Specification of software requirements

Draft: Prototype of virtual ID for first level student of the Universidad de las Fuerzas Armadas "ESPE"

Review

MAJOF Developers

2020

Revision history

Date	Review	Description	Author
23/01/2021			Moromenacho Tipan, Mishell Estefania Navarro Zambrano, Johny Nicolay Ocaña Bolaños, Francisco Javier Pallasco Mancero, Oscar Fernando Pazmiño Gordon, Bryan Alexander

Document validated by the parties on date:

For the client	By the supplying company
Universidad de la fuerzas armadas ESPE	MAJOF Developers
Signed. Mr. / Mrs.	Signed. Mr / Mrs

Content

1 Introduction

1.1 Purpose

This report is based on the Software Requirements Specification (ERS) format, governed by the IEEE830 standard.
This program is a virtual identification prototype for new students of the IT career, where the student will require said card and this will be redirected to where the career director and he will have to enter their data in order to generate the card.
In addition, the student will have the benefit of being treated at the polyclinic where only those who are part of the institute will have access, and this will have 4 areas of specialization where these four areas will have a specific inventory and the student will have access to the medications that they are there. also the student can schedule an appointment to be attended

1.2 Scope

This prototype is going to be a virtual certification system for first grade students. This system will be developed to facilitate both mobility and the use of technologies, otherwise it would have to be developed manually.
More especially, this system is designed so that first-grade students obtain this virtual Canet and in this way streamline the procedures that all said users have, both at the entrance of the institution and in the polyclinic, in addition to having the services of the polyclinic. This system will have the data entry of each student in order to create a code that allows them to enter the institution and also the polyclinic.

1.3 Involved personnel

Name	Moromenacho Tipan, Mishell Estefania
Role	Developer
Professional category	IT Student
Responsibilities	editor and developer
Contact information	memoromenacho@espe.edu.ec
Approval	aquí el texto]

Name	Navarro Zambrano, Johny Nicolay
Role	Developer
Professional category	IT Student
Responsibilities	editor and developer
Contact information	jnnavarro@espe.edu.ec
Approval	aquí el texto]

Name	Ocaña Bolaños, Francisco Javier
Role	Developer
Professional category	IT Student
Responsibilities	editor and developer
Contact information	fjocana@espe.edu.ec
Approval	aquí el texto]

Name	Pallasco Mancero, Oscar Fernando
Role	Developer
Professional category	IT Student
Responsibilities	editor and developer
Contact information	ofpallasco@espe.edu.ec
Approval	aquí el texto]

Name	Pazmiño Gordon, Bryan Alexander

Role	Developer
Professional category	IT Student
Responsibilities	editor and developer
Contact information	bapazmino3@espe.edu.ec
Approval	aquí el texto]

1.4 Definitions, acronyms and abbreviations

VR: Virtual Card
IEE 830: Standard comprising software requirements.
Java: It´s a programming language.
Software: Set of programs and routines that allow the computer to perform certain tasks.

1.5 References

Reference	Title	Route	Date	Author
IEEE	Standard IEEE 830 - 1998			

1.6 Summary

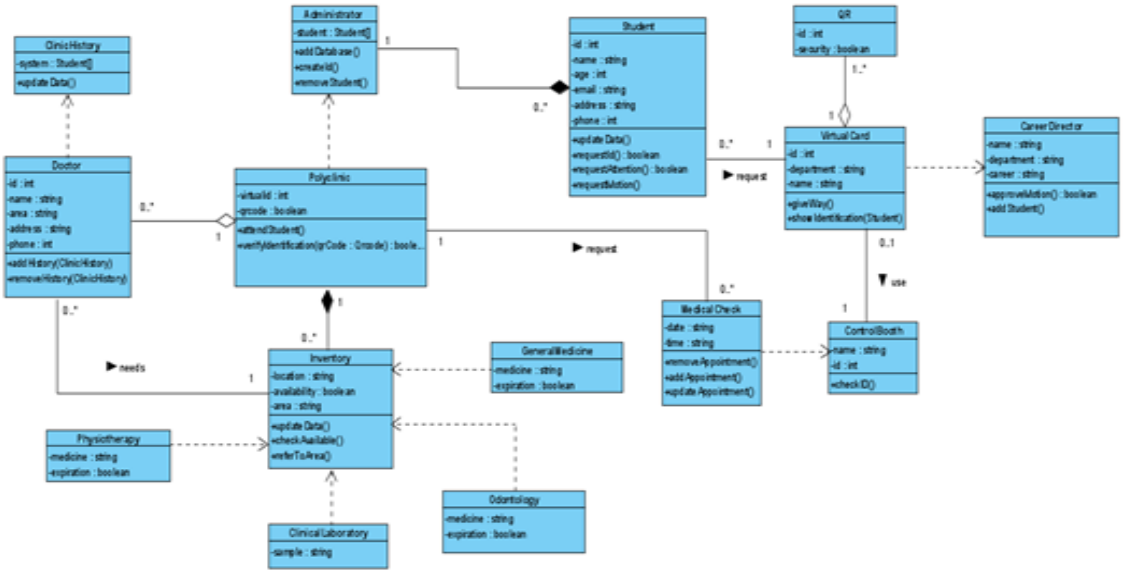
In the next chapter, there is the general explanation. Explains the requirements used in this system, an environment for the description of technical requirements.
The third chapter, Requirements Description part, of this file is written primarily for developers and explains in technical terms the details of the system's functionality.

