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Project

E-CV1217 System

Part 1: Requirements Document (version 2.0)

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DECLARATION

We Heider Jeffer and Marco Pomalo We are Postgraduate students, we accept to work together as a team under the supervision of Prof. Gabriella Dodero, Now therefore, we certify this submission as our own original work completed in accordance with the Free University of Bozen-Bolzano Honor code.

Heider Jeffer and Marco Pomalo

Dedication

This project is dedicated to my father, who taught me that the best kind of knowledge to have is that which is learned for its own sake. It is also dedicated to my mother, who taught me that even the largest task can be accomplished if it is done one step at a time.

Heider Jeffer

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Marco Pomalo and Heider Jeffer

“Essentialists hope that when students leave school, they will possess not only basic skills and an extensive body of knowledge, but also disciplined, practical minds, capable of applying schoolhouse lessons in the real world.”

William C. Bagley

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1. Introduction

This section will give to the reader general information about this document, and about the product that is intended to be realized.
The European Union supports a project following the EU directive on school dropouts. The managers of this project in South Tyrol are educators. They are in contact with the Department for Education in South Tyrol and their goal is to help school dropouts in the age of 12-17 to find a job without proper qualifications. In order to achieve this goal, it is important to realize an E-Portfolio that can be shown as a CV to companies. The E-Portfolio should be started at school before a possible dropout. We call students at school and school dropouts all students from now on. This document contains the requirements for E-CV1217 system. Requirements are collected by an analysis process. In this case the analysis was done by elicitation of some stakeholders and the participation to focus groups.

1.1 Purpose of this Document

This document is intended to show and explain the requirements for a further development of E-CV1217 system. It will go through several topics in order to give the best comprehension about the intended system in order to accomplish stakeholder needs.

1.2 Scope of the Product

The E-CV1217 is intended to allow students to enter their skills and abilities in an electronic system without specific knowledge. These information will be kept in the school system till a maximum period described in Section 4.3 Requirement RS12.1 and Section 4.6 Requirement RD1.1. It is expected that the entered information can be used mainly as a printed or digital document formatted following the Europass directive that can be handed out to interested Companies as a CV.

1.3 Business Case for the Product

The E-CV1217 system is needed to increase the opportunities for underage teenagers to get a job by presenting themselves in a proper way using a well formatted CV. In particular it is oriented to those teenager that dropped out of school and are neither students nor employed. Therefore this system can help to decrease the number of underage unemployed teenagers by increasing the quality of contact to interested companies.

2. General Context Description

This section will give the reader an overview of the system, including why it was conceived, what it will do when complete, and the types of people we expect will use it.
This project is intended to improve and automate the existing process that is actually used to compile a E-Portfolio by students. In the actual process, the students must own programming skills in order to realize their E-Portfolio. This results annoying and very difficult to do. This is the main reason why this system should be realized. It should ease and motivate students writing their E-Portfolio.

2.1 Customers and Stakeholders

This section gives a brief description of customers and stakeholders of E-CV1217 system.

2.1.1 Customers

The Customer of this System is the Department of Education in South Tyrol. It will provide the infrastructure in order to run the system within the school network.

2.1.2 Main Stakeholders

The main stakeholders of E-CV1217 are:

- Students within the age of 12 and 17.
- Teachers employed by the Department of Education in South Tyrol.
- At least one Manager for every school who is an appointed Teacher within the school.
- System Administrator.

2.1.3 External Stakeholders

There are also external users involved in this system, but they do not interact actively with the system as users.

- Parents are in contact with Teachers and help and motivate Students to compile their E-Portfolio,
- Educators working for Non-Profit Associations that are in contact with Teachers and connect Students with Companies.
- Companies are in contact with Managers to propose job opportunities.

2.2 User Characteristics

This system has two categories of users. This is needed to prioritize the development of tasks. In each category there are type of users which detailed description can be found in Appendix B.

2.2.1 Primary Users

Following type of users are the main users of the system.

