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**WETLAND – PROBLEM**

The client has asked a system solution that affords him to save the information for wetlands in Cali, with its respective information such as species that lives there and the events that have been realized there. The functional requirements that the solution must have are specified below:

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| Cliente | Dagma, CVC, Corpocuencas, Alcaldía de Santiago de Cali. |
| Usuario | * Dagma * CVC * Corpocuencas |
| Requerimientos funcionales | * RF1: Register a wetland. * RF2: Register a species in a wetland. * RF3: Register an event in a wetland. * RF4: Show, for each wetland, the number of maintenances in a specific year. * RF5: Show the information of all the wetlands registered. * RF6: Show the wetland with the least flora species. * RF7: Show the wetland with the most fauna species. * RF8: According to the name of a species, show in which wetlands it is present. |
| Contexto del problema | The client requests an informatic solution to solve the problem of save all type information and register of the wetlands present in the city, this includes the species that lives there and the events that have been realized there. |
| Requerimientos no funcionales | * The system must be as flexible as possible, in order to make the maintenance easier. * The system must work as fast and efficiently as possible. * The system must be secure enough to save, modify and show data or information. * The system must have an intuitive and modern interface. |

| Nombre o identificador | **RF1:** Register a wetland. | | |
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| Resumen | The system should allow to the user register a wetland, specifying its name, ubication zone (urban or rural), type (public or private), number of km^2, link of the photo and if it has been declared as a protected area. It’s worth say that Cali has 80 wetlands, 50 are urban and the rest rural. 15 of them are public. | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
| name | String | Doesn’t apply. |
|  | ubicationZone | char | **REPEAT:** If the user types an invalid char. |
|  | type | int | **REPEAT:** If the user types an invalid number. |
|  | numberKm  2 | double | **REPEAT:** If the user types something other than numbers. |
|  | urlPic | String | Doesn’t apply. |
|  | isProtected | int | **REPEAT:** If the user types something other than numbers. |
|  | villageName | String | **SELECTION:** If the wetland is a rural one. |
|  | neighborhoodName | String | **SELECTION:** If the wetland is an urban one. |
| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, register a wetland). 2. The system asks the user all the wetland attributes. 3. The user types all the wetland attributes. 4. The system takes those attributes and create a new wetland type object. 5. The system saves the wetland type object in the wetlands array in the controller. | | |
| Resultado o postcondición | The system shows up a success message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If all the information has been correctly entered. |

| Nombre o identificador | **RF2:** Register a species in a wetland. | | |
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| Resumen | The system should allow to the user register a species, specifying if it’s a flora or fauna species, its name, scientific name, if it’s a migratory species, its type (land flora, aquatic flora, bird fauna, mammal fauna or aquatic fauna) and in which wetland he/she wants to add the species. | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
| wichWetland | int | **REPEAT:** If the user chooses a wetland that isn’t registered. |
| faunaOrFlora | Char | **REPEAT:** If the user types an invalid char. |
|  | name | String | Doesn’t apply. |
|  | scientificName | String | Doesn’t apply |
|  | isMigratory | int | **REPEAT:** If the user types something other than integer numbers. |
|  | type | String | Doesn’t apply. |
| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, register a species in a wetland). 2. The system asks in which wetland the user wants to add the species. 3. The user chooses a wetland. 4. The system asks all the species attributes. 5. The user types all the species attributes. 6. The system creates a new species object with those attributes. 7. The system saves the new species object in the species array. 8. The system saves that species array in the respective wetland that is in the wetlands array. | | |
| Resultado o postcondición | The system shows up a success message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If all the information has been correctly entered. |

| Nombre o identificador | **RF3:** Register an event in wetland. | | |
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| Resumen | The system should allow to the user register events, specifying its date, owner or who made the event, the cost, a description and in which wetland he/she wants to add the event. | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
| wichWetland | int | **REPEAT:** If the user chooses a wetland that isn’t registered. |
| day | int | **REPEAT:** If the user types an invalid integer number. |
|  | month | int | **REPEAT:** If the user types an invalid integer number. |
|  | year | int | **REPEAT:** If the user types an invalid integer number. |
|  | owner | String | Doesn’t apply. |
|  | cost | double | **REPEAT:** If the user types something other than numbers. |
|  | description | String | Doesn’t apply. |
| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, register an event in a wetland). 2. The system asks in which wetland the user wants to add the event. 3. The user chooses a wetland. 4. The system asks all the event attributes. 5. The user types all the event attributes. 6. The system creates a new event object with those attributes. 7. The system saves the new event object in the events array. 8. The system saves that events array in the respective wetland that is in the wetlands array. | | |
| Resultado o postcondición | The system shows up a success message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If all the information has been correctly entered. |

| Nombre o identificador | **RF4:** Show, for each wetland, the number of maintenances in a specific year. | | |
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| Resumen | The system should allow to the user see how many maintenances has each wetland according to a specific year. | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
| year | int | **REPEAT:** If the user types an invalid integer year. |
| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, see the number of maintenances in each wetland in a specific year) 2. The system asks in which year the user wants to see the number of maintenances in each wetland. 3. The user types a year. 4. The system shows, for all the wetlands, the number of maintenances done in that year. | | |
| Resultado o postcondición | The system shows up the information message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If all the information has been correctly entered.  **SELECTION:** If there is, at least, one wetland registered. |

| Nombre o identificador | **RF5:** Show the information of all the wetlands registered. | | |
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| Resumen | The system should allow to the user see the information of all the wetlands that are registered, this includes its name, ubication zone, type, number of KM^2 and the number of each species that are there. | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
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| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, see the information of all the wetlands that are registered) 2. The system shows the user, for each wetland, the name, ubication zone, type, number of KM^2 and the amount of each species. | | |
| Resultado o postcondición | The system shows up the information message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If there is, at least, one wetland registered. |

| Nombre o identificador | **RF6:** Show the wetland with the least flora species. | | |
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| Resumen | The system should allow to the user see which wetland has the least amount of flora species. | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
|  |  |  |  |
| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, see which wetland has the least amount of flora species) 2. The system shows the user a message that includes the name of the wetland with the least flora species. | | |
| Resultado o postcondición | The system shows up the information message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If there is, at least, one wetland registered. |

| Nombre o identificador | **RF7:** Show the wetland with the most fauna species. | | |
| --- | --- | --- | --- |
| Resumen | The system should allow to the user see which wetland has the most amount of fauna species. | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
|  |  |  |  |
| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, see which wetland has the most amount of fauna species) 2. The system shows the user a message that includes the name of the wetland with the most fauna species. | | |
| Resultado o postcondición | The system shows up the information message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If there is, at least, one wetland registered.  **SELECTION:** If there is, at least, one fauna species registered in one wetland. |

| Nombre o identificador | **RF8:** According to the name of a species, show in which wetlands it is present. | | |
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| Resumen | The system should allow to the user search and see in which wetlands is registered a specific species type (land flora, aquatic flora, bird, mammal, aquatic). | | |
| Entradas | Nombre | Tipo de dato | Condición de selección o repetición |
| search | int | **REPEAT:** If the user types an invalid type of species option. |
| Actividades generales necesarias para obtener los resultados | 1. The user chooses an action (in this case, see in which wetlands is a specific species type) 2. The system shows the user a message that includes the name of the wetlands that has that species type. | | |
| Resultado o postcondición | The system shows up the information message. | | |
| Salidas | Nombre | Tipo de dato | Condición de selección o repetición |
| msg | String | **SELECTION:** If there is, at least, one wetland registered.  **SELECTION:** If there is, at least, one species registered in one wetland, according to the type entered by the user. |