Problem Identification and Requirements Analysis

Case Study :

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Customer	ICESI
Users	Project Management, Process Transformation and Improvement, Knowledge Management and Process Documentation.
Functional Requirements	RF1-Request Registration RF2-Area Registration RF3-Registration of collaborators RF4-Update Request Status RF5-Knowledge Project Management Project Registration RF6-Process Transformation/Improvement Project Registration RF7-Project Management (Project Completion) RF8 - Display Project Information by Date RF9-Consult detailed information about a project RF10-Consult the efficiency of a transformation and improvement collaborator RF11-Consult the efficiency of a given transformation and improvement project RF12-Querying the Efficiency of a Request RF13-Report number of projects of each type RF-14-Report Number of Projects of Each Priority RF15-Report on the number of projects led by each collaborator in the area

	RF16-Report Number of Requests Received and Handled During a Given Month RF17-Test Cases
Context of the problem	Icesi University requires a Software that implements a solution that optimizes the reception, monitoring and management of all work requests, guaranteeing greater efficiency in the response to customers in order to achieve an improvement in the organization in terms of Transformation and Improvement of institutional processes.
Non-functional requirements	Maintainability

Identifier & Name	***[RF1-Request Log]***		
Summary	*The request log allows the user to enter a request for a project with the registration date, subject, description, responsible person, and project area. The aim is for the system to group this data that will allow each of the areas to take these requests into account and generate a response based on their previous information. It should be noted that you must comply with one of the established parameters, since in the case of not complying with any of them, it will not be allowed to send the request to the established area.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Description	String	Enter a brief description of the request being made along with a 100-word limit
	Applicant Area	String	Indicate the area of the person responsible for the request (requester)
	Responsible	String	Enter the name of the person receiving the request and that name cannot exceed 10 characters

Outcome or post-condition	The system receives the respective information of each of these attributes, generating a successful record of the request and archiving each of the features of this information in the database		
Outputs	**Departure Name**	**Type of data**	**Format**
	State	Int	*The request is recorded with 0. Considering that 0 = "Pending"*

Identifier & Name	***[RF2-Area Registration]***		
Summary	*The system must allow you to enter the area to which the received request corresponds.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Department	String	*Select the office to which it belongs*
	Area Name	String	*Enter the name of the area*
	Code	String	*Enter the university's internal area code, unique to the university*
	Collaborator responsible for the area	String	*Select the name of the responsible collaborator*
Outcome or post-condition			
Outputs	**Departure Name**	**Type of data**	**Format**
	Aggregate	String	Message notifying you that it has been successfully added

Identifier & Name	***[RF3-Contributor Registration]***		
Summary	*The system allows the entry of the following data of the collaborator who is responsible for the applicant's area. This allows the system to manage the employee's information to keep them aware of the request of the area to which they were entrusted*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Identification number	String	*Enter the 10-digit ID number*
	Full name	String	*Enter the name and surname corresponding to the collaborator*
	Institutional e-mail	String	*You must enter the institutional email with the required extension Example: "text" @icesi.edu.co*
	Extension	String	*Enter the extension number*
Outcome or post-condition	It is saved to the database and the created record is displayed		
Outputs	**Departure Name**	**Type of data**	**Format**
	Registered Collaborator	String	Message notifying that the information has been successfully added

Identifier & Name	***[RF4-Update Application Status]***

Summary	*The system must allow you to change/update the status field of a request, so that you can know in which process a request is going, if it has been handled, rejected or if it is still pending to be handled.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	State	Int	*(1) Register as a project* *(2) Reject* *(3) Postergar*
Outcome or post-condition	If the status is entered with (1) Register Project or (2) Reject the system, it will save the date on which the status is made. If the status is entered in (1) Register Project, the system will redirect the user to register the project data. If (3) Procrastinate is entered, the system will leave it in status (0) Planned and the date will not be saved.		
Outputs	**Departure Name**	**Type of data**	**Format**
	Date of management	Date	*Dd-mm-yyyy*
	New Status	String	"The status of the project is""

Identifier & Name	***[RF5-Knowledge Project Management Project Registration]***		
Summary	*The registration of this type of project, such as Knowledge Project Management, emphasizes generating a priority to the project according to what is considered, as well as assigning it a specific impacted community along with the name of the process to be documented. This is to correctly register the project and be able to save it in the database if it meets each established requirement, otherwise the user is asked again to correctly insert the data.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**

	Priority	String	*Loud* *Stocking* *Casualty* *Urgent*
	Process Name	String	*Enter a suggested name of the process based on what is to be documented*
	Impacted Community	String	• *Students* • *Teachers* • *Administrative*
	Project Leader	String	*The project leader must enter his/her identification number in order to be assigned a project. In addition, the identification number cannot exceed 10 characters e.g.: xxxxxxxxxx*
Outcome or post-condition	After assigning the priority, along with the name of the process, the impacted community, and the designated project leader that allows monitoring and control of the project so that the program then archives this information in order to classify the type of project present		
Outputs	**Departure Name**	**Type of data**	**Format**
	Aggregate	String	Message notifying you that it has been successfully added

