UNIVERSITÀ DEGLI STUDI DI PADOVA

DIPARTIMENTO DI INGEGNERIA DELL'INFORMAZIONE

Foundations of Databases A.Y. 2021-2022

Master Degree in
ICT for Internet and Multimedia

Homework 1 – Requirements Analysis

Group Name: RD
Project: non profit organizations

Last Name	*First Name*	*Student Num*
SHOFI	ALFI BAQIATUS	2041377
LOKO	ISIDORUS MAU	2040498
PRAVISHI	GAURI	2041448
MURDAYAN	YEKATERINA	2049529
ATES	HAKAN	2049550
ZIU	VANESA	2050797
PAJAJ	XHEINA	2055575
CICEK	KADER	2049526
OZTURK	MEHMET	2049527
ZARE	MOHAMMAD MEHDI	2041379

Objectives

An international non-profit organization that is working towards many social causes in over 74 countries worldwide with many chapters in each country. Each chapter is handling various projects which are funded by the organization with the help of benefactors (Lay Collaborators). The objective of the organization is to collect the data from branches all over the world, analyze it according to the need, and based on the result, decide further operation and the distribution of funds. The collected data as well as the output data should be stored in a database, to achieve efficient management.

Interview

An interview had been done to define the project requirements. In particular, we interviewed one of the financial department teams to understand the organization's objective and the nature of the data to be collected and stored.

Users and Stakeholders of the System

The users of the system are:

- Generalate leadership team: will access all the input data, analyze it and decide to approve or reject the project
- Financial team: Will input data, store it according to the specific feature of the project, present it to the coordinators, and generalate and update the status
- Coordinators team: Review the data and categories it according to the need
- PRM (Province, Region, Mission) leadership team: input the data if they need the application project to get subsidize from generalate.

Natural Language Sentences

An international non-profit organization is presenting the need to own a general management system, to better manage different projects coming from its subsidiaries across the world. The information inside each project's report is very crucial to perform the needed actions for dealing with the specific application. Since the company is currently providing social services like accommodation, schooling, medical centers, religious activities and financial support, the data they are working with is of a big importance to their job. They are trying to carry out things like: where will the aid go, how much help will be provided, who will manage this task, who will work under them, and how urgent it is. The objective of the organization is to collect the data from branches, analyze it according to the need and based on the result to decide for further operations and the amount of aid will be decided. The input data, as well as the output data should be stored in a database so that if a similar situation is encountered in future projects, immediate assistance can be provided.

The organization wants to develop a system which will hold the information for each project in real time and continuously. They are proposing the development of a global application, which will be easily accessed from each subsidiary any time they want. This new way of working is very essential in reducing a lot of manual work they are dealing with every day and at the same time, it will provide an extra income by reducing the number of people working, providing a more secure approach to their very sensitive information for their work and a more organized work to process each project in the most optimal period with the right priority and efficiency.

Using this application, a specialized team for each branch will insert in the database together with an authorized person who will stand by them and lead them, once they are assigned to a project, the data they need will be immediately given to them through the application for the proposals, offers, presentations and development process they will make. This information will appear in real time in a request form to the Generalate office, which is responsible for further inspections of the project and the evaluation of it. The

responsible instance of the Generalate (Generalate Leadership Team, Financial team, Coordinators team), after checking the details they are responsible for, once a decision is taken, will update the status of the request on the system and this change will immediately appear on the system of the corresponding branch, which has previously sent the request.

During the insertion, data of each project is stored using a set of variables, each one corresponding to a specific feature of the project, identified by a unique TAG name. Projects are very different from each other, but the organization will generate a very well-built report for each one of them, to make it easy to insert data in the database. The report will consist of the same variables, descriptive ones, or Yes/No ones for an easier implantation. A particular project provides a set of values, one for each variable. The reason why branches have to make this application is the fact that they cannot afford the expenses of a specific activity or can partially afford it. So, they are asking from the main branch for full or partial economic support to do their job with more efficiency.

Each request inserted will be marked with a unique tag and with a status, the status which might be pending, working, confirmed, cancelled. The request can be edited if its status is marked as pending. In another case it will not be able to get edited. Once a request is confirmed or cancelled, the documentation will not be deleted. It is saved in the database with its own unique tag and status. They will be saved on the database for further inspections and to understand more clearly how to act if faced with a similar situation in the future. Also, the reason behind this is the fact that the organization will still have to monitor how the project will be implemented. This will be done using some reports that each branch will deliver from time to time with real time to the organization. It is very important to mention that there is no priority in dealing with the requests. all the zones like Latin America, Africa, Asia, and Europa are equally treated.