2 General description

2.1 Product perspective

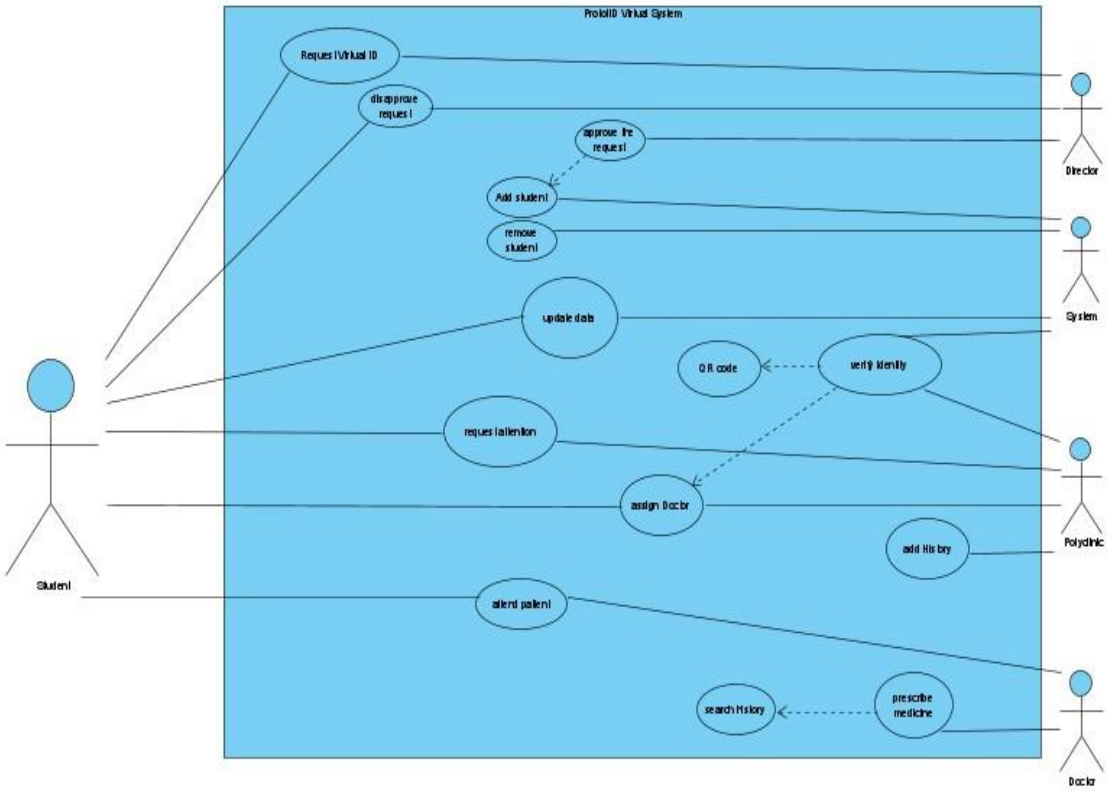
The program depends on the implemented system of the polyclinic that will be connected with different systems such as the sentry box that will be in charge of giving access to the institution to the student.

It will also depend on the polyclinic database since that way the student can be identified and all their data can be accessed. The career director also plays an important role since he is in charge of giving said information from the student to the polyclinic.



2.2 Product functionality

Virtual identification is based on the student being able to enter their data virtually from a device, in this way they can generate their identification that will be used to access different areas of the campus.



Once the student enters their data, they will be saved in the ESPE's database and their virtual ID will be created, that information will reach each area of the campus once the Director of the program has authorized it. In this way, the student will be able to access the free campus services.

In the polyclinic area, the first thing that will be done before assisting the student is to verify that they belong to the institution, this is achieved thanks to the QR code that each student has in their virtual ID. Once the information is corroborated, the student will be served in the area that he wishes to be served.

