**TABLA DE ESPECIFICACIÓN DEL PROBLEMA DE INGENIERÍA DE SOFTWARE,**

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**identificando los siguientes elementos**

|  |  |
| --- | --- |
| CLIENTE | a video game company |
| USUARIO | players of the game and admin |
| REQUERIMIENTOS FUNCIONALES | R1. Create a Player  R2. Register level  R3. Register enemy at a level  R4. Register treasure at a level  R5. Modify a player’s score.  R6. Increase level for a player, in case you cannot increase the level, you must inform the user what score is required to raise.  R7. Report treasures and enemies (separated by comma) of a given level by the user  R8. Report the amount found of a treasure at all levels, that is if the user wants to know how many diamonds exist at all levels.  R9. Report the amount found of an enemy type at all levels, that is if the user wants to know how many ogres exist at all levels.  R10. Report the most repeated treasure at all levels.  R11. Inform the enemy that gives the highest score and the level where it is located.  R12. Report the number of consonants found in the game’s enemy names.  R13. Report top 5 players according to score |
| CONTEXTO DEL PROBLEMA | A video game company needs you to collaborate with a video game, the game consists of 10 levels in which the player collects treasures and fights with enemies. They have requested your help to analyze the requirements and perform the model of classes, responsibilities, and collaborations, for now ONLY for the system functionalities related to the registration of players, levels, treasures, and enemies |
| REQUERIMIENTOS NO FUNCIONALES | R1. the system performs very well  R2. The deployment of treasures and enemies of a level, in the web application no later than 2 sec.  R3. the system operates as both a web application and a mobile app. |

**Tabla de análisis de requerimientos funcionales (Nota: Una tabla por cada requerimiento funcional)**

Requirement 1

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Create a Player | | |
| Resumen | The system must allow players to register, from them is handled a nickname that identifies him, a name, the initial score (the player starts with 10), has a few lives (starts with 5). The system must allow to establish the level in which the player goes considering his score and the score required to pass the level. Remember that the nickname is the identifier so it cannot be repeated. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Nickname | String | String is different from null or empty |
| Name | String | String is different from null or empty |
| Actividades generales necesarias para obtener los resultados | the necessary to obtain the result is, the correct entry of the order to the user, and the execution of the methods of the class to be able to register the user. | | |
| Resultado o postcondición | the result is a String message which tells you that the player has been registered. | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Msj | String | all methods of the different classes have been executed correctly. |

Requirement 2

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Register level | | |
| Resumen | The system must record the different levels of the game. From one level you have a number that identifies you, the points that are required to move to the next level. For each level, you must register the treasures and enemies to be defeated and depending on them you define the level of complexity (high, medium, low), if the points that give the treasures is greater than the points of the enemies is low level, if equal is medium, and if there are more enemy points than treasure points is high. this requirement is of type Void therefore has no returns. and as it is automatically generated after initializing the game, then it has no inputs | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Actividades generales necesarias para obtener los resultados | The necessary to obtain the results is the correct initialization of the identification numbers of the levels and the necessary points for each level. Besides registering through methods, treasurers and enemies will be for each level. and define the level complexity by the points obtained or lost in each case. | | |
| Resultado o postcondición | the initialization of the game levels | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |

Requirement 3

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Register enemy at a level | | |
| Resumen | Enemies decrease the player’s score. From them you have a name (Identifier), a type, the score that subtracts in case you beat the player, the score that is added if defeated and the position X and Y in pixels in which you are (these X and Y positions are generated randomly, according to the resolution of the screen used (see annex)). In a level you cannot repeat enemies because once defeated, you would already know how to defeat others of the same level.  The possible types of enemies in the game are ogres, abstract, bosses and magic. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Name | String | String is different from null or empty |
| Type | String | Choose one of the allowed types of enemies in the game. |
| lostPoints | Int | Int is different from empty |
| winPoints | int | Int is different from empty |
| level | int | Level exists |
| Actividades generales necesarias para obtener los resultados | to obtain the expected results, the user is expected to correctly enter the requested data, in addition to the correct execution of all methods to find the correct record of the enemy in the level | | |
| Resultado o postcondición | a message from the enemy registry. | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| msj | String | all methods of the different classes have been executed correctly. |

Requirement 4

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Register treasure at a level | | |
| Resumen | Treasures are the mechanism that players must reach the points that are required to pass a level. Of the treasures of a level, you have the name, a URL to the image that represents it, the score that gives the player when it is found and the position X and Y in pixels in which it is located (these X and Y positions are generated randomly, according to the resolution of the screen used (see annex)). In a level you can find the same treasure in different positions, that is a diamond can be found in two different positions in the same level so at the time of entering the treasures to the game, the user will be asked, how many treasures you register for the same level. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Name | String | String is different from null or empty |
| image | URL | URL valid |
| winPoints | Int | Int is different from empty |
| NumberOfTreasure | int | that is a data type int |
| level | Int | Level exists |
| Actividades generales necesarias para obtener los resultados | the necessary to obtain the expected results, is the correct entry of the data requested to the user. In addition to the number of treasures which will be per level and the points that give the player to get them. | | |
| Resultado o postcondición | a message from the treasure registry. | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| msj | String | all methods of the different classes have been executed correctly. |

