***Motivation***

*Streets of the Addis Ababa get decorated by very long lines of people praying for a taxi or bus to arrive at the break of dawn. After a full sunrise, very large number of people start fighting for a single seat a coming taxi can offer. This creates the perfect time for the thieves and snitchers that wait for the moment fully fueled-up ready. This is an ordinary day-to-day life of AA residents. But occasionally, since the city serves as capital both for the country and continent, major roads might be blocked due to meetings and demonstrations which worsen the situation. Elderlies, disabled people, pregnant women become the most disadvantageous of the situation. People may miss unmissable events, meetings, classes, exams and etc.*

*We, as students at Addis Ababa Institute of Technology, have witnessed most of our classes being delayed or sometimes cancelled due to transport issues our lecturers face in the city. We also saw our Addis Ababa city resident classmates struggle not to miss classes and sometimes tests. This is all because the transport system is based up on a mere trust the customers lay on the transport service providers, which means they don’t know whether the service is available or not. They just have a trust and hope to wait until a taxi or bus arrives.*

*As humans, trust is a very good thing to have. But sometimes it can be broken and put us in difficult situations. So customers should have their trusts on a documented reservation rather than on the service providers themselves.*

**Related systems**

Our project is more or less related to airlines flight booking system. Customers are made aware about the available flights with their respective departure and arrival times and places. And they book their choice of flight. It is relatively much more efficient way of selling ticket which reduces unwanted grueling from both the customers and company sides.

In our project, customers are given information with available buses from a given terminal to others and their respective departure times. And they reserve a seat of their choice. When the bus arrives customers with reserved seats only enter the bus. There will be no fight for tickets or seats.

On the other side admins of the company can easily assign drivers to buses and buses to routes. They can also easily add or remove resources within a very short period of time, which makes their service more efficient.

**Problems the project tries to solve**

We identified problems from both the customers and bus company sides.

**From customers side,**

* Buying ticket at the arrival of bus is time consuming as the bus will be waiting till all customers buy tickets and enter the bus. This kills the precious time of customers on every bus terminal the bus stops.
* Usually number of tickets sold surpasses number of seats available, this creates a competition between customers to buy ticket and enter the bus first to get a seat. This makes it energy demanding and difficult for physically disadvantageous people like elderlies, pregnant women, sick people, and disabled people to get a ticket and enter the bus with all the fights to win a single bus ticket.
* Usually customers go to bus terminals and “hope” for a bus they want to come. If it is their lucky day, the bus may arrive in 5 – 10 minutes. But if not, they would just be standing there and killing their time. So their schedule is based on a mere trust, which can easily be broken.

**From company’s side,**

* Companies cannot easily enumerate their available resources since there is a lot of paperwork to do. It is a time and energy consuming task to add or remove a resource since it requires taking out the archived documents and do the paperwork.
* Admins have to do many paperwork and cross checks to assign drivers to buses and buses to terminals, not to mention mistakes might also be made. This takes time.
* The buses are abused since they are usually overloaded with customers beyond their capacity. This is because tickets are sold when buses arrive at the terminal.