

An interface for mathematical assistant using textual, audio, video input/output

The following are the core requirements of this project.

Basic theme of this problem is as follows:

- This is an idea to develop a mathematical tool/application which accepts mathematical symbols, expressions, equations from the end user in the form of text, audio and video. This feature enhances capability of the application.

- This application also has the feature to develop mathematical solution/model of a problem by helping the user via text, audio and video features. But it is not the end. You can include any other feature, you consider better but after approval from your supervisor.

- ***You should explore other mathematical tools available in the market before you start work on your own project. This practice will open your mind and give you new ideas, experience and exposure in order to proceed on this project smoothly and comfortably.**

Draft List of Requirements for Application Backup and Restore System

The following are the core requirements of this project.

- Application should permanently store any change in settings/options with the facility of applying default settings (application settings or the registry can be used to permanently save settings). Proper user interface/form should facilitate the user to change and store settings.
- Application should have the mechanism of authentication. At first startup of the application, it should ask the user to select authentication mode from the following:
 - Password protected (user must enter user id and password every time to use the application)
 - Default (no password required to use the application)
- User should be able to define the physical paths (paths on hard disk) for backup and restore operations.
- Backup of code and database should be stored in hard disk with proper time/date postfix or prefix, so that the user can easily understand each backup.
- Backup/Restore of the code should be the simple backup/restore of the folders in which code files are stored, to the user-specified backup and restore path.
- Backup/Restore of the database should be the full backup of the database at target path and restore it directly from the target path to the database itself (any one tool from MS SQL Server, MySQL, Oracle)
- User should be able to define the backup overwrite settings, so that the existing backups can be managed without any problem. For this purpose, application shall provide the user with some options (Overwrite existing backup, delete existing backup to recycle bin, delete existing backup permanently)
- User should be able to perform backup/restore operations manually and automatically:
 - For manual operation, user shall be presented with a windows (desktop) application so that the user can perform the backup, restore, change in settings operations manually.
 - For automatic operation user shall save settings for automated backup/restore operations at startup, or time-to-time backups. For this purpose, the application shall utilize windows startup, registry operations and windows services.
- Application shall have an alert system to notify user about success or failure of backup/restore operations. Log files and/or email should be used for this purpose.

Draft List of Requirements for Goods Transport Management System (GTMS)

The following are the core requirements of this project.

➤ **Introduction**

This system helps to manage the Goods/Cargo Transport business. It is a normal practice in industry to ship its finished products/raw material and other goods within and out of the country.

The purpose of this section is to provide an introduction to the students. It will begin with an overview of the real world work the software is intended to help the users perform. It will continue with a brief discussion of the software features and functions at a very high level. Finally it will give a Glossary of terms that readers should refer to often.

➤ **2. Stakeholders**

Different parties involved in this business life cycle are.

1. Goods Transport Company
2. Container/Shipping Terminals
3. Transporters
4. Textile Mills Companies (clients)

➤ **2.1 Goods Transport Company (GTC)**

GTC usually have one head office and more than one branch offices in different cities. Company is supervised by the Owner/Director. There may be more than one partner in the company.

Branch Staff consist of Branch Manager, Marketing Agents (Assistant), Accountant, Account assistant.

➤ **2.2 Container/Shipping Terminals**

This is a separate company which deals in container. GTC and Text Mills will communicate with Container Terminals to get containers to load the cargo.

➤ **2.3 Transporters**

These are the individuals or a company who have vehicles (Truck or Long Vehicles) and offer their services for transportation of the cargo. GTC will contact the Transporter to hire a vehicle for the shipment of cargo.

➤ **2.4 Textile Mills Companies**

These are the actual business generator for GTC. Textile Mills has to ship their finished goods within or outside the country. They require the services of the transporter to carry their goods. A person of Textile Mill contact GTC to request for the arrangement of the shipment of goods.

➤ **Real World Work:**

The typical customers for Goods Transport Management System are Goods Transport Companies to whom this software will facilitate to manage their daily business transaction.

Textile Mills, individual or companies (Clients) who want to ship their finished products, raw material or household cargo are the actual business generator for GTC. Clients have to ship their cargo within or outside the country. They require vehicles to carry their goods.

Client contact GTC to do necessary arrangement for the shipment of cargo. Some time Textile Mills has to use specific Company's container to load its cargo like APL etc. Mills person gets confirmation about the availability of Container from Container/Shipping terminal and made instruction to GTC to use that particular container for this shipment. GTC also gets confirmation about the availability of same container from Shipping Terminal. GTC arrange Truck or long vehicle from the Transport Company or from any individual. GTC issue Voucher to the Vehicle driver after recording necessary information about this shipment. This Voucher has three copies. One copy is submitted to the Shipping Terminal when vehicle receive the container from the terminal. One copy is submitted to the Textile Mills or the owner of the cargo. Third copy is retained by the vehicle.

After placing the container on the vehicle terminal staff writes necessary information about the container on both copies of the Voucher one that is retained by the vehicle and other that which will be submit to the Mill.

Vehicle loads the cargo in the container from the place told by the GTC. Vehicle's entry and exist is recorded on Mill Gate. Vehicle off load the cargo at the destination place gets clearance receipt. Off load the container at the branch office of shipping terminal.

Vehicle owner submit the documents obtained from shipping terminal, from Mill on loading and offloading time, to the GTC branch office at destination city and receive its faire. GTC record all the information using these documents in its application related to this shipment.

GTC send the documents relevant to the Mill after keeping its duplicate record within the office. Bill is issued to the Client to collect charges for this shipment. Mill clears this bill through cheque. Complete record of these cheques is maintained in GTC office.

➤ **Few Modules of the Application**

1. Employee Management
2. User Management
3. Goods Transaction Management
4. Reports

Other modules can be added based on the requirements in the light of the above given description.

Draft List of Requirements for Multi-agent Based University Time Table Management System (MUTMS)

The following are the core requirements of this project.

A number of artificial intelligence systems are being used in educational institutes. All these approaches were developed for tutoring, teaching, or examination tasks. A few of them provide solution for administrative tasks like time table scheduling. Several educational institutes are still following manual system for this purpose. Therefore, to design and develop time table schedule for educational institutes has been remained a common and cumbersome problem. Its objective is to assist administrative personnel like chairman, coordinator or a director of an educational institute in developing time table without face to face interaction with other concerning persons. In the proposed multi-agent based system, we define three agents which communicate, coordinate, and cooperate with each other to achieve their objectives.

- The information capturing and saving agent captures data from user interfaces and enters it into the database.
- The information publishing agent presents data to the users.
- The environment monitoring and processing agent monitors the environment, does computation, and asks information publishing agent to send it to users.

Draft List of Requirements for Online Real Estate System

The following are the core requirements of this project.

It is an integrated property platform offering a wide array of quality property investments ranging from residential and luxurious to commercial options which include homes, villas, apartments, flats, farm houses, residential lands/plots, and commercial lands/plots, shops in markets and plazas in different cities throughout Pakistan. These services are not only restricted to buying and selling in real estate accommodation and property but also encompasses home, villa, shops and other kinds of property rentals and real estate leasing. These systems should handle all these on rent also.

- Registration of client / companies
- Client's requests and needs
- Agents Directory Management
- Customers to search for properties to buy/rent
- Buy Property, Sell Property or to Rent a Property
- Property Price
- Property consulting services and hold
- Lettings property management
- Maintain records of customers
- Benefits if you decide to buy sell or rent any real estate
- Biding Handling
- Handling advertisements
- Categories
- Reports of all the things