# 1. Executive Summary

1.1 Project Overview

Describe this project or product and its intended audience, or provide a link or reference to the project charter.

Our project's aim is to create a software application to solve the technical issues for a kindergarten in Tirana. The software's name is ABC, same as the kindergarten, and its main idea is to provide technological help to the kindergarten administrator, employees and parents of children, to fix all the communications bugs that exist within the business. In the front end the administrator or the employee and parents who will have permission will see the page created with JavaScript /Bootstrap or JSON and will access to each of the child's date like his name, age, parent contact and any detail related with the monthly payment or his advance through the time he has been there. On the back end we will work with PHP technology and all the data will be saved in a specific database. This will provide help to the kindergarten owner, administrator, economist, employee or people from human resource that work there and also the parents of the children. Based on the economic research we will do for the kindergarten, every problem the audience can't get through is our project aim to solve.

A visual representation would be:
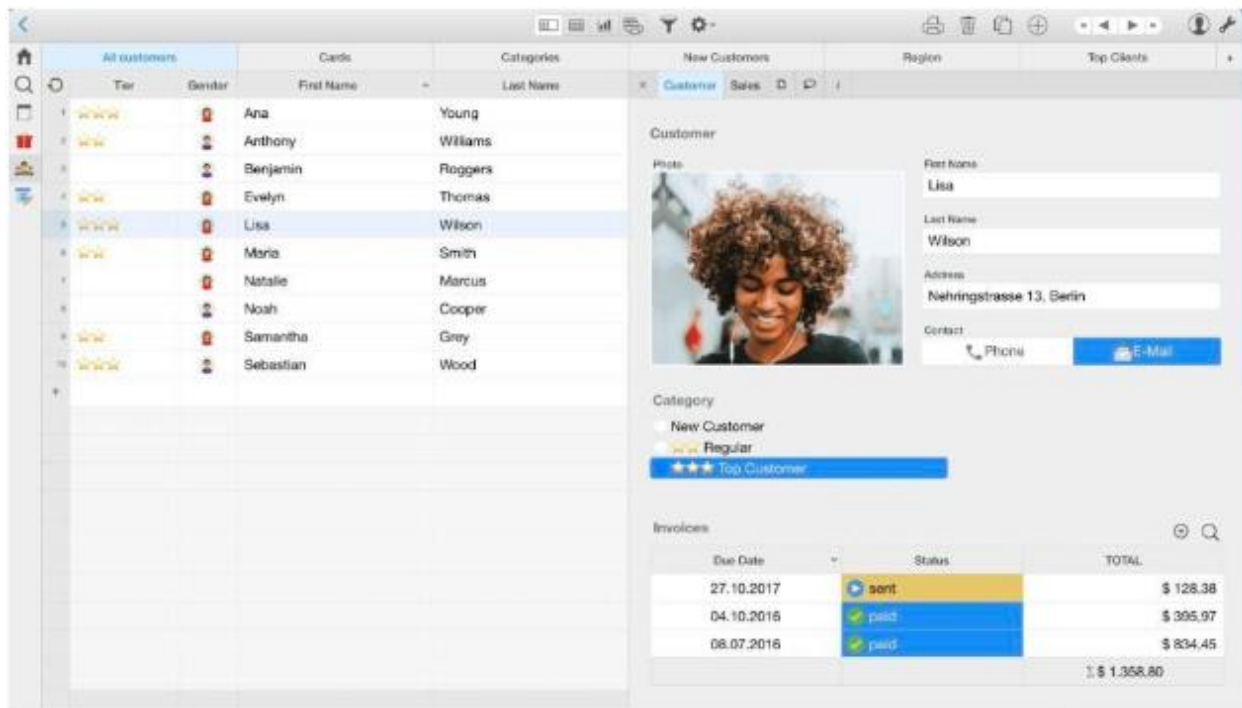
1.2 Purpose and Scope of this Specification

Describe the purpose of this specification and its intended audience.   Include a description of what is within the scope what is outside of the scope of these specifications.

In scope

- It's aim is to conduct data from the specified database.
- For the administrator , he will be able to use the data provided to check with the advancment of the children or economic issues (like monthly payments).
- It will be user-friendly and with some simple buttons , you can be able to take the information needed.
- You can add information all the time or remove data.
- Employees can access the web page via their respective accounts and log in their data or extract data from the application.
- Parents can access with their accounts very easily and get data about their children information, the activities the kindergarten is doing or pay their monthly fee.
- Legislative issues like the conduct of research is lawful and it data will not be misused.