- **Students (aged 12-17)**: the entire project accomplishes their needs about composing an E-Portfolio.
- **Teachers**: their support is crucial by helping students composing the E-Portfolio or by adding or improve student's skills.

2.2.2 Secondary Users

Following type of users are marginally involved in using the system.

- **Managers**: their role is to be responsible for the management of the user type Teacher and to provide support and help to the users.

2.3 Product Perspective / System Purpose

At the moment the E-Portfolio composition is done by programming an HTML based web page. This is done manually by the Students and then uploaded on a web server by the Managers. The Students use a HTML Template to fill up.

This system is intended to replace the existing E-Portfolio composition. This system allows to enter the same data as before, but without programming anything. The GUI of the system products guides the composition of the E-Portfolio. At the end, the E-Portfolio can be printed as a CV using the european Europass format. The E-Portfolio is stored in the system and can be updated at any time till the Student's nominal age of 17.

2.4 Product Components

The E-CV1217 system is composed of **four different components**:

- ➔ **SA:** The main application of the system running on a server connected to the intranet school network.
- ➔ **CA:** An application running on the school computers connected to the intranet school network.
- ➔ **MA:** A mobile application for smartphones which is thought for Students only. It allows to:
  - ◆ Work online if connected to the school network.
  - ◆ Work offline in other cases.
- ➔ **HA:** A standalone application thought for Students only that can be installed on the home computer that allows to work offline at home.

2.5 General Constraints

2.5.1 About the System

GC1.1: Shall be developed for multiple platforms.
GC2.1: Shall be multilingual.
GC3.1: Shall not communicate over the Internet.

2.5.2 About the Export Data Format

GC4.1: The chosen export format shall be documented and published in order to allow other future systems to import E-Portfolios generated by E-CV1217 system.

2.6 Assumptions and Dependencies

We assume that:

- This system will be used in the school system of South Tyrol.
- The mobile application will be distributed through the application stores of the main platforms.
- The standalone application that can be installed at home can be obtained at school, through the Managers or downloaded from the Internet.

The system needs:

- An activated user of type Manager at initialization which can create other Managers and Teachers.

2.7 Related Projects

- LinkedIn: This product cannot be used since it requires to be aged at least 18.

3. User Tasks and Goals

This section describes the tasks a user can do and an example of solution the system can provide.

3.1 Common Tasks For All Users

Task:	TG1.1 Login/Logout	
Goal:	Log in the system and log out of the system.	
Critical:	When more than 300 users log in at same time.	
Component:	SA, CA, MA only if Student is connected to school intranet network.	
Sub Tasks:		**Example Of Solution:**
TG1.1.1	Login by entering the credentials.	System asks for username and password.
TG1.1.2	Logout of the system.	User does a specific action to log out.
Variants:		**Example Of Solution:**
TG1.1.1.a	The credentials are incorrect or expired.	System warns about and goes back to TG1.1.1
TG1.1.1.b	The user is already logged in.	System does not provide login option.
TG1.1.1.c	The user logs in the first time.	System shall execute TG2.1
TG1.1.2.a	The user is not logged in.	System does not provide logout option.

Task:	TG2.1 Change Password.	
Goal:	Change the existent password.	
Critical:	no.	
Component:	SA, CA, MA only if Student is connected to school intranet network.	
Sub Tasks:		**Example Of Solution:**
TG2.1.1	Enter the old password.	System asks for old password.

TG1.1.2	Enter the new password twice.	System asks to enter new password in two different fields that must be compared for equality.
Variants:		**Example Of Solution:**
	none.	

Task:	TG3.1 Create/Update/Delete Contact Data	
Goal:	Create/Update/Delete Contact Data.	
Critical:	no	
Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS3.1.1	Create new contact data by selecting the type of new contact data. (e.g. Address, Phone, E-Mail, …)	System shall provide functionality to select the desired type of new contact data and to enter the meaningful data.
Variants:		**Example Of Solution:**
TS3.1.1.a	Optionally Update contact data.	System shall provide functionality to select and update contact data.
TS3.1.1.b	Optionally Delete contact data.	System shall provide functionality to select and delete contact data.

