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**Student Bus Pass System with NFC**  
**Vision**

**Version 1.0**

Student Buss Pass System with NFC	Version: 1.0
Vision	Date: 19.03.2018
Project_Vision	

## Revision History

Date	Version	Description	Author
19.03.2018	1.0	Initial Vision version	Adrian Timis

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# Vision

## 1. Introduction

This project has the sole purpose of providing a better system for students in Cluj-Napoca to manage their monthly free buss passes. The current situation has the student come each month to the kiosk's owned by the transportation company, and then wait in a long queue, give the person there a lot of documents that are given each month, and do not change, and then more than often choose the same 2 free lines as the previous month. It does not take too much time to realize that this process can be improved, and this is exactly what this project aims to do.

### 1.1 Purpose

The purpose of this document is to introduce other people to the idea behind the project, what it aims to do and how it aims to do it. There are not many technical details, as this is more a description of the reasoning behind the application.

### 1.2 Scope

This project will change the way that students in Cluj-Napoca manage their buss passes. They will no longer have to wait in long queues at the beginning of each month, they will be able to receive notifications concerning their current situation of their passes. In short, this will reduce wasted time, and avoid students receiving tickets because of forgetting to renew their passes.

### 1.3 Definitions, Acronyms, and Abbreviations

For information regarding this subject please open the project's Glossary where all this information is provided.

### 1.4 References

### 1.5 Overview

The rest of this document consists of information regarding the users that will be part of this application and the stakeholders. Furthermore, some requirements for the system will be listed.

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## 2. Positioning

### 2.1 Problem Statement

The problem of	Managing bus passes
affects	the students of Cluj-Napoca
the impact of which is	a lot of wasted time, potential fines
a successful solution would be	to receive notifications regarding the state of the bus pass, be able to choose the bus lines from the comfort of your home.

### 2.2 Product Position Statement

For	Students in Cluj-Napoca
Who	Receive free monthly bus passes
This system	is a management tool
That	Is more reliable and easy to use
Unlike	The current solution, provided by the transportation company
Our product	Requires the student to physically go to a kiosk only once per academic year

## 3. Stakeholder and User Descriptions

The stakeholders and users involved in this project are students in the city of Cluj-Napoca and local government officials who are interested in providing a better service for citizens. The main problems that students go through are the fact that they spend too much time queueing, providing the same documents all the time, and then choosing the same 2 lines as the previous month, it is just a lot of wasted time, and the queues are always long, since most of the student's bus passes expire at almost the same time. Another issue is the fact that it is easy to forget the date on which the bus pass expires, and it feels idiotic to receive a fine for a free service just because you forgot to queue that month. As for government officials, there is a major issue regarding the fact that there is no centralized data center which holds information about all the students in Cluj-Napoca, so when they need to receive discounts, they have to rely on the student to provide the same information all over again.

### 3.1 Stakeholder Summary

Name	Description	Responsibilities
Local government officials	Local council representatives	This stakeholder mainly provides the funding necessary to develop this system, as it is for the use of the citizens living in the city they are working for. They are interested in making this system as reliable, maintainable and scalable, so that it could easily be extended for

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		other groups of people, pensioners for instance.
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### 3.2 User Summary

Name	Description	Responsibilities	Stakeholder
Students	They are the people who mainly use this application	This user does not have many responsibilities, they just provide the issues they are facing, and then they are part of the testing team because the application is mainly intended for them.	The local government officials are the ones who represent their interest.

### 3.3 User Environment

The working environment of the target user is a typical one found in software companies. The workload will be split into tasks, and people will be appointed to complete these tasks, depending on the difficulty of the task more than one person can be appointed to solve a task. Even after some people were given a task, the project manager may appoint more members, if the task proves to be more difficult, or if that task needs to be completed in a quicker time. As for the time that is spent on each task, this is not a constant time value, but rather small deadlines or progress review meetings may be set by the project manager in order to keep track of the progress. There are no unique environmental constraints, just that some developers will need Android powered phones so that they can test and develop the mobile application. Even though the application will be used in the buses when the ticket inspectors will validate the bus passes of passengers, it is not necessary for software developers to go outdoors to test this.

At the moment, the plan is to create an Android app that will act as a client program for the students, ticket inspectors and the transport company clerks. This client app will communicate with the central server via http requests. In the future, an app for iOS and other mobile platforms could be implemented, so that users with different phones can use the application as well. The application will use the NFC protocol to communicate information regarding the state of the bus pass, and thankfully, Android supports that. However, iOS does not support NFC for anything else than payments, so, for those users, there will be the possibility to receive NFC cards, that will act the same as their mobile phone.

## 4. Product Requirements

The product will have to work with NFC standard protocols, reading and writing data to NFC tags, and use the Android app to communicate information through NFC. Platform requirements at the moment are the Android operating system, and a connection to the internet is needed for the ticket inspectors and company clerks in order to communicate to the central server. An internet connection is needed for the user as well so that he can see their active bus passes and manage their account. As for performance requirements, the Android phone will have to support NFC, and the software version of the phone it will require will be announced soon.