<table>
<tr><td>Identifier & Name</td><td colspan="3">[RF6-Process Transformation/Improvement Project Registration]</td></tr>
<tr><td>Summary</td><td colspan="3">The registration of this type of project, such as process transformation/improvement, focuses on designating a code for the process that will be carried out in the project and an estimated closure date set according to the designated priority. With this information, the system allows the system to group the data of this type of project so that the leader of the area of this project can manage it efficiently.</td></tr>
<tr><td rowspan="4">Tickets</td><td>Ticket name</td><td>Type of data</td><td>Condition Valid Values</td></tr>
<tr><td>Priority</td><td>String</td><td>Loud
Stocking
Casualty
Urgent</td></tr>
<tr><td>Process Code</td><td>String</td><td>Enter a number of digits that will be taken as the project's process code when entering. Cannot exceed 6 digits ERexample:123456</td></tr>
<tr><td>Project Leader</td><td>String</td><td>The project leader must enter his/her identification number in order to be assigned a project. In addition, the identification number cannot exceed 10 characters e.g.: xxxxxxxxxx</td></tr>
<tr><td>Outcome or post-condition</td><td colspan="3">After assigning a code to the process to be improved, assigning a priority to that project, and designating a project leader to be in charge of monitoring and control, it allows the program to calculate the output of the closing date in an estimated way based on the data that was previously entered</td></tr>
</table>

Outputs	**Departure Name**	**Type of data**	**Format**
	Estimated Closing Date	String	A message that notifies the estimated project closure date when analyzing the priority of the project. Enter only in this order: dd/mm/yyyy

Identifier & Name	***[RF7- Project Management (Project Completion)]***		
Summary	*In project management, the user is allowed to enter the project closure date, as the system can then look at the extent of the management of the area. As long as you enter the data in the way it was specified by the program.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Actual Close Date	Date	*In this entry, the user is allowed to enter the actual project closure date* *Ejemplo: dd/mm/aaaa*
Outcome or post-condition	*After entering the closing date, the system records this data and then considers it in quality analysis for each part of the project (area).*		
Outputs	**Departure Name**	**Type of data**	**Format**
	Registration	String	Message that the closing date was successfully recorded

Identifier & Name	***[RF8- Display Project Information by Date)]***		
Summary	*In displaying the project information according to date, the user is allowed to display the last 5 projects assigned to each collaborator in matrix form depending on the date entered by him, in order of priority and estimated delivery date. In addition, priority is represented by the initial (A-U-M-B). The consultation date is used to observe such projects in force from the date entered to the present.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**

	Consultation date	Date	*In this entry, the user is allowed to enter the date of consultation* *Ejemplo: dd/mm/aaaa*
Outcome or post-condition	*After entering the query date, the system brings with it the last 5 projects assigned to each collaborator with their respective ID. Likewise, the estimated delivery date of each of the projects is brought with its priority in the form of an initial one. And all of this data will be displayed in a matrix way,*		
Outputs	**Departure Name**	**Type of data**	**Format**
	ID	String	Display the collaborator ID
	Priority	String	Displays the priority of the last 5 projects for the collaborator
	Date	Date	Displays the estimated closing date for each of the projects

Identifier & Name	***[RF9- Consult detailed information about a project)]***		
Summary	*When consulting detailed information about a project, the user is asked to enter the project identifier code so that the project information is displayed. In this case, where the user enters a code that is not registered, it will not allow him to make such a query.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Code	String	*In this entry, the user is allowed to enter the internal code of the project*
Outcome or post-condition	*After entering the internal code, the system searches for that project related to the entered code. If it finds it, it will display the detailed information of the project, and if not, it will display an error message. In addition, it will only show information related to the type of project, either Knowledge Management or Transformation and Improvement*		
Outputs	**Departure Name**	**Type of data**	**Format**

	Project Name	String	Displays the name of that project
	Priority	String	Shows the priority of the project
	Expected Closing Time	Date	Displays the estimated closing date for each project
	Project Leader	String	The name and ID related to the project leader are displayed
	Suggested Process Name	String	The suggested name of the process to be handled is displayed
	Impacted Community	String	It shows the community that will be impacted by the project
	Guy	String	The type of management project is shown, which is represented by standardization, documentation, and optimization
	Code to Improve	String	The code for the process to be improved is displayed
	Closing Date	Date	The estimated project close date is displayed