3.2 Student's Tasks

Task:	TS1.1 Manage Personal Description	
Goal:	Update user's personal description about her/himself	
Critical:	No	
Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS1.1.1	Update description	System shall provide an update functionality for user description
Variants:		**Example Of Solution:**

	none	

Task:	TS2.1 Create New Skill.	
Goal:	Enter Data about a new skill.	
Critical:	When more than 10 skills.	
Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS2.1.1	Select the category of skill from: ● Formal Learning ● Non Formal Learning ● Informal Learning	System shall propose the categories of skills that can be added.
TS2.1.2	Add the selected new skill.	System shall propose to add a new skill.
TS2.1.3	Add the meaningful data about that category of skills.	System shall provide a functionality to add the title, the description, and other meaningful information depending of the skill's category.
TS2.1.4	Optionally add up to 4 images to prove the skill.	System shall provide functionality to add up to 4 images to a new skill. System shall warn the user about exceeding size and perform RS6.2 in case the size of an image exceeds 3MB.
Variants:		**Example Of Solution:**
TS2.1.4.a	Optionally in case of Non Formal Learning or Informal Learning skills, add 1 video to prove the skill.	System shall provide functionality to add 1 video to a new skill. System shall warn the user about exceeding size and perform RS7.2 in case the size of an video exceeds 25MB.

Task:	TS2.2 Read Skills.
Goal:	Show the entered skills
Critical:	When more than 10 skills

Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS2.2.1	Read skills already entered in the system.	System shall show the skills in a collapsed list so that each skill can be expanded singularly. System shall show the skills divided in the categories: ● Formal Learning ● Non Formal Learning ● Informal Learning
Variants:		**Example Of Solution:**
	none	

Task:	TS2.3 Update Skill.	
Goal:	Update data about an existing skill.	
Critical:	When more than 10 skills.	
Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS2.3.1	Select the desired skill.	System shall provide a functionality for the selection of an existing skill.
TS2.3.2	Update the information and/or the images of a selected skill.	System shall provide functionality to update information and/or images of the selected skill.
TS2.3.3	Optionally add images to complete the limit of TS2.1.4.	System shall provide functionality to update images and/or video of the selected skill till the limit is reached.
Variants:		**Example Of Solution:**
TS2.3.1.a	There are no skills present in the system.	System warns about that there are no skills that can be selected.

Task:	TS2.4 Delete Skill.
Goal:	Delete an existing skill.

Critical:	Cannot be deleted if Teacher has added/modified it.	
Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS2.4.1	Select the desired skill to be deleted.	System shall provide a functionality for the selection of an existing skill
TS2.4.2	Confirm the deletion of the selected skill.	System shall ask the user to confirm or cancel the deletion of the selected skill.
TS2.4.3	Delete the selected skill.	System shall provide functionality to disable information and images of the selected skill.
Variants:		**Example Of Solution:**
TS2.4.1.a	There are no skills in the system that can be deleted.	System warns about that there is nothing that can be deleted.

Task:	TS7.1 Export E-Portfolio	
Goal:	Export the E-Portfolio data to a storage for further import in the system.	
Critical:	no	
Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS7.1.1	Decide a password to encrypt the data of the exported portfolio.	System shall prepare the data of the E-Portfolio to be exported.
TS7.1.2	Export the data of the E-Portfolio.	System shall encrypt the prepared data of the E-Portfolio using the provided password and export it to a file on a storage.
Variants:		**Example Of Solution:**
	none.	

Task:	TS7.2 Import E-Portfolio
Goal:	Import the E-Portfolio data from the offline version of the product.

