRATIVE TASK #2**

**JUAN FELIPE JOJOA CRESPO A00382042**

**SOFTWARE ENGINEERING PROBLEM SPECIFICATION TABLE, identifying the following elements.**

| CLIENT | The video game company. |
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| USER | Game Administrator. |
| FUNCTIONAL REQUIREMENTS | * R1-Create player. * R2-Create level. * R3-Register enemy to a level. * R4-Register treasure to a level. * R5-Modify a player's score. * R6-Increase level for a player. * R7-Report treasures and enemies. * R8-Report the amount of treasures at all levels. * R9-Report the number of enemies at all levels. * R10-Report the most repeated treasure at all levels. * R11-Report the highest scoring enemy and the level where it is located. * R12-Report the number of consonants in the enemies' names. * R13-Report the top 5 players according to the score. |
| CONTEXT OF THE PROBLEM | A video game company needs the collaboration for the creation of a video game, the game contains 10 levels in which the player collects treasures and fights with enemies and requires an analysis of the requirements and make the model of classes, their responsibilities, and collaborations for the functionalities related to the registration of players, levels, treasures, and enemies. |
| NON-FUNCTIONAL REQUIREMENTS | * It is very important that the system has a very good performance, so that the display of the treasures and enemies of a level in the web application does not take more than 2 seconds. * The company wants the system to work both as a web application and as a mobile app. |

