

Problem Identification and Requirements Analysis

Case Study:

Customer	Town hall
User	Administrator & User
Context of the problem	<p>The biodiversity COP will be held in Cali between October 21 and November 01, 2024. This international event focuses on the conservation of biodiversity and ecosystem services. The aim is to develop an application to learn about and navigate places with biological diversity and the communities that protect them in the Pacific region. For species, details such as name, department, area, type, opening date, photo, responsible community, necessary economic resources, and inhabiting species must be provided. As for the products, the name, type, if it is handmade and the percentage of natural products used are specified. For communities, it includes the name, type, representative, cell phone number, number of inhabitants, problems faced and the inventory of products offered. For places with biological diversity, information such as name, department, area in square kilometers, type, date of opening, photo, responsible community, necessary economic resources and inhabitant species are required. In addition, it should be allowed to add products to a community's inventory, specifying the name, type, whether it is handmade, and the percentage of natural products used.</p>
Functional Requirements	<p>RF1 Register Species</p> <p>RF2 Register Product</p> <p>RF3 Register Community</p> <p>RF4 Register Place</p> <p>RF5 Entering a Product into a Community</p> <p>RF6 Removing a Product from a Community</p> <p>RF7 Modifying Species Data</p> <p>RF8 Querying a Place's Information</p> <p>RF9 Consult the information of the communities by department</p> <p>RF10 Querying Community Information by Problem</p> <p>RF11 Consultation of the place with the largest number of species</p> <p>RF12 Query of the three largest places per square kilometer</p> <p>RF13 Administrative Single Menu</p>

	RF14 Single Menu Queries
Non-functional requirements	RNF1 Intuitive & User-Friendly Interface

Identifier & Name	[RF1-Register Species]		
Summary	<i>The system must allow the registration and storage of the species taking into account the name, whether it is flora or fauna, a photo (access path) so that it can later be added to a place. If the registration was successful, it will show a favorable message, otherwise it will show an error message and the user will have to enter the data again.</i>		
Tickets	Ticket name	Type of data	Condition Valid Values
	Name	String	
	Guy	String	You must select between whether it is Flora or Fauna
	Photo	String	A path to the image
Result or Postcondition	Once all data has been entered, a successful registration message should be saved and displayed		
Outputs	Departure Name	Type of data	Format
	Successful Message	String	Displayed when the record was successfully saved
	Unsuccessful Message	String	Displayed when there was an error in log storage

Identifier & Name	[RF2-Register Product]
Summary	<i>The system should allow the registration and storage of products that can be made by the communities and then added to each community, of which the name, the percentage of natural products used in their manufacture, the type (food or handicrafts) and whether it was made by hand (Yes or No) are kept. If the registration was successful it will show a favorable message, if not, the system will show an unsuccessful registration message and the user will have to enter the information again.</i>

Tickets	Ticket name	Type of data	Condition Valid Values
	Name	String	
	Percentage of natural products used in their manufacture	Double	xx.x%
	Guy	String	The user selects whether it's food or handicrafts
	Handmade	Boolean	The user selects whether the product was handmade or not
Result or Postcondition	Once all data has been entered, a successful registration message should be saved and displayed		
Outputs	Departure Name	Type of data	Format
	Successful Message	String	Displayed when the record was successfully saved
	Unsuccessful Message	String	Displayed when there was an error in log storage

Identifier & Name	[RF3-Register Community]		
Summary	<i>The system must allow the registration and storage of the communities, for this the name must be stored, the type of community if it is Afro-Colombian, indigenous or Raizal, the name and cell phone of the representative, the number of inhabitants, the major problems faced by the community (lack of hospitals, schools, etc.) and products that the community offers must be added. with a maximum of 20 products per community. If the registration was successful it will show a favorable message, if not, the system will show an unsuccessful registration message and the user will have to enter the information again</i>		
Tickets	Ticket name	Type of data	Condition Valid Values
	Name	String	
	Type of community	String	The user selects an Afro-Colombian, Indigenous, or Raizal community type
	Representative's Name	String	

	Representative's Phone Number	String	
	Number of inhabitants	Int	xxxx
	Bigger Problems	Array	Multiple issues can be selected
	Products They Offer	Array	It is selected from a list of products, the ones offered by the particular community
Result or Postcondition	Once all data has been entered, a successful registration message should be saved and displayed		
Outputs	Departure Name	Type of data	Format
	Successful Message	String	Displayed when the record was successfully saved
	Unsuccessful Message	String	Displayed when there was an error in log storage

Identifier & Name	<i>[RF4-Register Place]</i>		
Summary	<i>The system must allow the registration of places, saving information on the name, the department, the number of square kilometers, the type (if it is a protected area, national park or private area), the date of inauguration, photo of the place, community that cares for it, economic resources necessary for good care, the species that inhabit it and the amount for each species selected. If the registration was successful it will show a favorable message, if not, the system will show an unsuccessful registration message and the user will have to enter the information again.</i>		
Tickets	Ticket name	Type of data	Condition Valid Values
	Name	String	
	Name of the department	String	The user selects a department (Chocó, Valle, Cauca, etc.)
	Number of square kilometers	Double	xxKm
	Guy	String	The user selects a type of place (Protected Area, National Park or Private Area)

