**TABLA DE ESPECIFICACIÓN DEL PROBLEMA DE INGENIERÍA DE SOFTWARE, identificando los siguientes elementos**

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| CLIENTE | Empresa de videojuegos |
| USUARIO | Administrador |
| REQUERIMIENTOS FUNCIONALES | * R1: Create player * R2: Create enemy * R3: Create treasure * R4: Create levels * R5: Add enemy to level * R6: Add treasure to level * R7: Change player’s points * R8: Update player’s level * R9: Generate treasures and enemies report * R10: Generate treasures type report * R11: Generate enemies type report * R12: Generate most repeated treasure type report * R13: Generate most powerful enemy report * R14: Inform the number of consonants found in the game’s enemies’ names * R15: Generate report of the top 5 players in the game |
| CONTEXTO DEL PROBLEMA | The program must allow you to manage a game. This has 10 levels, which have a degree of difficulty depending on whether they contain enemies and treasures. Depending on the player's performance, their accumulated points will increase or decrease until they reach the points needed to move to the next level. The program allows the registration of levels, players, treasures and enemies, as well as the generation of reports on different elements of the game, among them, the top 5 of the players according to their score. |
| REQUERIMIENTOS NO FUNCIONALES | * The display of the treasures and enemies of a level in the web application takes no more than 2 seconds * The game works for web applications and for mobile applications |

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

El nivel del jugador varía según los puntos que obtenga en el juego.

