Wonder Document

Integrating the Student ID Card with Ticketing System

Introduction

This project is carried out as an assignment in the INF4260/INF3260 – Human Computer Interaction course.

In our project we explore the possibility of using the Student ID card as a form of "renewable" ticket to access transport as provided by Trafikanten.

Background

Trafikanten offers various kinds of tickets for transportation by bus or tram within the city of Oslo. These include:

- Hour Ticket – allows a client to travel by bus or tram within the city for an hour
- Day Ticket – allows a client to travel by bus or tram within the city for a whole day
- 7 Day Ticket – allows a client to travel by bus or tram within the city for a whole week
- Month Ticket – allows a client to travel by bus or tram with the city for a whole month
- Student Ticket – allows a student client to travel by bus or tram within the city for a whole month at a subsidized rate.

Once a ticket has been bought the client will have to activate the ticket by stamping it using machines provided at most stations.

This project focuses on the student aspect of the ticketing system. A brief analysis of the current ticketing system has revealed a number of problems which this project seeks to address. These include:

- *Long waiting times when purchasing a student ticket*: on average one has to wait about 5 minutes before being attended to.
- *Availability of Student Tickets*: student tickets are not as ubiquitously available as Hour Tickets. This means one has to find a point where student tickets are sold and in most cases involves travelling.
- *Undue Penalties Resulting from Forgetting*: it has been observed that one can easily forget his/her ticket home or forget to activate his/her ticket (by having it stamped) before boarding a bus or tram. In such a case Traffic Inspectors will deem a person to be a cheat and that a person is liable to pay a penalty.
- *Mismatch between Student Time Constraints and Time Required to Purchase a Ticket*: students are probably the most time-constrained people around but when you look at the time taken waiting on a queue to purchase a ticket plus the time taken travelling to and from the Ticket Purchase point (e.g. Trafikanten) one sees a mismatch.

In order to address these problems we ask the following questions:

- How can we make the ticketing more convenient and time-friendly for a student?
- Is it necessary for one to travel to Trafikanten in order to purchase a Student Ticket?
- Is there a way we can link up the Student ID card (system) with Trafikanten Ticketing system to facilitate purchase of Student Tickets?

- How does such a link affect or improve the interaction between Trafikanten and Students as part of its clientele?
- How can such a link contribute to further improvement of the Trafikanten Ticketing System in general (without constraining ourselves to the student aspect alone)?

Proposed Solution

This project aims to explore the possibility of linking the Student ID card system with the Trafikanten Ticketing System allowing:

- *Use of the Student ID card as a renewable ticket*
- *Registration of Student ID card as ticket through the Internet.*
- *Purchasing Days of validity (a.k.a. Toping Up Your Card)*: this involves purchasing the number of days a Student can use his/her card as a ticket. This should also be done using the internet. This essentially turns a Student ID card to a renewable Trafikanten ticket.
- *Check Ones Account Status*: the student involves the student logging on the system and being provided up to date information regarding his/her account. This could simply be how many days he/she has left on his account.

Assumptions on the Target Group

At the heart of this solution is the Student ID card, we therefore make an assumption that most students have Student ID cards or if not can easily get one.

We further assume that a majority of students have bank accounts and are familiar with Internet Banking or use of credit cards. In addition to this we assume that, if not already, Trafikanten Ticketing System can be configured to accept payments via Internet Banking or credit cards.

We also assume ease of use as well as ease of learning of Internet Banking and credit card systems for those students that are not familiar with these technologies.

Conceptual Model: The Bank Account

The proposed system will use the concept of a *bank account* as a metaphor. A bank account either has funds or not. In this case we look at the registration process as a way of opening an account with Trafikanten, only that in this case the currency is days and not Kroner. The Student ID card, serves as a way of identifying a particular account.

The bank clerk needs to check funds available in an account to validate a withdraw operation on the account. Similarly, a Transport Inspector on a bus or tram can then use a card reader to check if an account associated with the Student ID card has days in it or not. A student on the other hand can simply log on the system and will be provided with up to date information regarding his account.

One can also look at the proposed system using the concept of a Bag. A bag is either empty or not. Similarly, the Student ID card, as a bag, can be empty or not depending on whether a student has purchased days or not. The only problem here is that details of how many days a student has purchased will not be kept on the Student ID card. The Student ID card serves only as a pointer to records to be kept at Trafikanten.

Proceeding, however, with this concept of a bag, one needs eyes (or means to weigh) the bag to check if it has something in it. In a similar manner, we need special eyes to see if a Student ID card has some days or not. In the case of Transport Inspectors, a card reader can be used on buses and trams. In the case of students, they simply log on to the system and will be given up to date information regarding their account.

Methodology

Our approach to this project involves prototyping. We intend to build a simple web-based prototype that will demonstrate the intended behaviour of such a system and at the same time be used to evaluate interactivity options available for such a system.

The prototype will not dwell on how connectivity can be established between Trafikanten and UIO's Student ID Card system. We will make an assumption that such has connectivity "exists" and then focus on the user-system interaction.

Project Group

The project group is made up of two students:

- Brown Msiska
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Both students are studying for an International Masters in Information Systems with a bias towards Health Information Systems.