Critical:	no	
Component:	SA, CA, HA, MA.	
Sub Tasks:		**Example Of Solution:**
TS7.2.1	Select the exported E-Portfolio to import.	System shall provide a functionality for the selection of the exported E-Portfolio on a storage device
TS7.2.2	Provide the password that decrypts the E-Portfolio that will be imported.	System shall provide functionality to request the password and successfully decrypt and import the data of the offline E-Portfolio. A version control for a correct synchronization with the data already resident in the system must be provided.
Variants:		**Example Of Solution:**
TS7.2.1.a	There are no data that can be imported.	System warns about that there is nothing that can be imported.
TS7.2.2.a	The data cannot be decrypted due to wrong password.	System warns about that the password is not correct.
TS7.2.2.b	There are conflicts in the synchronization.	System shall ask which version shall be kept.

Task:	TS8.1 Print E-Portfolio	
Goal:	Print the E-Portfolio on paper or create a PDF file.	
Critical:	no	
Component:	SA, CA, HA.	
Sub Tasks:		**Example Of Solution:**
TS8.1.1	Decide to print on paper or create a PDF file	System shall provide the selection between paper or PDF file.
TS8.1.2	Print or create the PDF file	System shall print on a connected printer or ask for a destination for the PDF file and create it.
Variants:		**Example Of Solution:**

TS8.1.1.a	There is no printer connected.	System warns about that there is no printer.
TS8.1.1.b	There is no suitable destination for the PDF file.	System warns about that it cannot create the PDF and asks for a different destination.

Task:	TS9.1 Manage Learning Style Information	
Goal:	Manage user's learning style information.	
Critical:	No	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**
TS9.1.1	Update learning style information.	System shall provide an update functionality for user learning style information.
Variants:		**Example Of Solution:**
	none	

3.3 Teacher's Tasks

Task:	TT1.1 Create New Student In The System	
Goal:	Add new Student to the system.	
Critical:	no	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**
TT1.1.1	Initialize new Student.	System shall provide a functionality to initialize new Student.
TT1.1.2	Enter personal data of new Student.	System shall allow to enter Name and Surname of new Student.
TT1.1.3	Activate the new Student in the system.	System shall generate meaningful username and a password, then print a formatted sheet with

		personal data and access credentials.
TT1.1.4	Hand out the sheet of TT1.1.3 to the Student.	
Variants:		**Example Of Solution:**
TT1.1.2.a	The personal data are already in the system.	System warns about and goes back to TT1.1
TT1.1.3.a	The printer is not connected or not working.	System warns about print action unsuccessful.

Task:	TT2.1 Archive Student In The System	
Goal:	Archive a Student.	
Critical:	no	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**
TT2.1.1	Search for the desired Student.	System shall provide standard search function.
TT2.1.2	Select the desired Student.	System shall display the search results by showing Student's Name and Surname in a list for selection.
TT2.1.3	Archive the Student in the system.	System shall archive the Student.
Variants:		**Example Of Solution:**
TT2.1.2.a	The searched Students was not found in the system.	System warns about that there is nothing to re-activate.

Task:	TT2.2 Recover Archived Student From The System	
Goal:	Activate an archived Student again.	
Critical:	no	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**

TT2.2.1	Search for the desired Student.	System shall provide standard search function.
TT2.2.2	Select the desired Student.	System shall display the search results by showing Student's Name and Surname in a list for selection.
TT2.2.3	Enter new expiration date to Student of TT2.2.2.	System shall allow to enter new expiration date.
TT2.2.4	Re-Activate the archived Student in the system.	System shall activate the archived Student again.
Variants:		**Example Of Solution:**
TT2.2.2.a	The searched Students was not found in the system.	System warns about that there is nothing to re-activate.

Task:	TT3.1 Create/Update/Delete Skill for specific Student.	
Goal:	Create/Update/Delete Skill for specific Student.	
Critical:	no	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**
TT3.1.1	Search for the desired Student.	System shall provide standard search function.
TT3.1.2	Select the desired Student.	System shall display the search results by showing Student's Name and Surname in a list for selection.
TT3.1.3	Perform the desired operation in similar way of Tasks TS2.x	System shall provide functionality to Create/Update/Delete Skills in similar way of Tasks TS2.x.
Variants:		**Example Of Solution:**
TT3.1.2.a	There searched Student was not found in the system.	System warns about that there is nothing to show.