Out of Scope

The following items in phase 3 of Project A are out of scope:

- Our aim is to help the kindergarten administrator or human resource staff or economist and it's not our aim to provide information to outsiders
- Parents (customers) are an important part of the research and the use of application, the app is user friendly to help them get data for their children.
- This is not a demand from the customer side, but will help them a lot in time. They could access the page anytime without calling the staff of the kindergarten or going there themselves.
- Relations between the kindergarten and the kindergarten administrator will be affected.
- Relations between the kindergarten employees (teachers) and parent will be improved.
- Relation between employees and administrator of the kindergarten will be easy. Data accessible all the time.
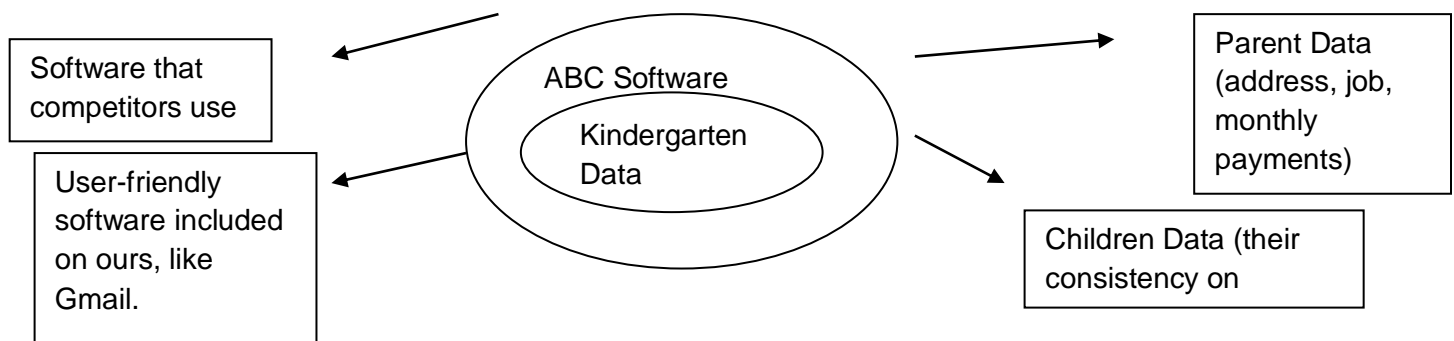
2. Product/Service Description

In this section, describe the general factors that affect the product and its requirements. This section should contain background information, not state specific requirements (provide the reasons why certain specific requirements are later specified).

2.1 Product Context

How does this product relate to other products? Is it independent and self-contained? Does it interface with a variety of related systems? Describe these relationships or use a diagram to show the major components of the larger system, interconnections, and external interfaces.

This product is independent and self-contained; it has no relation to other businesses expect the ABC kindergarten even though we conducted a market analysis to analyze the other technologies competitors were using. Within the kindergarten itself it is related with the processes around the business itself, every data related to the customer (in our case the children and their parents) is the base for the functioning of our software. So the software is depended on the database that will provide the information for each child for their education field and also about the economic problems. If the kindergarten won't provide data then the software would be useless because by collecting data through time it will help to find them easier again the future and reuse.

Software that competitors use

User-friendly software included on ours, like Gmail.

ABC Software

Kindergarten Data

Parent Data (address, job, monthly payments)

Children Data (their consistency on

2.2 User Characteristics

Create general customer profiles for each type of user who will be using the product. Profiles should include:

Our software will include only three users, the administrator of the kindergarten and they can provide access to the economist or other human resource department specialist and the kindergarten owner in case they need to check or audit the data.

The administrator of the software is the same person, who administrates the kindergarten in real life. She will update the data in a specific amount of time (for example each month). She will make sure all the confidential data is entered in the right way and only used for lawful purposes, by also deciding who she will provide access too.

The second user will be the employees of the kindergarten, which are the teachers of the children. Each teacher will be able to access the web application with their accounts and will be provided some services like home add attendance of the kids and write reports for each of them.

The parents of the children will also be users and able to access the information about their children or the kindergarten. Services like the payment of monthly fee will be granted via the web.

Technical expertise for the software of course it granted by us since the kindergarten doesn't have an IT specialist.

Security will also be checked from the supervisors of the administrator, who can be the owner itself or human resource specialists.

2.3 Assumptions

The system administrator should always keep the system up to date every day. All information of the day of each child should be sent to the respective day, every day. Every operation and action taken during that day, should be written on the system, not days later. Ex: if a payment is done, today it should be registered today, if the system does not work then it should be written in a diary of administrator and on the day that it should be registered, administrator will leave a comment about the exact day of payment.

The teachers every day can change information about the kids, if they have any specific needs, did something extra during the day, eat, slept, and took part in activities or their attendance.

Also the parents will be able to track their children progress on the other side and also complete bills to the kindergarten, pay their monthly fee or other payments needed in specific cases or activities.

2.4 Constraints

Before we used to keep our data in Excel and Word files and before we start working with the software we should spend some time transferring data from those files to the app.

The kindergarten will not have an IT specialist working all time there, so sometimes that the administrator may have problems, they will have to wait for our service and this may take a bit longer.

Also, for the security reasons because that software will have much confidential and personal information we should have a file for log-ins in the app.

This app, is going to work only on computers and may be difficult if the administrator would like to use it on the phone or somewhere else.