The system they are asking for, will need to be accessed by 4 groups of users. Therefore, it will have 4 roles in it.

- The first users, who will add the project on the system are the employees of the Branch Office. The Branch Office will apply a post request and perform an insert action. They can also delete or update the project's request as long as the status of it is still 'pending'. Once the status of the request will be changed to 'working' they will not be able to perform any change or delete. They will be able to perform requests, in order to look at the status of the project all the time.
- The second users who will access the project are the employees of the Financial Team. The Financial Team is responsible to perform an update request, after performing a get request, in order to fill in the part of the report corresponding to the financial plan.
- The third users of the system are the employees of the Coordinators team. The Coordinators Team will have a view-only role, so they will be able to perform only a get request.
- The fourth and last users are the employees of the Generalate Main Office. This office will have the main role because they will decide whether the project is going to be accepted or rejected. They will perform a get request and then an update one in order to update the status of the project.

For each different project, there will be a well-built report which will hold every information related to the project. It will include the following information :

- Area will be used to show the region where request comes from in detail in the report. In this way, the area to be intervened can be seen more clearly.
- Branch Name will be used to determine which coordinator team the report will go to. This will prevent confusion between the coordinator teams.
- Person in charge, this will be an area that will be used to store information about who prepared the report and who to contact in the database.
- Date of the request, used to specify the date the request was received. In this way, it can be checked whether the requests are in priority or not by historical sorting.
- Date of status will be added to show what status the report is in and to show when it changed. So that the officer reading the report can easily see the status of the report with changes and dates.

- Status is variable used to show the current status of the report. In this way, it can be easily seen whether it was approved, rejected or in the sending phase .
- Deadline is a variable that should be added to the report to show the deadline by which the project should be implemented.
- Description of an input where we can easily see the content of the report and its specific explanations. So that the coordinators who read the report can easily decide what will happen to a project.
- Type will be added as an entry that will indicate the type of department the report will go to. In this way, it will be easily seen which coordinator's field the report will go to.
- Feedback will be an area for feedback on why the report was rejected or approved or pending. Thus, a cause-effect relationship can be drawn for future projects or the current situation.
- Budget will be an area where the maximum and minimum budgets to be given to the project will be seen.In this way, the finance department will be able to see very easily what and how much budget they will set for the projects.

Filtered Sentences

An international non-profit organization that is working towards many social causes needs a database to store the different datas of the project. The objective of the organization is to collect the data from branches, analyze it according to the need and based on the result to decide for further operations and the amount of aid will be decided.
This crucial information will be helded in real time and continuously and it will appear in real time in a request form to the Generalate office. The responsible instance of the Generalate once a decision is taken, will update the status of the request on the system and this change will immediately appear on the system of the corresponding branch, which has previously sent the request. Data of each project is stored using a set of variables, identified by a unique TAG name. The report will consist of the same variables, descriptive ones, or Yes/No ones for an easier implantation. Each request inserted will be marked with a unique tag and with a status, which might be pending, working, confirmed, cancelled. The organization will monitor how the project will be implemented by using some reports that each branch will deliver from time to time within real time to the organization.

The system they are asking for, will need to be accessed by 4 groups of users. Therefore, it will have 4 roles in it.

- **The branch office users**: They will apply a post request and perform an insert action. They can also delete or update the project's request. They will be able to perform get requests, in order to look at the status of the project all the time.
- **The Financial Team**: users who are responsible to perform an update request, after performing a get request, in order to fill in the part of the report corresponding to financial plan.
- **Coordinators**: who will have a view-only role, so they will be able to perform only a get request.
- **Generalate Main Office** This office will have the main role because they will decide whether the project is going to be accepted or rejected. They will perform a get request and then an update one in order to update the status of the project.

For each project will be a report containing information regarding each field of the project, like:

- **Area** , shows the region and the province where the project will be located
- **Branch name** , Determine which coordinator team should deal with each specific project
- **Person in charge** - Contacts of the person who completed the report
- **Status** - Current status of the project

- **Date of the request** - Where the project has started to emphasise the importance of the requests
- **Date of the status** - to show when the status has changed
- **Deadline** - the date by which the project should be implemented
- **Description** - where we can see specific explanations of the project
- **Type** - to indicate the type of the department that the report will go to
- **Feedback** - an area that will show either that the project is approved or rejected
- **Budget** - where the maximum and minimum amount of budget for the project can be seen