Requirement 5

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Modify a player’s score. | | |
| Resumen | This requirement allows us to change the points of each player which were earned at that level. if the player exists. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| NamePlayer | String | String is different from null or empty |
| changePoints | int | Int is different from empty |
| Actividades generales necesarias para obtener los resultados | To perform this process, it is necessary the following, that the player is registered, and that the player’s points can be modified | | |
| Resultado o postcondición | a score change confirmation message is displayed | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| msj | String | all methods of the different classes have been executed correctly. |

Requirement 6

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Increase level for a player | | |
| Resumen | this requirement asks us to be able to increase the level of a player with the points he has, if they are enough then he will change level, otherwise he will be told the points he needs to change level | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Nickname | String | That player exists.  String is different from null or empty |
| Actividades generales necesarias para obtener los resultados | what this requirement needs to obtain results, are the points that are needed to climb from one level to another, know at what level the player is currently, know if the player is registered and their points obtained so far, to level it up or to tell you how much you need to climb | | |
| Resultado o postcondición | an upload confirmation message or a notification message that tells you how many missing points to level up | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Msj | String | all methods of the different classes have been executed correctly. |

Requirement 7

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Report treasures and enemies (separated by comma) of a given level by the user | | |
| Resumen | this requirement shows us a list of all enemies and treasures on a level entered by the user. in a return message | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Level | Int | Level exists and Int is different from empty |
| Actividades generales necesarias para obtener los resultados | You need the user to enter an existing level and an integer number to display the result. | | |
| Resultado o postcondición | a message showing all the treasures and enemies of the level entered by the user. | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Msj | String | all methods of the different classes have been executed correctly. |

Requirement 8

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Report the amount found of a treasure at all levels | | |
| Resumen | This requirement shows us the number of treasures sought by the user throughout the game, that is the treasures in the game. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| nameTreasure | String | the treasure sought exists or is recorded, that the value received is not null or empty |
| Actividades generales necesarias para obtener los resultados | what is necessary for this requirement is that the treasure to be sought is registered | | |
| Resultado o postcondición | a message stating the quantity of treasures found of the type sought or a message error. | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Msj | String | all methods of the different classes have been executed correctly. |

Requirement 9

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Report the amount found of an enemy type at all levels | | |
| Resumen | Know the amount of an enemy type in all levels of the game, type of enemy chosen by the user and with which the search will be made. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| enemyType | String | Enemy exists and String is different from null or empty |
| Actividades generales necesarias para obtener los resultados | the user enters the type of enemy to be searched for and an enemy has previously been registered | | |
| Resultado o postcondición | a message stating the number of enemies of the selected type in the game | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Msj | String | all methods of the different classes have been executed correctly. |

Requirement 10

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Report the most repeated treasure at all levels. | | |
| Resumen | this requirement compares the amount of all the treasures that are in the game and tells us which is the one that appears most in all levels of the game, that is, in the game in general. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Actividades generales necesarias para obtener los resultados | It is necessary before performing the process, that there already exist some treasures recorded in some levels of the game so that they can be compared. | | |
| Resultado o postcondición | a message that tells me what is the treasure that most appears in the game | | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| msj | String | all methods of the different classes have been executed correctly. |

Requirement 11

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Inform the enemy that gives the highest score | | |
| Resumen | Inform the enemy that gives the highest score and the level where it is located | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Actividades generales necesarias para obtener los resultados | It is necessary before the process that there is an enemy registered by some levels of the game to be able to make the comparison of points. and so, return the message with the enemy that gives more points | | |
| Resultado o postcondición | A message with the enemy that gives more points | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Msj | String | all methods of the different classes have been executed correctly. |

Requirement 12

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Report the number of consonants found in the game’s enemy names. | | |
| Resumen | this requirement will count the consonants that are in the names of all existing enemies in the game. \_. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Actividades generales necesarias para obtener los resultados | What is necessary to carry out this requirement is that there is an enemy registered at some level to be able to make the containment of consonants. | | |
| Resultado o postcondición | a message telling me the number of consonants in the names of all enemies in the game | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Msj | String | all methods of the different classes have been executed correctly. |

Requirement 13

|  |  |  |  |
| --- | --- | --- | --- |
| Nombre o identificador | Report top 5 players according to score | | |
| Resumen | this requirement will compare the scores of all existing players in the game and will show us the top 5 of them in a message. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| Actividades generales necesarias para obtener los resultados | Existing players are needed to start the comparison and initialization of the top. | | |
| Resultado o postcondición | the result is a message with the 5 best players of the game | | |
| Salidas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| msj | String | all methods of the different classes have been executed correctly. |