2.5 Dependencies

Our software program will be extremely dependent on the Database that will provide the information for each child for their education field and also about the economic problems. If the kindergarten won't provide data then the software would be unuseful.

We are also dependent on the parents a little bit, if they do not like the idea of only sending them Whatsapp messages, we have to change the way of keeping them up to date, anyways this can happen after we start using the app in the kindergarten.

3. Requirements

Describe all system requirements in enough detail for designers to design a system satisfying the requirements and testers to verify that the system satisfies requirements.

Organize these requirements in a way that works best for your project. See **Error! Reference source not found.Error! Reference source not found.**, **Error! Reference source not found.** for different ways to organize these requirements.

Describe every input into the system, every output from the system, and every function performed by the system in response to an input or in support of an output. (Specify what functions are to be performed on what data to produce what results at what location for whom.)

Each requirement should be numbered (or uniquely identifiable) and prioritized.

See the sample requirements in 3.1 Functional Requirements, and System Interface/Integration, as well as these example priority definitions:

Priority Definitions

The following definitions are intended as a guideline to prioritize requirements.

Priority 1 – The requirement is a "must have" as outlined by policy/law

Priority 2 – The requirement is needed for improved processing, and the fulfillment of the requirement will create immediate benefits

Priority 3 – The requirement is a "nice to have" which may include new functionality
It may be helpful to phrase the requirement in terms of its priority, e.g., "The value of the employee status sent to DIS **must be** either A or I" or "It **would be nice** if the application warned the user that the expiration date was 3 business days away". Another approach would be to group requirements by priority category.

A good requirement is:

Correct

Unambiguous (all statements have exactly one interpretation)

Complete (where TBDs are absolutely necessary, document why the information is unknown, who is responsible for resolution, and the deadline)

Consistent

Ranked for importance and/or stability

Verifiable (avoid soft descriptions like "works well", "is user friendly"; use concrete terms and specify measurable quantities)

Modifiable (evolve the Requirements Specification only via a formal change process, preserving a complete audit trail of changes)

Does not specify any particular design

Traceable (cross-reference with source documents and spawned documents).

3.1 Functional Requirements

In the example below, the requirement numbering has a scheme - BR_LR_0## (BR for Business Requirement, LR for Labor Relations). For small projects simply BR-## would suffice. Keep in mind that if no prefix is used, the traceability matrix may be difficult to create (e.g., no differentiation between '02' as a business requirement vs. a test case)

The following table is an example format for requirements. Choose whatever format works best for your project.

For Example:

REQ#	Requirements	Comments	Priority	Date	Reviewed Approved
BR_01	The system is designed as a desktop application with two users.	This will be the main platform for users	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_02	The administrator of the system will have all the privileges. Will access in real time all the options of the system and the database for children and employees.	Admin account has access in all functionalities of the system	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_03	Graphical data will be provided for the administrator and should be accessible all the time.	This is really important because for the administrator because he must have a clear view of the graphical data in order to access quicker the database	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_04	The system must provide the option for the administrator to register new children and new employees in the kindergarten.	This is very useful because it makes it easier to coordinate the teacher work since children are in groups and it gives facilities to the admin in order to see how much employees has and all their information.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_05	Children and employees can be registered only by admin using the email of the kindergarten.	It is useful to identify the real children and employees of the kindergarten.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_06	The administrator can log in by username and password	To provide easier log in for admin without using an email	1	21/04/2020	Amela Rahimi & Sindi Kalo

BR_07	The administrator can register new children by providing also other information such as: name, surname, parents name, address, email, date of birth.	The database created with these information will be one of the main operations of the admin	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_08	The administrator can register new employees by providing also other information such as: name, surname, address, email, date of birth and of course the paycheck.	The database created with these information will be one of the main operations of the admin	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_09	The administrator can see the data in a tabular form.This is done because tables and graphics give a more clear overview of all the children registered. There will be options for the administrator that make him able to delete or edit unnecessary information	Through these options the system will never be out of date because the admin will refresh it with new information but also deleting old information about children	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_10	The administrator can see the data in a tabular form.This is done because tables and graphics give a more clear overview of all the employees registered. There will be options for The administrator that make him able to delete or edit unnecessary information	Through these options the system will never be out of date because the admin will refresh it with new information but also delete old information about employees.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_11	The admin can add children by creating an account for them with their name, surname, parents name, date of	This way the admin will have all the information and it would be easier to access.	2	21/04/2020	Amela Rahimi & Sindi Kalo

	birth and email in their parents name in the form:namesurname@edcationabc.al				
BR_12	The admin can add employees by creating an account for them with their name, surname, date of birth and email in the form:namesurname@edcationabc.al and there will be a booton with a tick watermark if the employee has taken the salary.	This way the admin will have all the information and it would be easier to access and to not create delays with the paycheck of different employees.	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_13	The admin will have the opportunity to edit and delete other sections of the system as: activities and general information for the kindergarten that will be viewed by parents also	These two sections are made to promote the business to the parents and to keep them updated to the latest news of the activities.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_14	The admin can add also new events in the activities section which will be visible for all the parents	The admin will have access to both these two sections.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_15	The admin will be able to create a quick note for every employee	This will serve to a deeper understanding of the admin and employees an of course to improve their work	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_16	The admin will be able to	WhatsApp is the	1	21/04/2020	Amela

