



MICROPROCESSOR SYSTEMS

Project Proposal

Project Name: GPS integration for NUST Shuttle Service

Group member	CMS
Abdur Rehman	337668
Syed Muhammad Abubakar	337385
Asad Ahmed	331881

Introduction:

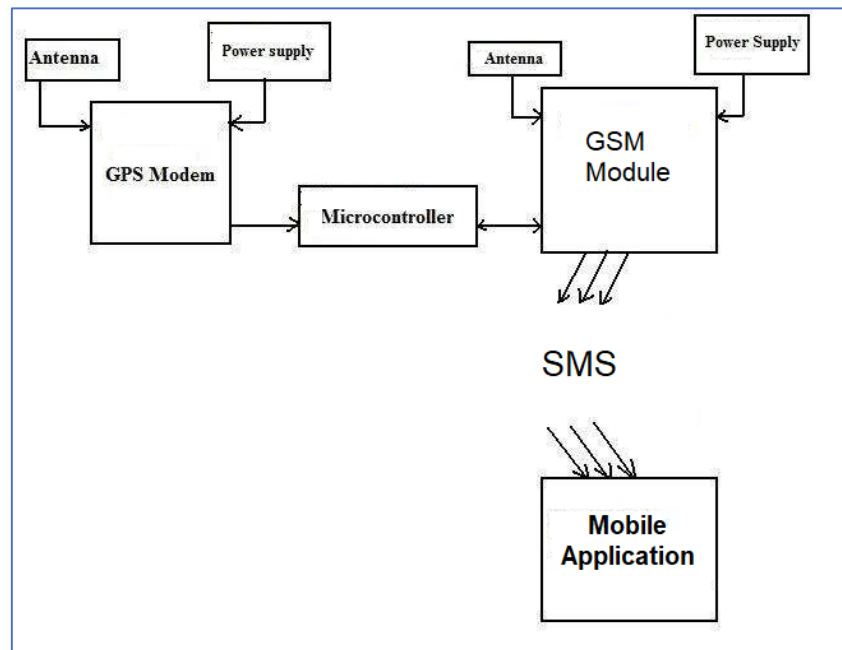
The shuttle service that operates in NUST consists of 7-8 shuttle buses roaming around NUST (approx. 2km x 2km) from 9-5 with no specific route and no tracking system. Which means that no shuttle is kept under observation while in operation that makes it very obstruse for the students to use. GPS integration is important for effective fleet management. Without GPS integration we cannot keep the drivers accountable and emergency handling becomes a big challenge. By integrating GPS we can monitor the current vehicle's address, it's speed and direction. There can be immediate alerts for emergencies and hourly/daily reports. Most importantly, by the integration drivers are aware of the monitoring, and managers know exactly where each vehicle is. GPS tracking also allows you to identify problems before they occur, saving time and money for the company. Furthermore, the students will be able to see the location of the shuttles and the nearest shuttle available for their planned destination. They will also be able to see the estimated arrival time of the shuttles so that they don't miss it in any case and can be ready on time.

Functional Specifications:

We intend to make an app for our integration, which will show the current location of the shuttles on a grid/map and display some useful information such as present coordinates. We plan to use a GSM module for communication between our device and the smart phone app and the communication will be over SMS. Basically, the ATmega32A chip would be taking data from the GPS module and communicating it in form of a grid through the GSM module to the cellular device.

In the end, our device will be attached to the shuttle, and through the GSM module will show relevant data and maps on smart phone devices via a specific app.

Block Diagram:



Preliminary List of Components:

1. ATmega16A
2. GPS module
3. Breadboards
4. GSM module
5. Resistors

List of relevant/target industries for project:

Since our project provides a real time location in an app, hence we plan to target the transport services such as:

- ➔ Nust Shuttle Service
- ➔ Svw1
- ➔ Careem
- ➔ Bykea

The End