3.4 Manager's Tasks

Task:	TM1.1 Password Lost.

Goal:	Reset password.	
Critical:	Manager cannot reset her/his own password.	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**
TM1.1.1	Select the desired user	System shall provide standard search function.
TM1.1.2	Enter the new password twice.	System asks to enter new password in two different fields that must be compared for equality.
Variants:		**Example Of Solution:**
	none.	

Task:	TM2.1 Create New Teacher or Manager In The System	
Goal:	Add new Teacher or Manager to the System.	
Critical:	no	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**
TM2.1.1	Initialize new Teacher or Manager.	System shall provide a functionality to initialize new Teacher or Manager.
TM2.1.2	Enter personal data of new Teacher or Manager.	System shall allow to enter Name and Surname.
TM2.1.3	Select if Teacher or Manager.	System shall allow to select the role Teacher or Manager.
TM2.1.4	Activate the new User in the system.	System shall generate meaningful username and a password, then print a formatted sheet with personal data and access credentials.
TM2.1.5	Hand out the sheet of TM2.1.4 to the User.	

Variants:		**Example Of Solution:**
TM2.1.2.a	The personal data are already in the system.	System warns about and goes back to TM2.1
TM2.1.4.a	The printer is not connected or not working.	System warns about print action unsuccessful.

Task:	TM3.1 Change Role of Teachers and Managers.	
Goal:	Change Role of Teachers and Managers.	
Critical:	Manager cannot change her/his own role.	
Component:	SA, CA.	
Sub Tasks:		**Example Of Solution:**
TM3.1.1	Select the desired Teacher or Manager	System shall provide standard search function filtered by Teacher and Manager.
TM3.1.2	Enter the new role.	System asks to enter new role by proposing the roles Teacher and Manager.
Variants:		**Example Of Solution:**
	none.	

4. Specific Requirements

This section of the document lists specific requirements for E-CV1217 system. The requirements are divided by topic. Every requirement includes the code of the affected Component of the Product as described in Section 2.4 .

4.1 Initialization Of System

- ❏ RIS1.1 Components: SA,CA. The System Administrator, who is not a user of the system, setup and initializes the above Components. She/He creates at least one user of user type Manager.
- ❏ RIS2.1 The Component HA shall provide a standard self-explained installation procedure.
- ❏ RIS3.1 The Component MA shall be downloadable and installable from the app store of competence.

4.2 User Requirements

4.2.1 General:

- ❏ RUG1.1 The user shall confirm every operation that add, update or delete data.

4.2.2 Students:

- ❏ RUS1.1 The Student shall be able to perform all the Tasks TGx.x and TSx.x.
- ❏ RUS2.1 Components: SA, CA, HA, MA. The Student shall not be able to delete a Skill if it has been added or updated by a Teacher.
- ❏ RUS3.1 The Student shall be guided to access to a defined learning style test page and perform the test. The results shall be entered as described in Task TS9.1

4.2.3 Teachers:

- ❏ RUT1.1 The Teacher shall be able to perform all the Tasks TGx.x and TTx.x.

4.2.4 Managers:

- ❏ RUM1.1 The Manager shall be able to perform all the Tasks TGx.x and TMx.x.
- ❏ RUM2.1 The Manager shall provide help and support to other users.