	have In every page of each child the phone number of one of their parents and when clicked will link immediately to WhatsApp.	common and the most useful communication tool that the admin has used with the parents until now			Rahimi & Sindi Kalo
BR_17	the admin will be able to have In every page of each child there the email address in the above mentioned format of their parents and when clicked will link immediately to gmail.	This is a second and a more official communication tool.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_18	the admin will be able to have In every page of every employee the phone and when clicked will link immediately to WhatsApp.	WhatsApp is the common and the most useful communication tool that the admin has used with the employees until now	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_19	the admin will be able to have In every page of each employee the email address in the above mentioned format of their parents and when clicked will link immediately to gmail.	This is a second and a more official communication tool example: paychecks	1	21/04/2020	Amela Rahimi & Sindi Kalo

BR_20	The admin will have a print option	The print option will serve as a document in case one of the parent wants a summary of all the time that his child has been in the kindergarten	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_21	The admin will be able to see if the parents have or have not done the payment	Here the admin will check the tick sign in each children account and will transmit to the economist.	1	21/04/2020	Amela Rahimi & Sindi Kalo

BR_22	The admin will be able to see the weekly reports for each teacher.	In this way the admin can evaluate the job and tasks assigned to each teacher and also be aware of the problems that every group has.	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_23	The admin can write feedback for each report.	The report will help teachers to improve.	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_24	The admin can change the password and the username in the setting section.	He is responsible for his own settings.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_25	The parents is the second user	The accessibility of the parent is limited.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_26	Parents will log in only by the email that it was first created and the password	This is done for security reasons so that only the real parent can have access to the page of his child.	1	21/04/2020	Amela Rahimi & Sindi Kalo

BR_27	The parents will be able to write notes about the teacher of the their child	This will create a better communication with the teacher.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_28	The parents will not be able to change the format of the email	This will be to avoid confusion and or a better and more clear view	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_29	Tha parents will be able to change the password	They will be responsible for their own settings	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_30	The parents will be able to view the information of ONLY their child	With email and password they will see the data of their own child	1	21/04/2020	Amela Rahimi & Sindi Kalo

BR_31	The parents will be able to edit the data of their own child and these changes will be reflected to the admin	This is done to create facilities in case some information of the page changes through the time. Example: the phone number	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_32	The parents will be able to leave a note at the end of the page of their child.This change will be reflected also to the admin	Parents may leave a note for the teacher or the admin in order to improve the services provided by the kindergarten	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_33	The parents will be able to receive messages on WhatsApp by the admin.	According to a survey that was made in kindergarten WhatsApp has resulted the most	1	21/04/2020	Amela Rahimi & Sindi Kalo

		common communication tool.			
BR_34	The parents will be able to receive emails by the admin.	This will be for more official updates.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_35	The parents will be able to view the activities tab.	In this tab they will be informed about the latest activity of the kindergarten, will have the possibility to view pictures.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_36	The parents will be able to view the information tab.	Information tab is a tab that serves as promotion page and keeps information that admin wants to make public	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_37	The parents will not be able to edit or delete the activities tab or information tab	These two pages will be only for the admin since parents can give wrong information.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_38	The parents will be able to see the name of the teacher of their child.	This will facilitate the communication between teacher and parent	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_39	The parents will be able to put a tick sign if they have done the monthly payment. This change will be reflected to the database of the admin	This will facilitate the admin job which will communicate to the economist	1	21/04/2020	Amela Rahimi & Sindi KAmela

BR_40	The parents will have the print option.	The print option will be available in the page of every child and parent will be able to print only the information of their child	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_41	The parents will be able to see the notes from the teacher.	This will facilitate their communication for special requests.		21/04/2020	Amela Rahimi & Sindi Kalo

BR_42	The parents will be able to see the attendance.	They will see if their child is present or not but will not be able to edit it.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_43	The teachers will be the third user in our application system	The teacher's accessibility will be limited.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_44	The teachers will be able to log in by username and password	This is done for security reasons to provide the right information for each teacher	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_45	The teachers will be able to see the profile picture.	This will serve as a confirmation that they are in their profile, but they will not be able to change it.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_46	The teachers will see their general information as name, surname, email, phone number.	This will serve as a confirmation that they are in their profile, but not edit it. If they will have something to edit (phone number)they will contact the admin.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_47	The teachers will be able to see the number of the children that they have in the group.	This information is essential for them in order to manage the children of their group.	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_48	The teachers will be able to fill a ticket box if	The answer of this will be connected	2	21/04/2020	Amela Rahimi &

