

# NUML TRANSPORT MANAGEMENT SYSTEM

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## **Background**

Managing transportation in a University is a major thing that influences the processes of the university. Every day, a considerable amount of vehicle check-ins and check-outs are done by the security section at the university gate. It is essential for lecturers and the administrative staff to go out of the University for important purposes. Managing various visits of the staff members and lecturers of the university undergoes a considerable process. The person who handles the assigning of vehicles and drivers for the incoming requests does the main part of the system along with the persons who permits the visits. It is not an easy task to assign vehicles and drivers to incoming requests. As a lot of visits happen.

The existing Transformation Management System of the University is completely manual. The system is based on paper works and communications between the users of the system. After a person made a request, the clerk of the particular faculty does the driver assigning and the vehicle assigning for a particular request after the head of the department has given the approval for the request. After assigning a vehicle and a driver, the clerk has to communicate with the driver after getting the approval for the request. The persons that gives the approvals for the requests are, Vice chancellor, Dean, Assistant Registrar and the Department Head. The approvals are given according to the destination of the request. The person who approve depends on the destination. The clerk has to do the communication with the driver and the persons which gives the approvals. The clerk also has to inform the user that the request is accepted.

The security personals also play a role in the existing system. They do the recording of meter readings of the vehicles and times every time a vehicle goes out and comes in the University. They take the responsibility of verifying whether the request is approved by the suitable person.

There are many identified problems to be discussed in the existing system of the University for managing the transformation. By identifying those weaknesses, a web based Transformation Management System is proposed to the Faculty of Science by us. It does the management of the vehicles in the University in an efficiently way, consuming less time. Its purpose is to provide a system for doing this vehicle management more efficiently and accurately.

The system is web based and it also consists of an Android application for the driver and the person who want to request a vehicle, let's say the requester. The requester has the ability to request a vehicle using his/her android application and see time to time whether the request is approved or not. The web based system is basically for the clerk of the Faculty of Science and the persons who gives the approvals for the visit. The driver can see for what visits that he has been scheduled using his android application. The security officer at the gate gets their part of the system too, they can use the web based system to update the meter readings and times that a vehicle goes out and comes in.

## Problem Definition

- Today all the work at the time of taking transport services of the students is done manually by ink and paper, which is very slow and consuming much efforts and time.
- Since the numbers of students is growing, and management has to handle records of all the students, it is facing a little bit problems in maintaining the records of students and other details.
- It is required to Design of a Computerized Transport Management System, to speed up and make it easy to use system.

## Why Need of This?

Having analyzing the manual system, we have identified many weaknesses and problems. **NUML,TMS** provides solutions for all those problems. The problems we identify are mentioned below.

- Inefficient and time consuming

The method of requesting a vehicle is not so efficient in the existing system. The person who needs the vehicle has to make the request before at least two days (before at least 4 days for the requests which needs the approval

of the Vice Chancellor). The clerk has to find an available vehicle and a driver to assign looking at the paper works.

- The excessive use of paperwork

The use of paperwork in the existing system is time consuming and it also leads to many problems. The probability of losing is high. If a disaster happens, there's no way to recover the lost data. It also requires more physical storage space to store increasing paper works. Finding a specific information is hard. The clerk has to go through all the documents in order to find the information he/she needs. Also, there is a possibility of losing the documents.

- Communication weaknesses

After a request is approved by the department head, the form has to be handed over to the clerk in order to do the rest of the process. Even after the clerk has assigned a driver and a vehicle, the clerk has to hand over the form to the relevant person to get the approval. Handing over the form is not an efficient way of doing this. Sometimes the driver is the person who hands over the form to relevant person.

- Lack of security

In the existing system, a document can be misplaced easily. Intentionally or non-intentionally. The security of the existing system cannot be guaranteed.

## Problem Solving

With **NUML.TMS**, we provide solutions which efficiently overcomes the mentioned problems.

- No paper works needed

With the implemented system, there is no need of any paperwork. All the functionalities are done by a complete web based system and an android application that is given to specific users of the system.