4.3 System Requirements

- ❏ RS1.1 Components: SA, CA, HA, MA. The system shall be multilingual: at least Italian, German, English must be provided and selected by the users.
- ❏ RS2.1 Components: SA. The system shall provide daily backup. We suggest that the first backup of each week will be kept for 4 weeks to grant recovery of weekly data for a month.
- ❏ RS3.1 Components: SA. The system shall have a Database, the data shall be encrypted. The general Data Model is described in Appendix A.
- ❏ RS4.1 Components: SA, CA, HA, MA.The system shall have a Version Control System to synchronize the offline work to the online work. In case of conflicts the system shall ask the Student which version shall be kept.
- ❏ RS4.2 Components: SA. The System shall log any activity to prevent Data loss.
- ❏ RS5.1 The System shall work on Windows OS, Mac OS and Linux OS, Android, iOS.
- ❏ RS6.1 Components: SA, CA, HA, MA. The System shall manage at least four most popular image formats.
- ❏ RS6.2 Components: SA. The system shall reduce quality of images if needed to match the max. size of 3 MByte.
- ❏ RS7.1 Components: SA, CA, HA, MA. The System shall manage at least four most popular video formats.
- ❏ RS7.2 Components: SA. The system shall reduce length of video if needed to match the max. size of 25 MByte.
- ❏ RS8.1 Components: MA shall be allowed to work online only if connected to the school network.
- ❏ RS9.1 Components: SA, CA, HA, MA. The system shall encrypt exported data with a password entered by the Student as in Task TS7.1
- ❏ RS10.1 Components: SA, CA, HA, MA. The system shall decrypt imported data using the password entered by the Student as in Task TS7.2

- ❏ RS11.1 Components: HA, MA not connected to school intranet network. These Components shall only work on imported E-Portfolios since there is no possibility to login the system.
- ❏ RS12.1 Components: SA. The system shall archieve automatically Students at their 22nd birthday data.

4.4 Interface Requirements

- ❏ RI1.1 Components: CA, HA, MA. The user interface shall have a GUI which is self-explained. The GUI shall adapt itself to different devices and screen sizes.
- ❏ RI2.1 Components: CA, HA. The printer interface shall provide the option to select different printers.
- ❏ RI3.1 Components: CA, HA. The Export/Import interface shall manage the most popular storage devices, even if they are mobile devices.
- ❏ RI4.1 Components: CA, HA, MA. The interface for uploading images and video shall allow to browse from different devices.

4.5 Quality Requirements

4.5.1 Usability

- ❏ RQU1.1 Components: SA, CA, HA, MA. The user shall be able to receive feedback of any operation performed within 4 seconds.
- ❏ RQU2.1 Components: HA.The student shall be able to install the component on her/his computer at home by following self explained installation steps without any external help.
- ❏ RQU3.1 Components: MA.The student shall be able to install the component on her/his smartphone without any external help.
- ❏ RQU4.1 Components: CA, HA, MA.The users shall be able to understand how to interact with the system in less than 10 minutes.
- ❏ RQU5.1 The Student shall be able to learn the flow of operations of export and import when working on Component HA or MA in less than 10 minutes.

4.5.2 Security

- ❏ RQS1.1 The system shall provide security features as described in RS2.1, RS3.1, RS4.1, RS4.2, RS9.1, RS10.1.
- ❏ RQS2.1 Components: SA, CA, HA, MA.The system shall be at least protected against attacks such as Query Injection, Script Injection, XSS.
- ❏ RQS3.1 The E-Portfolio data shall be stored in encrypted form.

4.6 Data Requirements

- ❏ RD1.1 The data of a Student will be kept alive till the 22nd birthday, so the database shall contain its data for ten years. The database shall be able to handle at least 5.000 Students for each of the 100 interested schools in South Tyrol.
- ❏ RD2.1 The database shall contain the text data of Students and Teachers.
- ❏ RD3.1 The storage shall be able to contain 2 Gbyte of images and video for each Student.

4.7 Quality Grid

In this Section we resume the quality factors that affect the E-CV1217 system in a grid.

Operation	**Critical**	**Important**	**As Usual**	**Unimportant**	**Ignore**
Integrity/Security	RQSxx.x				
Correctness			X		
Reliability/Availability			X		
Usability	RQUx.x				
Efficiency		RQU1.1			