Identifier and name	***[RF10- Query the efficiency of a transformation and improvement collaborator]***		
Summary:	*When consulting the efficiency of a transformation and improvement collaborator, the user is asked to enter the ID of said collaborator so that its efficiency is displayed accompanied by its name. To calculate the efficiency of the collaborator, the number of current projects of the month is taken into account and this data is divided by the number of projects led by that collaborator. In such a case where such an ID does not exist, you will be shown an error message.*		
Entry	**Entry name**	**Type of data**	**Condition Valid Values**
	ID	String	*In this entry, the user is allowed to enter the ID of the collaborator whose efficiency they want to see*
Outcome or post-condition	*After entering the collaborator ID, the system calculates the collaborator's efficiency based on the number of current projects in the month divided by the number of projects led by the collaborator*		
Outputs	**Output name**	**Type of data**	**Format**
	Name	String	Displays the name of the collaborator related to their ID
	Efficiency	String	Shows the efficiency percentage of that collaborator
Identifier and name	***[RF11- Consult the efficiency of a given transformation and improvement project]***		
Summary:	*When consulting the efficiency of a given project, the user is asked to enter the name of the project so that the system can calculate the efficiency of the project, as follows: The system takes into account the estimated closing date which is given according to the priority that the project had and from this the actual closing date is subtracted. so that this result is then divided by 100 and then subtracted by 1.*		
Entry	**Entry name**	**Type of data**	**Format**
	Project Name	String	*In this entry, the user is allowed to enter the name of the project*
Outcome or post-condition	*After entering the name of the project, the system searches for the project to extract its estimated closing date and compare it with the actual date, then divide it by 100 and subtract by 1*		
	Output name	**Type of data**	**Format**

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Identifier & Name	***[RF12- Querying the Efficiency of a Request]***		
Summary	*Querying the efficiency of a request asks the user for a code related to the request to be displayed. The efficiency of the request is then calculated. The efficiency of a request is calculated as follows: The system takes the assignment date which is generated when registering the request and subtracts from it the result of the sum of 20 days with the registration date, which is the moment when a request is defined as either accepted or rejected. After calculating this value, it is divided by 100 and subtracted by 1*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Code	String	*In this entry, the user is allowed to enter the code related to the request*
Outcome or post-condition	*After entering the code, the system searches for the request to extract the date of assignment and its date of registration, and then calculate its efficiency*		
Outputs	**Departure Name**	**Type of data**	**Format**
	Efficiency	String	The user is shown the efficiency percentage of a request

Identifier & Name	***[RF13- Report number of projects of each type]***		
Summary	*In project management, the user is allowed to enter the project closure date, as the system can then look at the extent of the management of the area. As long as you enter the data in the way it was specified by the program.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Actual Close Date	Date	*In this entry, the user is allowed to enter the*

			actual project closure date *Ejemplo: dd/mm/aaaa*
Outcome or post-condition	*After entering the closing date, the system records this data and then considers it in quality analysis for each part of the project (area).*		
Outputs	**Departure Name**	**Type of data**	**Format**
	Registration	String	Message that the closing date was successfully recorded

Identifier & Name	***[RF14- Report number of projects in each priority]***		
Summary	*The system should show a report of the number of projects based on the priority they have, in this way the user enters the priority of which the number of projects related to it will be shown.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Priority	String	*Loud* *Stocking* *Casualty* *Urgent*
Outcome or post-condition	*The system searches for projects related to the priority type entered by the user. After that, the system counts the projects that meet this condition*		
Outputs	**Departure Name**	**Type of data**	**Format**
	Project Quantity	Int	Displays the number of projects that match the priority entered by the user

Identifier & Name	***[RF15-Report on the number of projects led by each collaborator*]**		
Summary	*The program must show a report on the number of projects led by each collaborator, measuring their efficiency, based on the number of projects led in force during the month versus the total projects in force in the month.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**

	Collaborator Area	String	*Enter the area for which the collaborator is responsible*
	Identification number	String	*Enter the 10-digit ID number*
	Month	Date	*In this entry, the user is allowed to enter the month for which they wish to* consult *Example: mm*
Outcome or post-condition	After entering the month for which we want to know the efficiency of the collaborator, the system will consult all the current projects for that month and, with the entry of the collaborator id of the selected area, it will search for the projects led in their name during the month and calculate the efficiency of that collaborator.		
Outputs	**Departure Name**	**Type of data**	**Format**
	Employee Efficiency	String	Message showing the percentage of projects led by the collaborator out of the number of current projects for the month Format : -% -/-

Identifier & Name	***[RF16- Report number of requests received and handled during a given month]***		
Summary	*In the report of the number of requests received and managed during a month, the system must show a report of the requests received and managed during a given month, so the user will enter the related month in order to show that amount.*		
Tickets	**Ticket name**	**Type of data**	**Condition Valid Values**
	Month	Date	*In this entry, the user is allowed to enter the month for which they*

			want to see the number of requests *Size: mm*
Outcome or post-condition	*After entering the month, the system searches for requests that have in common the month entered by the user. The system then counts each of these requests that meet this requirement*		
Outputs	**Departure Name**	**Type of data**	**Format**
	Request Quantity	Int	The user is shown the number of requests recorded and handled during that month

Identifier & Name	***[RF17-Test Cases]***		
Summary	*In some cases, it is used to register predetermined information in order to test each of the functional requirements, but before executing this option, the system must verify if it has registered at least four collaborators in the area of transformation and improvement of institutional processes. Otherwise, it will display an error message*		
Outcome or post-condition	*The system verifies the existence of the four collaborators, after which in any case where the condition is met, predetermined information is automatically saved. Otherwise, it will display an error message.*		
Outputs	**Departure Name**	**Type of data**	**Format**
	Message	String	A message is displayed to the user based on the fulfillment of the condition. Either "Successfully Generated Test Case Information" or "Please Enter the 4 Institutional Transformation and Improvement Collaborations"