- Automated environment

Many of the inefficient processes of the existing system are automated by the proposed system. The users do not have to take much effort to do the functionalities of the system as the system functions in an efficient way other than the existing system. Also, the users can overcome the communication weaknesses of the existing system. There will be no misunderstandings and there won't be any mistakes.

- Proper communication

The communications are reliable in the implemented system because all the communications are properly handled. No miscommunication will happen as the communications are fully automated. There is no need of sending messages in traditional ways to inform the users of the system about the processes.

- Accuracy of the system

The main functions of the existing system are done accurately in the implemented system. There is no need of double checking the processes of the system. The system takes care of the functions that are needed to be done.

- User friendly interfaces

Simple and understandable interfaces are used in the implemented system. Users can do the basic functionalities using the simple interfaces provided in the implemented system.

## Scope of Software

The **NUML Transportation Management System** is proposed in the first place to implement a system for automating the existing method of managing transports of the University. The main focus of this system is to manage the transportation of the University. The implemented system provides many beneficiaries to the users.

- **Notification System to automate the communication.**
- **SMS Alert System.**
- **Alarm Remainder System for the Driver.**
- **Generating Announcements for the Students.**

## Requirement Analysis and Design

### Requirement Analysis

Our main method of requirement gathering is interviewing. We interviewed the Admin of the Transport Dept. first. By interviewing him, we elicited the basic requirements of the process of assigning a vehicle and a driver to a request.

We also interviewed a driver and Student of the University to know what are the tasks he had to do in this process and What are the Improved Suggestions They Demand.

There were some unclear requirements there too. So, we got them cleared by meeting the Admin Again and asking questions.

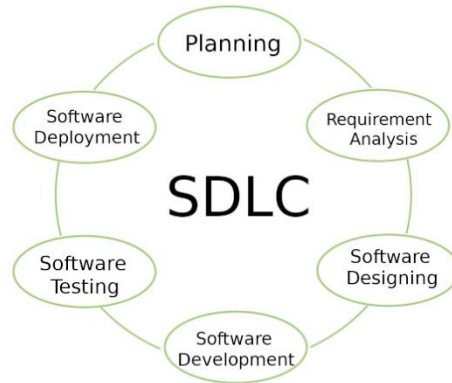
Finally, we were able to provide a better solution for the problems we identified through **requirement analysis process**.

### Design

We started designing the system by analyzing the requirements, using **UML diagrams** we represented the functionality and how the data flows in the system. And an **ER diagram** to represent the database of the system.

## Implementation

The following graph show our project **NUML TRANSPORT MANAGEMENT SYSTEM** software developed process. We develop our software by the rule of SDLC.



1. The provider will assign a lead consultant to oversee the engagement and serve as a single point for engagement communication.
2. The proven in NUML TMS software developers, system/hardware, engineers, and other IT specials as the requirements and needs.
3. We also resolve the IT issues and make recommendations regarding IT networks, IT security, software, and other data and integration.

## MAIN MODULES

- Web development
- Online registration
- Online payment through bank or credit card
- Payment on cash
- Timetable of routes morning and evening session
- Account management system
- Expire registration
- Student management portal
- Print tickets
- Routes managements
- Detail information about registration
- Settings about security and registration
- Recover forget password through email

## MAIN FEATUERS

- Bar code scanning

- Credit card processing
- Student history
- Customize GUI
- Discounts
- Exchanges
- Layaway and quotes
- Mobile POS capability
- Receipts notes

## **BENEFITS TO NUML**

1. It simplifies the accounting process, old fashioned cash registers force accountant to sort through hundreds of receipts.
2. It simplifies the manage the lots of student's problems.
3. It is easy to look up past transactions
4. Student can register and can see the location of the bus at any place and student can purchase their own order.
5. Modern worker is often more comfortable with point of sale device than old fashion cash register.
6. The generation now entering the workforce never knew a time without computers, and a result they are very comfortable working with the computerized technology like points of sales devices.
7. It provides faster service than old fashioned cash registers.
8. Students receive more informative receipt points of sales device.
9. Student can save his record on their mobile about registration and print fee challan
10. If any problem produces during the traveling, then deriver can inform to the main office through his mobile application software.