Term Glossary

Term	Description	Synonyms	Connection
User	People who can access the database system	Members, Leaders, Teams, Stakeholders,	Financial Office, Branch office, Coordinator Office and Generalate Main Office, TAG.
Branch Office	The employees of the branch office that will insert the request in the system	Branch Team	User, Proposal, Report, Project, Financial Office, Generalate, , TAG, Deadline and Budget.
Financial Office	The employees of the main office responsible for the budget	Financial Team	Project, Branch Office, TAG, Budget, Funds, and Generalate
Coordinators Office	The employees of the main office responsible to define the type of the project	Coordinators Team	Branch Office, Generalate Main Office, Type, TAG, Report, Proposal.
Generalate Main Office	The decision makers for the project evaluation	Generalate Leadership Team, Generalate	Project, Proposal, Branch Office, Financial Office, Coordinators Office, Branch, TAG, Funds, Deadline, Budget, Report, and Deadline.
Branch	The local offices of the organization, other than the main office, where the same activities are conducted.	Local office	Branch Office, Area
Proposal	The request from the branch for undertaking a particular project.	Offer, Application	Generalate Main Office, Branch Office, Coordinators office, Type and TAG
TAG	The name assigned to a variable to be monitored.	Property, token, Unique ID.	Users and Reports
Funds	The amount of money available that has been raised through the benefactors.		Generalate, Benefactors
Deadline	Date for requesting projects and status of Status change		Generalate team, Province team, Region team, Mission team, financial team
Area	The site where the projects are being proposed or are in progress or have been completed.		Project, Type, and Proposal.

Budget	The maximum or minimum amount of money needed for the project	Project Site	Proposal, Project, Generalate Main Office, Financial Office, Branch Office.
Type	The classification of a project based on the field of interest	Field or classification	Coordinators Office, Project, Proposal, Branch Office and Budget.
Report	The physical document that describes the details of the project		Generalate Main Office, Project

Functional Requirements

The main function of the system is to hold all the information for the particular project.

- Authentication of users and their roles.
  - Each user can login with their email-IDs and to access the database.
  - Each user has a specific token that they have generated the first time they registered on the system and they will need to provide it each time they attempt to change the data.
- The data of the request.
  - The exact time in the datetime format that the request was submitted.
  - The information of the user who made the request.
- The project ID, a unique ID associated with each project.
  - The area where the request comes from. The detailed information regarding the country, the city and if possible, the zip code.
- The branch information.
  - The branch location.
  - The branch manager.
  - The person in-charge for the specific project and his contact details.
- Project Information.
  - The deadline of the project, specifying the latest day of starting the project implementation.
  - The type of the project, specifying what the project is dealing with. The organisation deals with different projects that might be of different social activities like housing, hospitality services, religious support.
  - The budget needed by a particular project to be implemented. Here they will inform about the part of the funding that they can afford (if they can) and the part of the funding that they need from the organisation.
  - The description of the project which gives a brief explanation about the background of the problem that needs to be solved.
  - The target community that will benefit from the project.
  - The duration of the project. This tells about the total time a project need to be completed within.

  The next function of this system is to manage the login operations and to provide different interfaces as per their specific roles in the organisation.
- An employee from the branch responsible office, should be able to:

  - Insert data about the specific project.
  - Update/delete the data as long as the status of the request is still pending.
  - Check the request all the time to see whether there is any update in the status of the request.
  - Check the feedback uploaded by the decision-making office of every worked-on request.
- An employee from the Financial Office, should be able to :
  - Check the budget data of the specific project.
  - Update the data by filling in some financial indicators.
- An employee from the Coordinators team, should be able to :
  - Check only some specific data from the project like the type of project.
- An employee from the Generalate Main Office, should be able to :
  - Check all the data of the project.
  - Update the status of the project.
  - Add feedback for each accepted or rejected project.

Non-Functional Requirements

- The system must have a user-friendly web interface.
- The system must provide periodic backup of the files to avoid loss of data.
- The system must provide a fast loading, each page must load within 2 seconds.
- The system must provide a maximum file size for storage efficiency.
- The system must provide a common language.

Non-Functional Requirements

- The system must have a user-friendly web interface.
- The system must provide periodic backup of the files to avoid loss of data.
- The system must provide a fast loading, each page must load within 2 seconds.
- The system must provide a maximum file size for storage efficiency.
- The system must provide a common language.

Constraints

The Database application should satisfy the following constraints:

- Be implemented with PostgreSQL.
- The system must provide interface implemented using css, html, javascript and Jquery.