PROBLEM SPECIFICATION

CUSTOMER	Icesi University, Dagma, CVC, Corpocuencas and the Mayor's Office of Santiago de Cali
USER	Wetlands Database Administrator
FUNCTIONAL REQUIREMENTS	• R1. Create a wetland • R2. Register a new species in the wetland • R3. Register an event in the wetland • R4. Report for each wetland, the amount of maintenance in a given year by the user. • R5. Display the name of the wetland with fewer species of flora. • R6. Given the name of a species, deploy the wetlands where it is located • R7. Display information for all our wetlands, including total species by type • R8. Display the name of the wetland with the largest number of animals (birds, mammals, and aquatics)
CONTEXT OF THE PROBLEM	A solution is needed to manage the wetlands information, being able to add new wetlands, species and events and make certain counts and reports based on the recorded data

FUNCTIONAL REQUIREMENTS ANALYSIS TABLE:

NAME OR IDENTIFIER	Create a wetland		
SUMMARY	It should be possible to create a wetland that contains the name, the location area and its location name, the type, number of km2, an image URL of the wetland and if it has is a protected area.		
INPUTS	Entry Name	Data type	Selection or repetition condition
	name	String	If it already exists, ask again
	location	Int	
	locationName	String	
	type	Int	
	area	Double	
	imageURL	String	
	protectedArea	Boolean	

	compliancePercentage	double	
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that display the menu and execute the option the user chose to create the wetland are called. • The user fills in the necessary information to create the wetland and the system validates the answers. • It is validated that it is the first time the name of the wetland is entered. • In the wetland array in the system, the wetland type object is created and saved there. • The user is informed that the wetland was created		
POSTCONDITION RESULT	A message saying that the wetland has been registered		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	

NAME OR IDENTIFIER	Register a new species in a wetland		
SUMMARY	The solution must be able to register a species with its name, scientific name, habitat name, if the species is migratory, and its type (terrestrial flora, aquatic flora, bird, mammal, aquatic).		
INPUTS	Entry Name	Data type	Selection or repetition condition
	wetLandName	String	If it doesnt exists, ask again
	name	String	If it already exists, ask again
	sciName	String	
	isMigratory	boolean	
	type	Type	
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that display the menu are called and execute the option that the user chose to register a species to a wetland. • The user fills in the necessary information to register the species in a wetland and the system validates the answers. • It is validated that the wetland to which the species is to be added exists. • It is validated that it is the first time that the name of the species is entered in the wetland. • It is validated that it is the first time that the scientific name of the species is entered in the wetland. • In the arrangement of wetlands in the system, the wetland in which the species is going to be stored is searched. • The species type object is created and saved in the species array in the desired wetland.		

	• The user is informed that the species was registered		
POSTCONDITION RESULT	A message saying that the specie has been registered		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	

NAME OR IDENTIFIER	Register an event in the wetland		
SUMMARY	The solution must be able to record an event with the date, who performs the event, the value, a description, and the type of event to be held (maintenance, school visits, improvement activities and celebrations)		
INPUTS	Entry Name	Data type	Selection or repetition condition
	wetLandName	String	If it doesnt exists, ask again
	eventDate	Date	
	hostName	String	
	value	double	
	description	String	
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that display the menu and execute the option the user chose to register an event to a wetland are called. • The user fills in the necessary information to register the event in a wetland and the system validates the answers. • It is validated that the wetland to which the species is to be added exists. • In the array of wetlands in the system, the wetland in which the event is to be saved is searched. • The event type object is created and stored in the event array in the desired wetland. • The user is informed that the event was registered		
POSTCONDITION RESULT	A message saying that the event has been registered		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	

NAME OR IDENTIFIER	Report for each wetland, the amount of maintenance in a given year by the user.
SUMMARY	The solution must be able to report given a year entered by the user, all the maintenance of each of the existing wetlands in that year

INPUTS	Entry Name	Data type	Selection or repetition condition
	year	int	
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that show the menu are called and execute the option chosen by the user to report the maintenance in the wetlands in a year. • It is validated that there is at least one wetland. • The user informs the system of the year for which he wants to make the report • The system counts for each wetland the number of maintenances that were created in that year • The number of wetlands that were created in that year is reported.		
POSTCONDITION RESULT	A message with the name of each wetland with its respective amount of maintenance in the consulted year		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	

NAME OR IDENTIFIER	Display the name of the wetland with fewer species of flora.		
SUMMARY	The system must calculate the wetland with the least amount of flora species		
INPUTS	Entry Name	Data type	Selection or repetition condition
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that display the menu are called and execute the option chosen by the user to report the wetlands with the least amount of fauna • It is validated that there is at least one wetland. • The system counts for each wetland the number of species of flora • It is calculated which is the wetland or wetlands with the least amount of flora species • The user is informed which is the wetland or wetlands with the least amount of flora species		
POSTCONDITION RESULT	A message that informs which is the wetland or wetlands with the least amount of flora species		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	

NAME OR IDENTIFIER	Given the name of a species, deploy the wetlands where it is located

SUMMARY	The system must locate the names of the wetlands that contain the species it is looking for.		
INPUTS	Entry Name	Data type	Selection or repetition condition
	nameSpecie	String	
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that show the menu are called and execute the option that the user chose to search for the wetlands in which a species is found. • It is validated that there is at least one wetland. • The user is asked the name of the species they are looking for • The system checks for each wetland the existence of that species and in the case of finding that it exists in a wetland, it accumulates the name. • In the case of finding the species in at least one wetland, the user is informed of the name of the wetlands in which the species is found.		
POSTCONDITION RESULT	A message that informs the user the wetlands names in which the species was found or that it wasn't found in any of the existing wetlands		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	

NAME OR IDENTIFIER	Display information for all our wetlands, including total species by type		
SUMMARY	The system displays on the screen all the information of each wetland such as its name, the location area and its location name, the type, number of km2, an image URL of the wetland and if it has is a protected area. Along with the count of each of the species of flora and wildlife		
INPUTS	Entry Name	Data type	Selection or repetition condition
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that show the menu are called and the option that the user chose to show all the information of the wetlands is executed. • It is validated that there is at least one wetland. • The system concatenates the information of each existing wetland • The information of each existing wetland is shown		
POSTCONDITION RESULT	A message with the information of the existing wetlands in the system		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	

NAME OR IDENTIFIER	Display the name of the wetland with largest amount of wildlife species		
SUMMARY	The system must calculate the wetland with the largest amount of wildlife species		
INPUTS	Entry Name	Data type	Selection or repetition condition
GENERAL ACTIVITIES NECESSARY TO OBTAIN THE RESULTS	• The methods that display the menu are called and execute the option chosen by the user to report the wetlands with the largest amount of wildlife. • It is validated that there is at least one wetland. • The system counts for each wetland the number of wildlife species • It is calculated which is the wetland or wetlands with the largest number of wildlife species • The user is informed which is the wetland or wetlands with the largest number of wildlife species		
POSTCONDITION RESULT	A message that informs which is the wetland or wetlands with the largest number of wildlife species		
OUTPUTS	Output Name	Data type	Selection or repetition condition
	out	String	