					Sindi Kalo
	they have received the salary.	directly to the admin to check if the salary was offered to all teachers			
BR_49	The teachers will be able to change the password.	They will be responsible of their own password and they can save the changes in the settings section	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_50	The teachers will be able to see the full list of the children of their group.	The list will be viewed by teachers only.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_51	The teachers will be able to fill the attendendance.	There will be two options: absent or present and they will fill it for each child	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_52	The teachers will be able to contact with parent through phone number and email	This is one of the main reasons why teachers are the third user. Facilitation in communication with parents	1	21/04/2020	Amela Rahimi & Sindi Kalo
BR_53	Phone number will link directly to WhatsApp	This will be the most common communication tool.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_54	Email will link directly to gmail.	This is thought to be the communication tool for more official news.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_55	The teachers will be able to receive notes from parents.	Special notes from parents to teachers will link directly to the teacher's page.	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_56	The teachers will be able to write special notes for each child.	Special notes from teachers to parents will link directly to the parents's page.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_57	The teachers will not be able to edit phone numbers, email, name, surname, or notes received.	This is the admin responsibility. The teachers only will see this database to better manage their group.	2	21/04/2020	Amela Rahimi & Sindi Kalo

BR_58	The teachers will be able to post weekly reports.	The reports will be posted weekly and there will be only one report where the teacher will summarize information about the children of the group.	2	21/04/2020	Amela Rahimi & Sindi Kalo
BR_59	The teacher will be able to see the feedback from the admin.	This will help them to improve professionally and to be aware of problems in their group.	2	21/04/2020	Amela Rahimi & Sindi Kalo

3.2 Non-Functional Requirements
3.2.1 Product Requirements

3.2.1.1 User Interface Requirements

The first element that appears when the user accesses the software is the log in page. He must enter the username and the password in order to log in as user. In case the password or the username is not correct the error message will show up saying that one or them or both are incorrect. If they are both correct then he may proceed and log in. After the user logs in the first page he can see is ´´Welcome to ABC´´. In this page a menu with 4 elements will show in his

right, where he can access, all customers, Info page, Activities or Employees. The All Customers when clicked opens the database of all the children registered in the kindergarten. The item Info, will redirect you to all the photos of the kindergarten and information about it, even the contact inside the business. Then the user is redirected to a promotion page if he clicks at Activities. When they click it opens a new page with different activities of the kindergarten. And lastly the Employees which redirects at the database of the employees of the business and their information. At the page of the All Customers in the right will be the database table with all the gender, names and surnames of the children and if you double click in one of the names it will show the picture of them with other information like their address and their parents names, contacts, the date of the registration, who is their teacher at the kindergarten and if they have paid the monthly payment. The email links directly at the email page while the phone number will link directly at the WhatsApp. At the Activities page you can access photos updated from the user, admin of the software and kindergarten, they will have a description below and also a calendar will show up if you click for more info in the photo which shows the dates when the activities have been done. There is an Edit button in case you want to edit the calendar and add, edit , delete certain dates. And in the Employees Page you can access the table with all the gender, name and surnames of employees of the business. There will show a picture of the person, their other information, address, phone number, email and monthly salary. Their start and end date of employment is shown up. As in customers phone number and email link one to WhatsApp and the other to email. Also if they have been awarded as the Employee of Month it will show there too.

Since we will offer the service for also the employee and the parents, they will see different pages and have other services offered when logged in. The employees can access the home page where there will be shown a menu in case he wants to access the attendance and other information about children page or the reports page where each teacher will report regarding their respective children they have in supervision.

And the parents page will only be provided information page , called the home page where he can view information for their children based on the reports of the teachers and also information about their payment due date or status.

3.2.1.2 Usability
User-friendly
- It is efficient to use from the user side.
- The user is able to update data while using and edit the previous data or delete.
- The user can learn in a fast time the system.

Iterative Design
- The software should be based on a system that tests analyze and refine a products or service.
- Changes on the design can be made all the time to improve functionality and design.
- There can be various models for the same system so when there are problems empirical methods can help to solve the problem.
- Employees can log in with their accounts and access data or update them.
- Parents can access with their respective accounts and access data about their children.

Accessibility
The software is a web application, so it is accessible whenever the user has a internet connection via WIFI or mobile network.

Responsiveness

One of our aims is to make our application responsive in the visible part, in the design but also in the way it generates data and information, in the way it functions.

Flexibility

- Since the users have no IT knowledge or at least most of them, the application should be easy to be accessed and used. The employees and the administrator can update data all the time , while the parents can access them in a short time and with a small number of steps.
- The application it is predicted to manage and correct the errors in a short time, in this way it can't cause any problems in use.

Effectiveness

- As we said, it is easy to use, learn and understand.
- For the kindergarten employees and the administrator we will provide the service to go there and show how the application works, and if they have questions we may include a WORD document where each step and option is explained and also they way how to use them.
- In case they have a error during the use, an error message will show up and they can re-do the action or even contact our group tester for a more extended study of the problem.

Efficiency

- The web application should be efficient, so it can solve the technical issues the kindergarten is facing, making most of their procedures easier and shorter in time.
- The application itself should be easy to use from the users, every button and option is understandable and also the error messages can help.

