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

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| CLIENT | a video game company |
| USER | admins and player |
| FUNCTIONAL REQUIREMENTS | 1. Register Player 2. Register Level 3. Register Treasure 4. Register Enemy 5. Default difficulty level 6. Default player level 7. Modify player's score 8. Increase player score 9. Inform of treasure and enemies 10. Inform the number of treasures in all levels 11. Inform the amount of an enemy type in all levels 12. Inform the most repeated treasure in all levels 13. Inform the enemy that gives the most points and the level where it is located 14. Inform the number of consonants found in enemy names 15. Inform from top 5 players based on their scores 16. Display menu |
| CONTEXT OF THE PROBLEM | A video game company wants to develop a game in which the player must defeat as many enemies as he can and get treasures to increase his level |
| NON-FUNCTIONAL REQUIREMENTS | 1. The deployment of treasures and enemies in a level in the web application does not take more than 2 seconds. 2. The application works in web and mobile environments. |

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

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| --- | --- | --- | --- |
| Name or identifier | Register player | | |
| Abstract | It must be possible to save the necessary data of a player in the system | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| nickname | string | If the nickname does not yet exist in the database |
| name | string |  |
| score | int |  |
| lifes | int |  |
| General activities necessary to obtain the results | The data must be requested from the player registration user and validate that the **nickname** does not exist in the database. Finally, place an initial value of 10 in **score** and an initial value of 5 in **lifes**. | | |
| Result or postcondition | The player has been successfully registered | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | If the player was successfully registered |
| errMessage | string | No se registró al jugador correctamente |

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| Name or identifier | Register level | | |
| Abstract | The system allows you to create levels and save them in your database | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| id | string |  |
| scoreNextLevel | int |  |
| treasures | treasure |  |
| enemiesToDefeat | enemy |  |
| General activities necessary to obtain the results | The data required as input will be requested and saved in the database | | |
| Result or postcondition | Level registered successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | Level registered correctly |
| errMessage | string | Could not register level |

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| --- | --- | --- | --- |
| Name or identifier | Register treasure | | |
| Abstract | The system must allow to create treasures and save them in the database | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| name | string |  |
| imageUrl | string |  |
| gainScore | int | When the player finds the treasure position |
| position | int |  |
| quantity | int |  |
| General activities necessary to obtain the results | The treasure data will be requested from the user and saved in the database | | |
| Result or postcondition | The treasure has been registered successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | If the treasure has been registered |
| errMessage | String | Error registering the treasure |

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| --- | --- | --- | --- |
| Name or identifier | Register enemy | | |
| Abstract | The system must create and save the necessary data to the enemy in the system | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| idName | string | Does not exist in the database |
| type | enemyType |  |
| defeatScore | int | The player lost the game |
| victoryScore | int | The player won the game |
| position | int |  |
| defeatedByPlayer | boolean |  |
| General activities necessary to obtain the results | The necessary data for the registration of the enemy will be requested and will be saved in the database. The **defeatedByPlayer** will change to true when the player defeats the enemy | | |
| Result or postcondition | The enemy record has been created successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | The enemy has been registered |
| errMessage | string | Enemy not registered |

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| --- | --- | --- | --- |
| Name or identifier | Default difficulty level | | |
| Abstract | The determination of the level is given from the score of the treasures and the enemies that the level guards | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| defeatScoreEnemies | Int |  |
| gainScoreTreasures | int |  |
| General activities necessary to obtain the results | If the enemy's score is less than the treasure points the level is **Low**, if the enemy's score is equal to the treasure points the level is **medium**, if the enemy's score is greater than the treasure points the level is **high**. The input data must be positive, therefore, if there is any negative, the absolute value will have to be applied. | | |
| Result or postcondition | Level difficulty has been defaulted | | |

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| --- | --- | --- | --- |
| Name or identifier | Default player level | | |
| Abstract | The program must determine the level at which the player is | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| scorePlayer | int |  |
| scoreNextLevel | int |  |
| General activities necessary to obtain the results | From conditionals, the score that the player currently has is compared with the scores that must be reached in the levels and in this way determine at what level the player is. | | |
| Result or postcondition | The level has been defaulted | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| levelPlayer | int | Level default successfully |
| errMessage | string | There was an error in determining the level |