If the student needs any medication, the polyclinic will deliver it without any problem and will register it in the database.

The virtual ID has the same appearance as a normal card that the ESPE grants to all students with the minimum difference that it is electronic and it is more feasible to obtain it.

2.3 User characteristics

Type of user	First level students
Training	IT engineering
Skills	study
Activities	Student

Type of user	Race director
Training	Teaching
Skills	Engineer
Activities	Inspection

Type of user	Administrator
Training	IT engineering
Skills	Engineer
Activities	Administrator

2.4 Restrictions

The program, being a prototype, is limited to many things when designing such as the number of users, the types of uses in different areas, programming languages, etc.

In the type of user we limit ourselves to only new students of the IT career and with respect to the types of areas we limit ourselves to only the area of medicine and the entrance of the student to the institution.

2.5 Assumptions and dependencies

As the program is a prototype, its dependencies are not defined, however at the time of terminating the program it would depend on the operating system of the device since it would have to have several versions of the program depending on the device it is on.

2.6 Predictable evolution of the system

In future versions it is desired to expand the types of uses in different areas of the institution such as parking lots or laboratories.

3 Specific requirements

Requirement number	RF01		
Requirement name	Register Students		
Description	If the new student wants the code, they will have to go to the direct to have access to the virtual card, where they will have to give their personal dat		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

Requirement number	RF01.1		
Requirement name	Old student data entry		
Description	The system may be consulted by the old user depending on the level of accessibility		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

Requirement number	RF01.2		
Requirement name	new student request		
Description	The system may be consulted by the new user depending on the level of accessibility		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

Requirement number	RF03		
Requirement name	Polyclinic registry		
Description	The student will have this benefit only if he is part of the institute		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

Requirement number	RF04
Requirement name	Doctor consultation
Description	Collects the query information about the student and gives it a

	perscripsion		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

Requirement number	RF05		
Requirement name	Inventory requirements		
Description	All medications are added in this area, but the medications are already established and the student will be able to access them based on their ailments		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

Requirement number	RF05.1		
Requirement name	Polyclinic areas		
Description	The student has access and benefits to the different areas that the polyclinic has, where it is possible to perform tests or acquire different types of medications according to the área		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

Requirement number	RF06		
Requirement name	Shift management		
Description	Allows the student to add a date and time to create a shift or appointment at the polyclinic		
Type	☐ Requirement	☐ Restriction	
Requirement source	Document, "Prototype of virtual ID for first level students of the Universidad de las Fuerzas Armadas"		
Requirement priority	☐ High / Essential	☐ Average / Desired	☐ Low / Optional

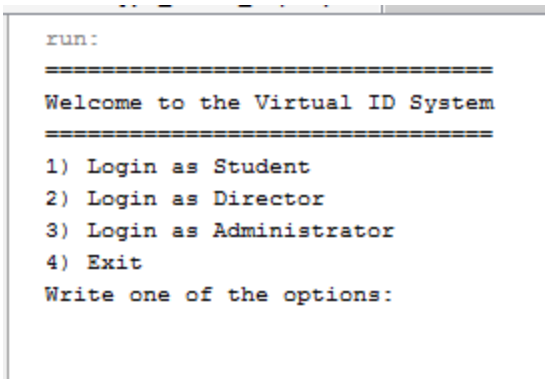
3.1 Common interface requirements

3.1.1 User interfaces

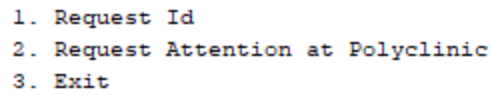
For the graphic interface, a simple and functional design was considered, which consists of a menu of four options where each option is a different user. Each option will be complemented with other selection menus where the user will have various services.

Main elements

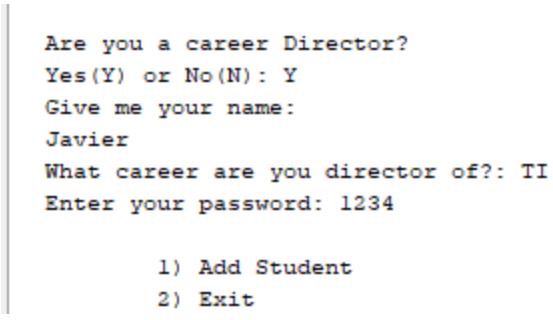
Main menu: When the program starts, a menu appears on the screen which allows the user to access the system services according to the position they have, be they a student, career director, or program administrator.