3.2.1.3 Efficiency

3.2.1.3.1 Performance Requirements

- ABC is a web based application. One of the main factors to affect the performance of it, is the internet connection. It is also important the hardware performance of the device you are using and of course the process of obtaining data from the database.
- The better the internet connection the faster the service provided. If your device has large speed internet even multiple users from the same internet provider can be supported. Also the specifics of the device are important like the CPU.
- It is better if your device offers a bigger memory space. Somehow the bigger storage can provide service to multiple users.

- But we will make sure that even if the internet connection is not the fastest, still the service is provided so a number of different devices and internet connection are taken into consideration while building the web application.

- **Static numerical requirements**-We have three different types of users, the admin of the kindergarten, the employees (teachers) and parents.. The information the page will held is static too, the menu offers only four elements, the database of the children, the database of the employees, the page with the information mainly descriptive data but photos may be included and another page with activities data, calendar element and photos of activities. So 4 main functions. Our application is web based and can be accessed via internet. For the employees page it shows different options like home page, reports and attendance page. For the parents it shows the home page and within it all the information provided to the parents.
- 90% of the redirecting to one of the four pages is done in less than 5 seconds.
- The accessing of the user, log in is done in under 10 seconds.

- **Dynamic numerical requirements**- All data except the way pages will be previewed according to the static requirements above is dynamic. The databases itself are dynamic, they can be edited, you can add children or employees, delete them. Also all information is activities is updated from time to time, the calendar too so all the data in the software inside these 4 pages can be changed. Also there are money values, the monthly payment of the children and the salary of the employees which can be changed from time to time depending on the person.
- The log in is done in under than 10 seconds.
- The update of the tables, 98% of it is done under 3 seconds.
- The update of the calendar is done under 5 seconds.
- The edit 95% of it is done in under than 10 seconds(including the saving process)

3.2.1.3.2 Space Requirement

- Expected number of users is at least 100 at the launch of the software. But it is supposed to support up to 300 of users at the same time , if the number of active users increase like the kindergarten has more employees or customers. The database also can save data for all the registered users with no problem.
- The maximum simultaneous user load:100
- Memory requirements: 2-3GB RAM.
- Expected throughput: One user can request one service at a time, the system can only handle 50 requests at a second.

3.2.1.4 Dependability

Availability
- The application is available 24 hours a day, 7 days a week, accessible anytime.
- Geographical area- even though employees and customers are from Tirana it can be accessed from everywhere, in case they travel somewhere and still want access.

- If the users have internet connection, they can operate in the system.

Reliability
- Larger storage the better the opportunity to include and support a lot of data. If for example 300 users can use the system , 8 GB of RAM is available so the system operates fast and avoiding big errors and problems.
- We have predicted that the failure rate for one month would be for users 1.5% and for the server around 1.7% but we will work on lowering it.
- To support growing number of users, customers or the employees the beginning storage can support up to 200GB SSD.

Monitoring
- The server gets the user request via HTTP at the best amount of time (fastest).
- Server also tracks of every user activity and request, anytime they log in during the month and request a service so for any increase in number of user requests he is ready.

Maintenance
- The software will be updated mostly for the errors the users can have during the use of it but even for other specific options they might request.
- In case an error happens in the service requested an error message will show up, if the data is not available or the service at the moment, and it can include a specific solution or may redirect the user at the home page.

Integrity
- Every user account, no matter if the staff or the customer is integrity safe and is only information property of the kindergarten.
- All the data mentioned, collected used in the application is for educational purposes and within the kindergarten regulation and won't be misused.
- The administrator of the kindergarten and the software is responsible for every information and data within the database and server
- Every user will only share the information in their account with the administrator of the kindergarten staff and vice versa the staff only shares information about their children with respective parent.

3.2.1.5 Security
- Every log in of the users is done via b-encryption standard of account configuration and information safety.
- The database is only in the use of the kindergarten and only accessible to them.

3.2.2 Organizational Requirements

3.2.2.1 Environmental Requirements

This software build up in a web application will be both efficient and effective on its use, helping both the kindergarten and parent to access data and reduce the mostly the time it takes to search through papers for children or for parent who might be working to stay and ask each day for their kids.
Floor Space: In the environment of the kindergarten a small room dedicated to the employees is facilitated with computers so they can access the web application.
Power Supply: The power is provided from the power cable infrastructure of the kindergarten where they receive all the power.
Internet Connection: The kindergarten infrastructure is modern and teachers will be provided free internet connection within their working hours to access the software.