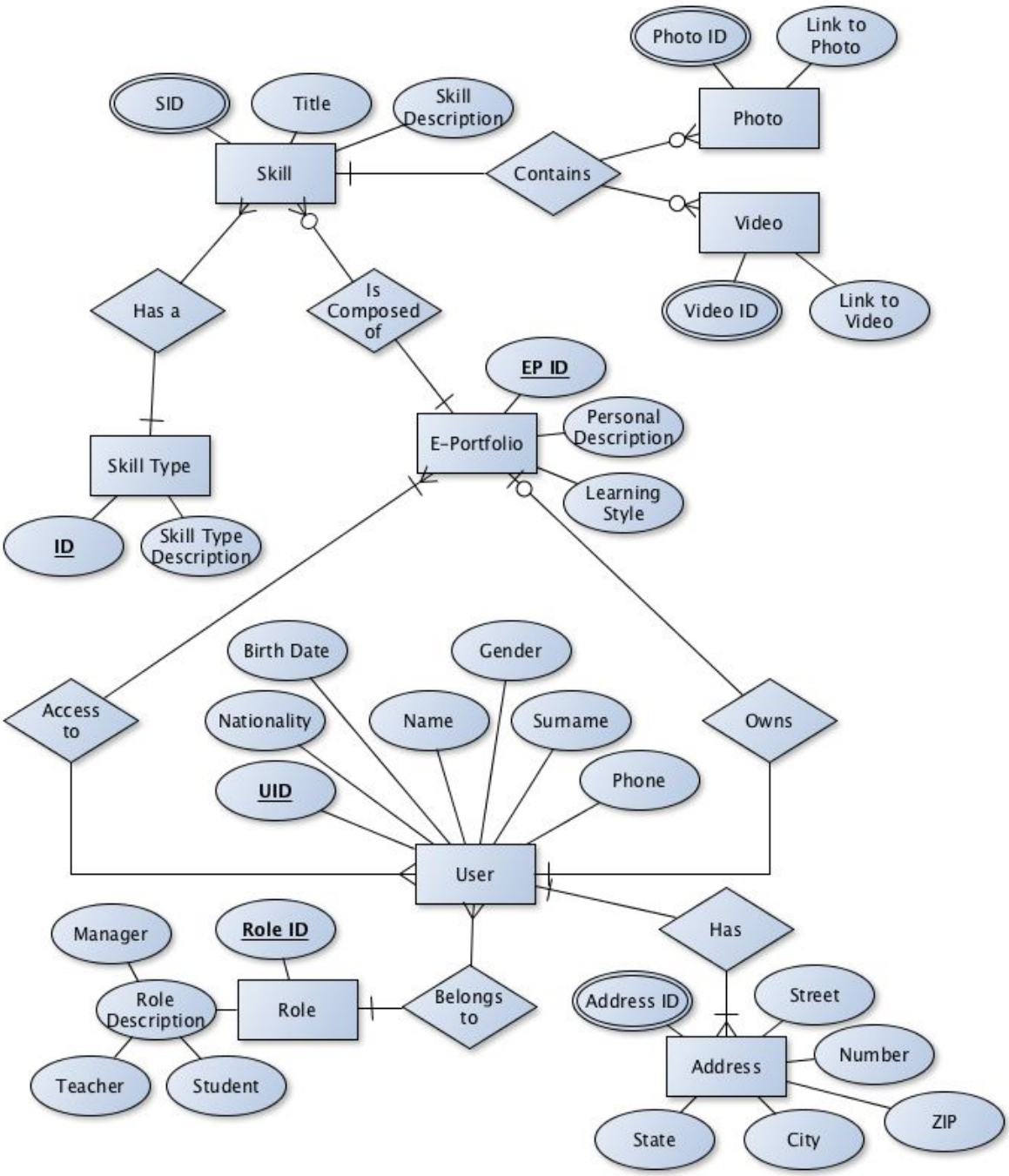
Transition	**Critical**	**Important**	**As Usual**	**Unimportant**	**Ignore**
Portability			X		
Interoperability			X		
Reusability			X		
Installability		RIS2.1 RIS3.1			