Student option: In this option we will find a menu in which the student can request the ID or request the attention of the Polyclinic. Once you select the option you need, it is only a matter of entering your data and following the care instructions.



Director option: In this option a series of questions appear where the director must fill them out for safety. After entering your data, you will have the option of adding a student or exiting the program.



Administrator option: In this option, the administrator will be in charge of managing the newly graduated students. The administrator takes all the student's data and saves it in the institution's database so that he can later use the services that the university has, such as Polyclinic.

```
1) Add to Database
2) Create ID
3) Exit
```

3.1.2 Hardware interfaces

The program itself does not have hardware as it is a virtual ID prototype.

3.1.3 Software interface

Java language

Java allows us to create or make our own methods and use them simply as well as to make use of the methods of other libraries (mathematical, arithmetic, file, date, etc. functions, etc. Whatever the case, the functions allow us to automate tasks that we require frequently and that can also be generalized by means of parameters or arguments.

Gson bookstore

It is an open source library for the Java programming language that enables serialization and deserialization between Java objects and their representation in JSON notation.

FileManager bookstore

Library created at the time of programming which will have methods that will serve us to save, delete and search for user data from the database.

3.1.4 Communication interfaces

The database, clients and the program will communicate with each other, using standard internet protocols, whenever possible. The virtual identification program has to access the institution's database so that the student can access the campus services once her identity is validated by the system.

3.2 Functional requirements

Taking into account the requirements that are established for the correct management of the software, taking into account that this is a prototype, therefore, this system is only trained for students of the University of the Armed Forces - ESPE, taking into account the following functional requirements .

3.2.1 Functional requirement 1

- **User authentication:** Users must identify themselves to access the virtual card and be able to access different work modules.

  ✓ The system can be consulted by any user depending on the module in which is located.

3.2.2 Functional requirement 2

- **Consult Information:** The system will offer the user information about the accessibility of different work modules.

  ✓ **Library Accessibility:** Shows general information about the uses of the books you want to research for your respective works.

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3.2.3 Functional requirement 3

- **Register User:** The system will allow the user to register. The user must provide data such as: ID, Names, Age, email, Address, Phone

3.2.4 Functional requirement 4

- **Modificar:** Permite al administrador modificar datos de los usuarios.

3.3 Non-functional requirements

3.3.1 Performance requirements

Taking into account the requirements that are established for the correct management of the software, it must be taken into account that this is a prototype, therefore this system will only be implemented only for first-time students of the information technology career, the program is expected to meet the established performance.

3.3.2 Security

In this section, the stability procedures that the program will present are detailed.

- The program will have an entry system, called "Student and Director Login" for staff to enter the system.

- The program will contain a way to retain the data of each user that interacts with the system.

- The program has a random number generator for the virtual card, each student will have a different ID

3.3.3 Reliability

The student's data is saved in a file where the client can view all the student's data, in addition to this data being kept safe

3.3.4 Availability

Availability is one of the characteristics that measures the degree to which system resources will be available for use by the end user, over a given time.

3.3.5 Maintainability

The IEEE (19990) defines maintainability as: "The feasibility with which a system or software components could be modified to fix bugs, improve its handling or other attributes or adjust to changes in the environment." Having said this, it is

inferred that a program Well developed, it should have the primary flexibility to adjust to the future, as in addition, maintenance will have to be done instantly and positively, damaging the least feasible to the tasks of the entity that uses it. A maintainability analysis or maintenance project will be generated. This is a first model and an expert work set will have to offer the approval of the talk program to make it bigger, continue to improve it and be applied in a work area. At the end of this matter, it will be possible to add new functions to the program, so that over time, performance will be increased, problems of vulnerabilities that may arise in the future are resolved

3.3.6 Portability

- First of all, it should be noted that the first model to generate is being programmed in "Java" language.
- 100% of the elements of the system are dependent on a database. Because without the database the system could not function.
- The NetBeans development platform, the JDK and JRE applications were used for its development.

3.4 Other requirements

At this point, we will define legal, cultural or political requirements as requested by the buyer entity.The program product that will be developed, since it is going to be implemented in the ESPE armed forces university, should be completed within the limits of the organization. In addition, it is determined that the program developed will only have the Spanish language as a choice, because the delegated personnel to use the program do not need the choice to view the system in another language, of course it is not ruled out that in future updates there is the translation into other languages. This last characteristic of the system corresponds to a cultural and / or political requirement.

4 Appendices

Students who are entitled to the benefits of the university of the armed forces ESPE will have to have the card, new students will have to approach the director so that he can enter their data and generate an ID, while old students will only have to approach the system administrator and make the request.