**Functional Requirements Analysis Table (Note: One table for each functional requirement)**

| Name or identifier | R1-Create player. | | |
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| Abstract | The system must be able to create players who will be identified with a nickname and a name. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| nickName | String | The player must not have been registered before, and cannot repeat nickname. |
| name | String |
| initScore | int |
| qtyLives | int |
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| General activities necessary to obtain the results | The person has been successfully registered in the game or will be asked to try again in case he/she uses an already selected nickname. | | |
| Result or postcondition | The person has been successfully registered in the game. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgPlayerConfirmation | String |  |
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| Name or identifier | R2-Create level. | | |
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| Abstract | The system must be able to create levels, a level is identified by an ID and the points required to move to the next level. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| idLevel | String |  |
| scoreToPassLvl | int |  |
| initEnemies | int |  |
| initTreasures | int |  |
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| General activities necessary to obtain the results | The user enters the requested data correctly to create the level and a confirmation message. | | |
| Result or postcondition | The user receives a confirmation message identifying that the level was created correctly or if the user enters any data incorrectly he/she will be told to try again. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgLevelConfirmation | String |  |
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| Name or identifier | R3-Register enemy to a level. | | |
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| Abstract | The system must be able to register enemies, which have an ID, a type, and the score that the player loses and an X and Y position. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| name | String |  |
| enemyType | String |  |
| lossScore | int |  |
| winnerScore | int |  |
| randomPixelPosition | double |  |
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| General activities necessary to obtain the results | The user must enter the data correctly to be able to execute the registration of the enemy to the level, as long as there is space in the total number of enemies that the program can have. | | |
| Result or postcondition | The user receives a confirmation message upon successful registration of the enemy. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgEnemyRegistered | String |  |
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| Name or identifier | R4-Register treasure to a level. | | |
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| Abstract | The system must be able to register treasures in a level, knowing that the treasures have a name, an image url, the score it gives to the player, its position in the display and the amount per level. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| name | String |  |
| urlLinkImage | String |  |
| scoreToPlayer | int |  |
| randomPixelPosition | double |  |
| qtyPerLevel | int |  |
| General activities necessary to obtain the results | The user must have entered the data correctly and taking into account the maximum number of treasures that can be present for it to run correctly, and the level must be initialized. | | |
| Result or postcondition | The user receives a successful confirmation message from the enemy. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgEnemyConfirmation | String |  |
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| Name or identifier | R5-Modify a player's score. | | |
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| Abstract | The system must be able to be able to modify a player's score by looking up his nickname and the saved score of that player. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| nickName | String | The player must be registered and initialized. |
| initScore | int |
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| General activities necessary to obtain the results | The user enters data of previously registered players, and upon finding them, changes the value of their score. | | |
| Result or postcondition | The user receives a message confirming the modified score for the selected player. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgChangeScoreConfirmation | String |  |
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| Name or identifier | R6-Increase level for a player. | | |
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| Abstract | The system must be able to increase the level of a player, and inform him what score he needs to pass to the next level, with his nickname and his current score. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| nickName | String | The player must be in a level, must be registered and initialized. |
| initScore | int |
| actualLevel | String |
| scoreToPassActualLevel | String |
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| General activities necessary to obtain the results | The user is found and informed of the score needed to pass the level. | | |
| Result or postcondition | The user receives a confirmation message informing him/her of the score required to pass to the next level. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgInformScoreConfirmation | String |  |
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| Name or identifier | R7-Report treasures and enemies. | | |
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| Abstract | The system must be able to report on the treasures and enemies that are registered at each level requested by the user. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| idLevel | String | The level where the treasures and enemies are must be initialized. |
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| General activities necessary to obtain the results | The user enters the level to be consulted and it must contain at least one treasure and one enemy. | | |
| Result or postcondition | The user receives comma-separated information about the enemies and treasures in the level. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgInformTreasuresnEnemiesConfirmation | String |  |
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| Name or identifier | R8-Report the amount of treasures at all levels. | | |
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| Abstract | The system has to be able to show all the treasures that are registered at all levels and display them on the screen. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| initTreasures | int | The treasure to be searched must be registered and initialized. |
| name | String |
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| General activities necessary to obtain the results | Executing the option will do a partial search to find all the treasures. | | |
| Result or postcondition | The user receives a message with each treasure found. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgAllTreasures | String |  |
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| Name or identifier | R9-Report the number of enemies at all levels. | | |
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| Abstract | The system must be able to show the total number of enemies in all levels according to their type. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| initEnemies | int | There must be at least one enemy registered in each enemy type. |
| enemyType | String |
| type | String |
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| General activities necessary to obtain the results | The user enters what kind of enemies they need to see in each level. | | |
| Result or postcondition | The user receives as a message all enemies of all levels of the selected type. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgAllTypeEnemies | String |  |
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| Name or identifier | R10-Report the most repeated treasure at all levels. | | |
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| Abstract | The system must be able to show the most repeated treasures in all levels. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| idLevel | String | There must be at least one treasure recorded in the entire game. |
| initTreasures | String |
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| General activities necessary to obtain the results | The system does a partial traversal to find the repeated treasures in all levels. | | |
| Result or postcondition | The user receives a message with all the obtained treasures obtained. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgRepeatedTreasures | String |  |
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| Name or identifier | R11-Report the highest scoring enemy and the level where it is located. | | |
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| Abstract | The system should be able to show the highest scoring enemy and find out what level they are on. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| idLevel | String | There must be at least one treasure recorded in the entire game. |
| initEnemies | String |
| winnerScore | int |
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| General activities necessary to obtain the results | A partial search will be done looking in the arrangement of enemies which is the one with the highest score that was registered and finds it in a specific level. | | |
| Result or postcondition | The enemy encountered with the highest score and its location in the level will be returned to the user. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgMostScoreEnemy | String |  |
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| Name or identifier | R12-Report the number of consonants in the enemies' names | | |
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| Abstract | The system must be able to count consonants in enemy names. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| name | String | There must be at least one enemy registered in the entire game. |
| initEnemies | String |
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| General activities necessary to obtain the results | A partial tour of all enemies will be made to collect their names, then the consonants will be counted. | | |
| Result or postcondition | The user receives a message with the consonants of the enemies' names. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgEnemyConsonants | String |  |
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| Name or identifier | R13-Report the top 5 players according to the score. | | |
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| Abstract | The system must be able to display the top 5 players in the game. | | |
| Inputs | Name of entry | Data type | Selection or repetition condition |
| nickName | String | There must be at least 5 registered players. |
| score | int |
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| General activities necessary to obtain the results | The system will do a partial run through to verify the players already registered, read their nicknames and scores, and display the top 5. | | |
| Result or postcondition | The user receives a confirmation message and the top 5 console players of the game. | | |
| Outputs | Name of entry | Data type | Selection or repetition condition |
| msgTopPlayers | String |  |
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