3.2.2.2 Operational Requirements

The ABC software is an web application that will provide better communication between the administrator of the ABC kindergarten in Tirana and their staff job. Also it will help a lot with the communication between parents and their kids teacher. The administrator who manages even in real life the kindergarten will be the only one to update, add and delete data. But comments, notes and reports will be made from teacher, so everyday the same thing they did by writing in a paper or talking individually to each parent after class they will do it through the platform. Also parent will have it a lot easier to access all this information through just one log in on the internet.
Operations:
Administrator-CRUD privileges

System Interface/Integration

Database – Plesk Database

Web Based

G-Suite

Plesk

SSL certificate

There will be 2 type of notifications sent by admin to customers, First Gmail format and Second WhatsApp format, where notifications can be received in any device if Gmail and WhatsApp applications are installed.

3.2.2.3 Development Requirements

a. Client-Side Programming (Front-end)

Technologies to be used in the client-side web development, everything the user is going to see on their screen:

- JavaScript- to make pages more interactive.
- Bootstrap-CSS framework and JavaScript templates for forms , buttons, navigation or other interface.
- JSON-data changer format to write and read data.

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b. Server-Side Programming (Back-end)

- Programming Language: PHP.
- To store the data: MySQL database.

3.2.3 External Requirements

3.2.3.1 Regulatory Requirements

The ABC software will operate under the educational private institution for children under the state of Albania. Privacy policies are adapted from the ABC kindergarten in accordance with the law in Albania with the provisions of the law ´´On the protection of personal data´´ and the related sub-legal acts. It protects all the data that will be collected for kids under age and their familiars but for the employees too. They grant that this data and information is on the kindergarten use for a good use. The session of the user log in is tracked and if someone tries to steal his authenticity there will be easier to track that is wasn't the administrator of the kindergarten.

All the information provided from the parents and employees is secured and never used for selling or traded to people outside the organization.

The parents and employees are in accordance that their information is saved in a database and can be used all the time they are part of the educational institution. The only cases the administrator is enforced to share the information is when courts orders to do so or other regulatory authorities of the state.

At the stated time no accounting requirements will be used since the software until now is used only to track data and specific information but no financial statements and other balance sheets. In case something changes this part of the document will be updated.

Every tracking of information is done under the rule Albania has undertaken regarding personal data and security laws from European Union.

3.2.3.2 Ethical Requirements

Users have agreed to share their personal information within the contract and used only for lawful motives. The information they will share is their names and surnames, their personal email address and their phone numbers and their address. No other educational institute will have the right to ask for this information or any other business or organization.

ABC provides to third parties personally-identifiable information of users to this web application if these rules apply:

- If the users agree to share this information.
- If there is an authorization to the administrator of the kindergarten previously stating that this information could be shared in cases when a court orders or it is due to a regulatory authority.

3.2.3.3 Legislative Requirements

3.2.3.3.1 Accounting Requirements

Taking into consideration the nature of the web application , it should be stated that at this moment our software has no accounting requirements. But in case something changes and the software has other purposes , the requirements will be updated with the changes.

3.2.3.3.2 Security Requirements

The user in our case is the administrator itself, he doesn't need to encrypt the password from itself but using encryption the test can create privacy for the user.
The databases both the employee table and the customer, is only accessible to the administrator and only he can access, change and edit the information. The CRUD functionalities are performed on the data.
The tester also will be taking care of any security bugs about the databases since the administrator itself is not specialist.

Authorization and Authentication
Single-Factor Authentication- is the method we will be using. Since we have a limited number of users, only requesting him a password is enough to grant security. It only asks for his credentials to verify his identity.
After authentication is done, the credentials are recognized from the software authorization will happen. You are authorized access to all the data, not only to access them and visualize as user but change and update the information and even delete. Full authentication is granted to the user.
We can use Pubcookie to create direct relation between the user and the server. Pubcookie will verify his credentials and also a cookie is provided to the user to save all his functions within the system. It will be used for enforcing authentication process.

3.3 Domain Requirements

ABC is a Windows software in a kindergarten business in Albania. Its aim is to come to help to the kindergarten administrator in order to have more control over data and make her job easier. But the security of the data is the most important issues. A lot of personal information regarding under-age kids and their parent, and the kindergarten employees is included in the tables of database of the software and we have to be careful in order to not have misconduct. The software is only accessible from one user, and this makes it easier to control the data. It is private software so no outsider will have direct relation with it and doesn't depend on another server, like the server of ministry of education in Albania. A stable internet connection is requested from the kindergarten facilities anyway.

4. User Scenarios/Use Cases

Provide a summary of the major functions that the product will perform. Organize the functions to be understandable to the customer or a first time reader. Include use cases and business scenarios, or provide a link to a separate document (or documents). A business scenario:

- Describes a significant business need
- Identifies, documents, and ranks the problem that is driving the scenario
- Describes the business and technical environment that will resolve the problem
- States the desired objectives
- Shows the "Actors" and where they fit in the business model
- Is specific, and measurable, and uses clear metrics for success
  4.1

1."ABC" Web Application- "Login is successful"
1.1 Administrator
a. The administrator logs in with their credentials, username/username and password.
b. If the username and password are found correctly in the dedicated database of users.
c. The administrator is redirected to the first page/ home page of the system

1.2 Employee
a. The employee logs in with their credentials too, registered email and password.
b. The database table dedicated to users/employees retrieves the credentials.
c. The employee is redirected at the home page of the system.