	Opening Date	Date	dd-mm-yyyy
	Photo of the place	String	Access to the image
	Community that cares for her	String	From the list of registered communities, the community belonging to the place is selected
	Economic Resources	Double	\$xxxxxxx
	Inhabiting Species	Array	From the list of species in the system, the species that inhabit the place are selected
	Number of species	Array	The quantity of each selected species is specified
Result or Postcondition	Once all data has been entered, a successful registration message should be saved and displayed		
Outputs	Departure Name	Type of data	Format
	Successful Message	String	Displayed when the record was successfully saved
	Unsuccessful Message	String	Displayed when there was an error in log storage

Identifier & Name	<i>[RF5-Entering a Product into a Community]</i>
Summary	<p><i>The system must allow the user to register the products offered by the different communities and thus they are stored in the database. For this to happen, in order to register a product, the following information is needed: name of the product, percentage of natural products used in its manufacture, type (whether food or handicrafts) and also whether it is handmade or not.</i></p> <p><i>In this way, the user enters the product information and in the event that any of the requirements is not correct, an "error" message will be shown to the user and it is enabled to re-enter the data correctly.</i></p>

Tickets	Ticket name	Type of data	Condition Valid Values
	Name	String	
	Percentage	double	The user is asked to enter the percentage of natural products used in manufacturing, as follows: 1-100%
	Type	String	You must select whether the type of product is food or handicrafts.
	Handmade	Boolean	You must indicate if your product is handmade or not, the answer is as follows: Yes/No
Result or Postcondition	Once all the data has been entered, a message must be saved and displayed		
Outputs	Departure Name	Type of data	Format
	Successful Message	String	Displayed when the record was successfully saved
	Unsuccessful Message	String	Displayed when there was an error in log storage

Identifier & Name	<i>[RF6-Removing a Product from a Community]</i>
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Summary	<p><i>The system should allow the user to remove products offered by different communities. In order for this to happen, in order to register a product, the following information is needed: Product name</i></p> <p><i>Thus, the user enters the name of the product to search for it in the database of this program, and thus it will be shown on the screen if the product is successfully deleted. In order for it to be deleted, it must be registered in the database, otherwise it will show an error for the user to re-enter correctly.</i></p>		
Tickets	Ticket name	Type of data	Condition Valid Values
	Community Name	String	You must enter the name of the community you wish to enter, and it is required that this name be previously registered, otherwise an error will appear.
	Name	String	<i>Must be a valid name previously registered in the database</i>
Result or Postcondition	Once entered, the program locates the product thanks to the information of its name, in case it exists, it eliminates it, otherwise it shows "error"		
Outputs	Departure Name	Type of data	Format
	Successful Message	String	Displayed when the record was successfully saved
	Unsuccessful Message	String	Displayed when there was an error in log storage

Identifier & Name	<i>[RF7-Modify Species]</i>		
Summary	<p><i>The system allows the user to modify the species according to the place in which it enters in this way. The user is also asked to enter the name of the place and then the name of the species previously recorded. After that, the system asks the user to enter the data they want to modify, whether it is the name, whether it is flora or fauna, their photo and the number of specimens in the place previously entered.</i></p>		
Tickets	Ticket name	Type of data	Condition Valid Values
	Name Place	String	<i>You must select a place which has already been</i>

			<i>registered, otherwise it will show an error.</i>
	Species name	String	<i>You must select a species which has already been registered, otherwise it will show an error.</i>
	Guy	String	You must select between whether it is Flora or Fauna
	Photo	String	A path to the image
Result or Postcondition	Once the species data has been modified, it will be saved back to the database and a message will be displayed to the user		
Outputs	Departure Name	Type of data	Format
	Successful Message	String	Displayed when the record was successfully saved
	Unsuccessful Message	String	Displayed when there was an error in log storage

Identifier & Name	<i>[RF8- Consult the information of a place]</i>		
Summary	<i>The system allows the user to consult the information of the places which have biological diversity, in this way it shows only outputs referring to the attributes of the place</i>		
Tickets	<i>It doesn't have tickets</i>		
Outputs	Ticket name	Type of data	Condition Valid Values
	Name	String	
	Name of the department	String	The department to which the place belongs is evident
	Number of square kilometers	Double	xxKm
	Guy	String	The type of place is shown to the user
	Opening Date	Date	dd-mm-yyyy
	Photo of the place	String	Access to the image
	Community that cares for her	String	It shows the community that cares for the place
	Economic Resources	Double	\$xxxxxxx
	Inhabiting Species	Array	The list of species that inhabit the place is displayed
	Number of species	Array	The quantity of each selected species is specified