5. Glossary

CV	Curriculum Vitae.
GCx.x	General Constraints.
GUI:	Graphic User Interface. This is the graphical way to interact with the system.
Persona:	The main idea of Personas are fictitious characters created to classify users.
RD*x.x*	Requirements for the Data.
RI*x.x*	Requirements for the Interface.
RIS*x.x*	Requirements to initialize the System.
RQS*x.x*	Quality requirements: Security.
RQU*x.x*	Quality requirements: Usability.
RS*x.x*	Requirements for the System.
RUM*x.x*	Requirements for the user type Manager.
RUGx.x	Requirements for all users.
RUS*x.x*	Requirements for the user type Student.
RUT*x.x*	Requirements for the user type Teacher.
Scenario:	This is an instance of a Persona in order to describe in a concrete context the workflow of a task.
TG*x.x*	General Tasks for all Users.
TM*x.x*	Tasks of the user type Manager.
TS*x.x*	Tasks of the user type Student.
TT*x.x*	Tasks of the user type Teacher.
User Types:	These are categories of users defined as follows: ● Students. ● Teaches. ● Managers.
Users:	These are the actors that interact with the system.

6. Appendices

6.1 Appendix A: Example of possible Data Model (ER Diagram)



6.2 Appendix B: Personas and Scenarios

6.2.1 Personas for user type: Student

<table>
<tr><td colspan="2">Ahuva Adonai
Student
Age: 13
Gender: Female</td></tr>
<tr><td>Goals and motivations
She pas
ses her exams and get a good degree.
She wants to become a doctor like her father.
Activities
She does like to read books.
She does not hear well.
Game involves audio interactions, she misses out during such game.
She likes discussing about (tabletop and video) games with friends.</td><td>Social skills
She gets impatient with others, especially when it takes a long time for others to grasp the idea.
She is Supportive with her classmate.
She is easily to get frustrated when she cannot immediately come up with the right answer (problem reading).
Computer usage
She has a good knowledge in that.
She has a computer and a tablet.
She does not have a smartphone.
She borrows a smartphone from her parents.
She enjoys playing on these devices.</td></tr>
</table>

<table>
<tr><td colspan="2">Levi Harel
Student
Age: 17
Gender: Male</td></tr>
<tr><td>Goals and motivations
He left the school
He wants to become a carpenter
Activities
He likes playing with the other
He likes dancing
He likes watching action movies
He spend his time with his family</td><td>Social skills
He is a handsome
He has too many friends
He is easy to communicate with
Computer usage
He has a basic knowledge on that
He has a computer and a tablet
He has a smartphone
He has an account on Facebook and Gmail</td></tr>
</table>

6.2.2 Persona for user type: Teacher

<table>
<tr><td colspan="2">Abarron Naomiski
A School Teacher
Age: 37
Gender: Female</td></tr>
<tr><td>Goals and motivations
To make learning fun and interactive
To use the latest technology when teaching
Manage events
Create, edit and send educational games to the parents
Make her subject easy to understand as possible
Activities
Help the students to understand mathematics
Make the students interact with mathematics
Help students to interact with website</td><td>Experience in IT
High
Needs
Wants the apps to be engaging for the children and educational so they're learning while having fun
Wants the app to encourage the children to look around</td></tr>
</table>

6.2.3 Scenario for user type: Student

Levi Harel Student is at school in the computer room. He wants to improve his E-Portfolio. He logs in the CA Component of E-CV1217 System by typing his username and password. He select the informal skill in which he describe his swimming ability, then he update it by uploading his photo when he awarded the swimming race champion from his USB Stick. He selects the export function to export the E-Portfolio to his USB Stick by entering a fantasy password for encryption. At home he starts the HA Component of the E-CV1217 System because he remember he has one more photo of the swimming race on the home computer. He imports the E-Portfolio from the USB Stick by typing in the same password set at school to decrypt the data. Then he select and update the informal skill of swimming by uploading one more photo. He exports the E-Portfolio again to the USB Stick by entering an encryption password. The next day, he logs in again the CA Component of E-CV1217 System in the school computer room and imports the E-Portfolio by entering the decryption password entered at home. The updated data is then uploaded and synchronized to the school system. He is satisfied and logs out to go home.

7. References

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