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| Nombre o identificador | R1: Add player | | |
| Resumen | The program allows to register a player. Each player will have a nickname (identifier), a name, an initial score that starts at 10, a number of lives that starts at 5. The program allows registering a maximum of 20 players | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| nickName | String |  |
| name | String |  |
| score | double |  |
| lives | Int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Check if players amount hasn’t reached its maximum 3. Ask for players information 4. Create player 5. Store player in controller class 6. Show message | | |
| Resultado o postcondición | Store player in controller class | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| message | String |  |
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| Nombre o identificador | R2: Add enemy | | |
| Resumen | The program allows to register an enemy. Each enemy will have a name (identifier), a type (ogre, abstract, boss and magical), a score that is added or subtracted to the player if he wins or loses, respectively, and the position (x,y) in which he is. . The program allows you to create a maximum of 25 enemies | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| name | String |  |
| type | monsterType |  |
| score | double |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Check amount of enemies hasn’t is not at maximum 3. Ask for enemy’s information 4. Create enemy 5. Store enemy in controller class 6. Show message | | |
| Resultado o postcondición | Store the enemy in the controller class | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| message | String |  |
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| Nombre o identificador | R3: Add treasure | | |
| Resumen | The program allows to register a treasure. Each treasure will have a name, a URL of the image that represents it, a score awarded to the player when captured, a position (x,y) in pixels depending on the screen resolution used. The program allows registering a maximum of 50 treasures. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| name | String |  |
| url | image |  |
| score | double |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Check amount of treasures 3. Ask for treasure’s information 4. Create treasure 5. Store treasure in controller class 6. Show message | | |
| Resultado o postcondición | Store the treasure in the controller class’s treasures array | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| message | String |  |
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| Nombre o identificador | R4: Generate levels | | |
| Resumen | The program should automatically generate the 10 levels of the game including their points. The first level starts with 20 points, the rest of the levels have progressively higher scores | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
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| Actividades generales necesarias para obtener los resultados | 1. Generate levels | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
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| Nombre o identificador | R5: Add enemy to level | | |
| Resumen | The program allows for an enemy to be added to a level. An enemy cannot be in the same level more than once. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| enemyChosen | Int | The enemy is not already in the chosen level |
| levelChosen | int | The level has not reached the maximum amount of enemies |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Ask for the level where the enemy will be added 3. Check if level’s enemies are full 4. Ask for the enemy that wants to be added 5. Check if the enemy is already in the level 6. Add enemy to level 7. Calculate new level’s difficulty 8. Show message | | |
| Resultado o postcondición | Add enemy to level  Update level’s difficulty | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| message | String |  |
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| Nombre o identificador | R6: Add treasure to level | | |
| Resumen | The program allows for a treasure to be added to a level. The user can choose the number of treasures of a given type to add. | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| treasureChosen | Int |  |
| levelChosen | int | The level has not reached the maximum number of enemies |
| treasureAmount | int | The level has capacity to store this amount |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Ask for the level where the treasure will be added 3. Check if level’s treasures are full 4. Ask for the treasure that wants to be added 5. Ask for the number of treasures to be added 6. Check if the level’s treasures array has capacity 7. Add treasure to level 8. Calculate new level’s difficulty 9. Show message | | |
| Resultado o postcondición | Add treasure to level  Update level’s difficulty | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| message | String |  |
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| Nombre o identificador | R7: Change player’s points | | |
| Resumen | The program allows for a player’s points to be changed | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| playerChosen | Int | The player exists |
| newPoints | double |  |
| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Ask for the player whose points want to be changed 3. If player exists, ask for the new player’s points 4. Change player’s points 5. Show message | | |
| Resultado o postcondición | Change player’s points | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| message | String |  |
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| Nombre o identificador | R8: Change player’s level | | |
| Resumen | The program allows for a player’s level to be updated | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| playerChosen | int | The player exists |
| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Ask for the player whose level wants to be updated 3. If player’s points are enough, update level 4. If players are not enough, show how many points the player is missing to pass to the next level 5. Show message | | |
| Resultado o postcondición | Change player’s points | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| message | String |  |
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| Nombre o identificador | R9: Generate treasures and enemies report of a given level | | |
| Resumen | The program shows a report of all the enemies and treasures of a given level is shown | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| levelChosen | int | The level exists |
| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Ask for the level whose report wants to be shown 3. Generate report 4. Show report | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| levelReport | String |  |
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| Nombre o identificador | R10: Generate treasures type report | | |
| Resumen | Show the number of treasures of a given type are found across all levels | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| treasureChosen | int | The treasure exists |
| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Ask for the treasure whose report wants to be shown 3. Search treasure type across all levels 4. Show number of treasures of the given type | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| treasureReport | String |  |
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| Nombre o identificador | R11: Generate enemies type report | | |
| Resumen | The program shows the number of enemies of a given type are found across all levels | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| enemyChosen | int | The enemyType exists |
| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Show types of enemies 3. Ask for the enemy whose reports want to be shown 4. Search enemy type across all levels 5. Show number of enemies of the given type | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| enemyReport | String |  |
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| Nombre o identificador | R12: Generate most repeated treasure type report | | |
| Resumen | The program shows which treasure repeats the most across all levels | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| treasureChosen | int | The treasure exists |
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| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Ask for the treasure whose report wants to be shown 3. Search treasure type across all levels 4. Show treasure type | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| treasureRepeatedReport | String |  |
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| Nombre o identificador | R13: Generate most powerful enemy report | | |
| Resumen | The program shows the enemy that awards the most points when is beaten | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Search the enemy that awards the most points when the player beats it 3. Show enemy report | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| enemyPowerfulReport | String |  |
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| Nombre o identificador | R14: Inform the number of consonants found in the game’s enemies’ names | | |
| Resumen | The program shows number of consonants found in all the enemies’ names | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
| menuChoice | int |  |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Count all the consonants in all enemies’ names 3. Show consonants report | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| consonantsReport | String |  |
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| Nombre o identificador | R15: Generate report of the top 5 players in the game | | |
| Resumen | The program shows a list of the top 5 players in the game according to their score | | |
| Entradas | Nombre entrada | Tipo de dato | Condición de selección o repetición |
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| Actividades generales necesarias para obtener los resultados | 1. Show menu 2. Search the enemy that awards the most points when the player beats it 3. Show enemy report | | |
| Resultado o postcondición |  | | |
| Salidas | Nombre salida | Tipo de dato | Condición de selección o repetición |
| enemyPowerfulReport | String |  |
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