Identifier & Name	<i>[RF9- Consult the information of the communities of a department]</i>
Summary	<i>The system allows the user to consult all the information of the communities of a department along with each of its attributes, without the need to repeat the names of the communities since each name is unique and distinctive.</i>

Tickets	<i>It doesn't have tickets</i>		
Outputs	Ticket name	Type of data	Condition Valid Values
	Name	String	
	Type of community	String	The user is shown the selected community type
	Representative's Name	String	
	Representative's Phone Number	String	
	Number of inhabitants	Int	xxxx
	Bigger Problems	Array	The selected issue is displayed
	Products They Offer	Array	The list of entered products is displayed

Identifier & Name	<i>[RF10-Consult the information of the communities by problem]</i>		
Summary	<i>The system allows the user to consult all the information of the communities by specific problems.</i>		
Tickets	Ticket name	Type of data	Condition Valid Values
	Problem Finding	String	<i>You must select an issue to query</i>
Result or Postcondition	Once you enter the search condition, the system will show you the communities that have that problem		
Outputs	Departure Name	Type of data	Format
	Name	String	
	Type of community	String	The user is shown the selected community type
	Representative's Name	String	
	Representative's Phone Number	String	
	Number of inhabitants	Int	xxxx

	Bigger Problems	Array	The selected issue is displayed
	Products They Offer	Array	The list of entered products is displayed

Identifier & Name	<i>[RF11- Consultation of the place with the largest number of species]</i>		
Summary	<i>The system allows the user to consult the places with the largest number of species</i>		
Tickets	Ticket name	Type of data	Condition Valid Values
Result or Postcondition	The system, after validating and sorting the places with the highest number of species, will show the user all the attributes of the places.		
Outputs	Departure Name	Type of data	Format
	Name	String	
	Name of the department	String	The department to which the place belongs is evident
	Number of square kilometers	Double	xxKm
	Guy	String	The type of place is shown to the user
	Opening Date	Date	dd-mm-yyyy
	Photo of the place	String	Access to the image
	Community that cares for her	String	It shows the community that cares for the place
	Economic Resources	Double	\$xxxxxxx
	Inhabiting Species	Array	The list of species that inhabit the place is displayed
	Number of species	Array	The quantity of each selected species is specified

Identifier & Name	<i>[RF12- Consultation of the three largest places per square kilometer]</i>		
Summary	<i>The system allows the user to check which are the 3 largest places per square kilometer</i>		

Tickets	Ticket name	Type of data	Condition Valid Values
Result or Postcondition	The system, after validating and sorting, will provide information on three places that are the largest per square kilometer		
Outputs	Departure Name	Type of data	Format
	Name	String	
	Name of the department	String	The department to which the place belongs is evident
	Number of square kilometers	Double	xxKm
	Guy	String	The type of place is shown to the user
	Opening Date	Date	dd-mm-yyyy
	Photo of the place	String	Access to the image
	Community that cares for her	String	It shows the community that cares for the place
	Economic Resources	Double	\$xxxxxxx
	Inhabiting Species	Array	The list of species that inhabit the place is displayed
	Number of species	Array	The quantity of each selected species is specified

Identifier & Name	<i>[RF13-Single Administrative Menu]</i>		
Summary	<i>When the system starts, it will show a main menu in which it will have the "administrative panel" section which allows the managed user to choose between the different administrative operations (register, update and delete) after authenticating.</i>		
Tickets	Ticket name	Type of data	Condition Valid Values
	User	String	<i>Be compatible with the user stored in the system</i>
Result or Postcondition	The system, after validating that the user is found, will show you the menu of valid options for your user type.		
Outputs	Departure Name	Type of data	Format

	1) Enter a Community.	Int	
	2) Enter a Place, the name must be unique.	Int	
	3) Entering and/or removing a product from a community.	Int	
	4) Bringing a species into a place.	Int	
	5) Modify the species data at a location.	Int	
	6) Creation of test cases.	Int	

Identifier & Name	[RF14-Single Menu Queries]		
Summary	When the system starts, it will show a main menu in which you will have the "administrative panel" section and the consultation options, which can be accessed by any user without the need to authenticate or have a user in the system		
Tickets	Ticket name	Type of data	Condition Valid Values
Result or Postcondition	When the system starts, it shows the main options in which the user can choose the different queries		
Outputs	Departure Name	Type of data	Format
	1) Administrative Panel	Int	
	2) Consult the information of a place, for which you must display its attributes and photo.	Int	

	3) Consult the information of the communities of a department, without repetition show the name of the community.	Int	
	4) Consult the information of the communities whose problems are: that they lack a hospital or that they lack a school.	Int	
	5) Consult the name of the place with the largest number of species.	Int	
	6) Check out the three largest places per square kilometer.	Int	