1.3 Parent
a. Parent logins with their username or email.
b. He types the password he has registered the account.

c. In the database is done the right matching of the credentials.
d. The user is redirected at the home page.

2. "ABC" web application- Login Failed
2.1 Administrator
a. The administrator logins with the registered email.
b. The credentials not found in the database, the login is unsuccessful.
c. An error message is shown if the credentials are incorrect.
d. He remains in the same page.

2.2 Employee
a. He enters his credentials to log in username and password.
b. The credentials are not the same as in the user database table.
c. Log in unsuccessful, error message is shown to the user.
d. He is not redirected, remains at the login page.

2.3 Parent
a. The user enters his credentials, email/username and password.
b. The credentials are incorrect, not found and matched with database.
c. Log in incorrect and error message is shown.
d. The user remains at the log in page.

3. User update profile
3.1 Employee update
a. Employee will have the option to request an update of the profile and a box to complete with the specific request.
b. Request is received from admin.
c. Admin decides if he wants to do the update of the profile and if yes updates.
d. Employee profile is updated.

3.2 Parent update
a. Parent will have the option to request an update of the profile and a box to complete with the specific request.
b. Request is received from admin.
c. Admin decides if he wants to do the update of the profile and if yes updates.
d. Parent profile is updated.

3.3 Admin update request
a. Admin received an update request from employee/parent.
b. He does the needed update to the profile.
c. He notifies the employee/parent that the update of the profile is done.

4. Admin-Home Page
a. Admin logs in and is redirected at the home page and four options are available.

b. Admin click at one of the four options: All Costumers, Info, Activities and Employees.
c. Admin is redirected at the requested page and navigates through it.

4.1 Admin- All costumers
a. Admin is redirected at All Costumers page.
b. Admin navigates through all the page and can find every costumer listed and their specific information
c. Admin can add new costumer, delete costumer and update costumer.
d. For each costumer he can email and call them.

4.2 Admin- Info
a. Admin is redirected at Info page of system.
b. At info page he can access photos and information of kindergarten.
c. He can add, delete photos and information.

4.3 Admin- Activities
a. Admin is redirected at the Activities page.
b. He now can access all the activities of the kindergarten, add or delete them.
c. He there can access the activities calendar.

4.4 Admin-Employees
a. Admin is redirected at the Employee page.
b. Admin navigates through all the page and can find every employee listed and their specific information.
c. Admin can add new employee, delete employee or update employee.
d. For each employee he can email and call them.

5. Admin-Add, Delete.
a. Admin can add and delete information and photos in information page, activities from activities, employees from employee and costumers from costumers.
b. After he logs in and goes to the specified page on Home Page he click add or delete.
c. If he click adds a form to fill appears for costumer and employee and an attachment form for the photos, information or activities.
d. He completes them and click save to save them so they appear in their specified pages.
e. If he click delete , he has the option to select what he want to delete and then a second message appers if he is sure he want to delete.
f. If yes deletion is done and changes are reflected in specified pages.

6. Parent- Home Page
a. Parent logs in and is redirected at the home page.
b. The can select between activities page and information page.

6.1 Parent-Activities
a. Parent is redirected to activities where he can only search for activities.

b.. Parent is offered a search button and he can search with name of activities or date.

c. After he search the related activities show.

6.2 Parent Information

a. Parent is redirected at information page where he looks after their kids.

b. Parent can access data such as personal information.

c. They can access attendance table.

d. They can also see if payment is done and comments from the teacher.

e. Parent can download report for their children written from the teacher.

7.Teacher-Home Page

a. Teacher logs in and is redirected at the home page.

b. They can select between information page, reports and attendance.

7.1 Teacher Information.

a. Teacher is redirected at information page where he find information about theirselve.

b. They can trace their payment status in this page.

7.2 Teacher Reports

a. Teacher is redirected to their reports page.

b. They can add comments for each of their students and grades.

c. After parents view their comment it shows a sign in the teacher page that they have seen it.

d. They can write in the report page.

7.3 Teacher Attendance

a. Teacher is redirected at the attendance page.

b. They can tick if the kid is present or cross if they are absent.

8. User Successful Logout

a. The user is logged in the ABC.

b. The user clicks on the log out button on the right of the top page.

c. The user is redirected at the main log in page and session has ended.

9. User Failed Logout

a. The user is logged in the ABC.

b. The user click on the log out button on the right of the top page.

c. The user is redirected at an error page and an error message is shown: "Something went wrong. Try login out again".

10. Parent Receive Notification

a. Parent is logged in the ABC.

b. On the home page a message is displayed that says "New Activity".

c. If he clicks at "New Activity" he is redirected at the activities page.

11. Parent-View New activity
a. Parent is logged into their account at ABC.
b. After clicking the message "New Activity" he is redirected at the activities page.
c. Then the new activity is listed the last one and he can click to see description and photos.