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| Name or identifier | Modify player's score | | |
| Abstract | The system must allow the player's score to be modified | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| nicknamePlayer | string |  |
| newScorePlayer | int |  |
| General activities necessary to obtain the results | The new value of the score will be assigned to the player | | |
| Result or postcondition | Player score has been changed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | string | The modification has been a success |
| errMessage | string | There was an error in the modification |

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| Name or identifier | Increase player level | | |
| Abstract | The program must allow to increase the player's level | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| nickNamePlayer | String |  |
| General activities necessary to obtain the results | The level in which the player is found is obtained, then the player's points are obtained and the points he needs to go up to the next level, in case he already has them, the player will level up | | |
| Result or postcondition | Player score has been increased | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Player level increased |
| errMessage | String | The user still does not get the necessary score |

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| --- | --- | --- | --- |
| Name or identifier | Inform treasure and enemies | | |
| Abstract | Information about treasures and enemies of a level will be displayed | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| idLevel | int |  |
| General activities necessary to obtain the results | The level will be searched with its idLevel in the level array and the information of the treasures and enemies will be accessed | | |
| Result or postcondition | Information has been displayed. | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | there is an error in the deployment |

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| Name or identifier | Inform the number of treasures in all levels | | |
| Abstract | A certain type of treasure found in all levels will be reported | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| nameTreasure | String |  |
| General activities necessary to obtain the results | The treasure that is found with the same name of nameTreasure will be searched in all the levels and they will be counted. | | |
| Result or postcondition | The number of treasures has been displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | There is an error in the deployment |

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| --- | --- | --- | --- |
| Name or identifier | Inform the amount of an enemy type in all levels | | |
| Abstract | A certain type of enemy found in all levels will be reported | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| enemyType | enemyType |  |
| General activities necessary to obtain the results | The enemyType that is found with the same name of enemyType will be searched in all the levels and they will be counted. | | |
| Result or postcondition | The number of enemy has been displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | There is an error in the deployment |

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| Name or identifier | Inform the most repeated treasure in all levels | | |
| Abstract | The treasure that is repeated more times in all levels will be reported | | |
| General activities necessary to obtain the results | Each level will be searched for all types of treasures, and each will be counted to deploy the greatest of all | | |
| Result or postcondition | The most repeated treasure has been deployed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | There is an error in the deployment |

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| Name or identifier | Inform the enemy that gives the most points and the level where it is located | | |
| Abstract | The level where the enemy that gives the most points is located will be reported | | |
| General activities necessary to obtain the results | The enemy that gives the player the most points in the game will be searched in all levels and the level where it is will be displayed | | |
| Result or postcondition | The enemy and level have been displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | There is an error in the deployment |

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| --- | --- | --- | --- |
| Name or identifier | Inform the number of consonants found in enemy names | | |
| Abstract | The number of consonants that the names of the enemies in the game have will be displayed | | |
| General activities necessary to obtain the results | Each name of all the enemies in the game will be searched and only the consonants will be extracted, and the size of the String will be the number of consonants | | |
| Result or postcondition | The number of consonants has been displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | There is an error in the deployment |

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| --- | --- | --- | --- |
| Name or identifier | Inform from top 5 players based on their scores | | |
| Abstract | The 5 players with the highest score will be informed | | |
| General activities necessary to obtain the results | The players will be ordered in an arrangement from highest to lowest score and the first 5 will be displayed | | |
| Result or postcondition | the top 5 has been displayed | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | There is an error in the deployment |

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| Name or identifier | Display menu | | |
| Abstract | Shows the options that are available in the options menu | | |
| Inputs | Input name | Datatype | Selection or repetition condition |
| option | int |  |
| General activities necessary to obtain the results | The menu options will be displayed, and the user's choice will be taken | | |
| Result or postcondition | Deployed and option taken successfully | | |
| Outputs | Output name | Datatype | Selection or repetition condition |
| message | String | Information was displayed |
| errMessage | String | There is an error in the user's choice |