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Inventory management Android application

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ABSTRACT

The application has been developed keeping in mind the use of a centralized inventory managing system that could be accessed by all the authorized users, allow them to put forth requests and update the database accordingly. The usability of the application ranges from event managing to basic log keeping in small to medium-sized storages.

Keywords— *Event, Inventory, Managing, Android*

1. AIM

The primary goal of the application is to provide a user-friendly interface for authorization and updating as well as placing requests for various items available in the storage.

2. SOFTWARES USED

2.1 Android Studio

Android Studio is the official integrated development environment for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. The entire front-end of the system including the GUI is made on Android Studio.

2.2 PhpMyAdmin

PhpMyAdmin is a free open source platform used to administer MySQL with a web browser. PhpMyAdmin is is a popular and free open source tool used for administering MySQL with a web browser. Typical operations such as the management of databases, tables, indexes, permissions, and so on are executed with the user interface. Administrators can also use phpMyAdmin to directly execute any SQL statement.

2.3 Xampp

XAMPP stands for Cross-Platform (X), Apache (A), MySQL (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing purposes. Everything you need to set up a web server – server application (Apache), database (MySQL), and scripting language (PHP) – is included in a simple extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server is extremely easy as well.

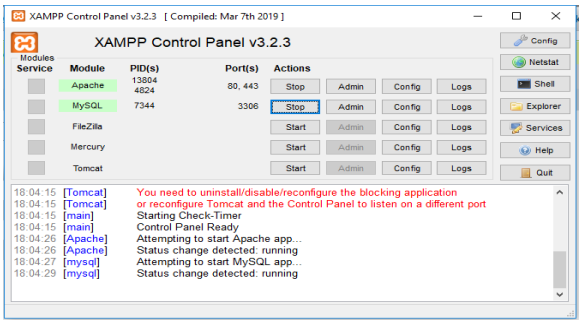


Fig. 1: XAMPP control panel

2.4 Postman

A postman is a powerful tool for performing integration testing with your API. It allows for repeatable, reliable tests that can be automated and used in a variety of environments and includes useful tools for persisting data and simulating how a user might actually be interacting with the system.

Postman allows you to create collections of integration tests to ensure your API is working as expected. Tests are run in a specific order with each test being executed after the last is finished. It stores information for running tests in different environments. Postman also allows you to store data from previous tests into global variables. These variables can be used exactly like environment variables.

3. WORKING

3.1 Overview

The program at its very basic performs CRUD functions. CRUD functions are an abbreviation to the basic database operations, namely

- Creating a Record - In the database, we insert a record.
- Reading Stored Records - Reading the stored data back.
- Updating Stored Records - update the existing data.
- Deleting Records - delete the existing data from the database.

For our purposes, we shall be using create, update and read operations only. The database that we are going to be using is created using a MySQL database administration tool called phpMyAdmin, the database will be stored in a remote server created on the computer using Xampp.

The first step is building the required Web APIs. This is because from the Android application, to communicate with our web server we need an interface called API. So our android device will send a request to our API, then our API will perform the requested task and it will give us the response related to the task.

3.2 Database creation

Using Xampp's phpMyAdmin extension we first create a database to perform the operations on. In this case, we have named the database android which contains the necessary table, "inventory". The table has 3 fields, which are "ID" (PRIMARY KEY)," items", "quantity". We have added 5 entries, to begin with

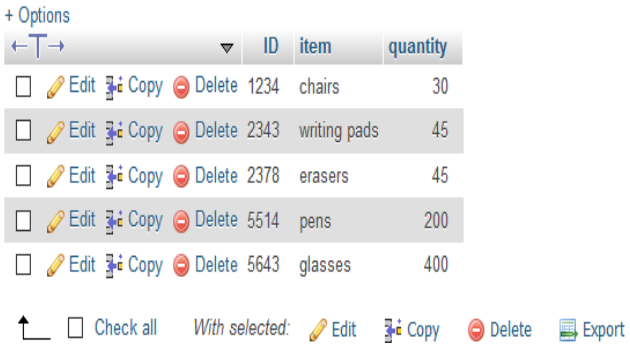


Fig. 2: Database creation

Table 1: Database table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	ID	int(11)			No	None			Change Drop More
2	item	varchar(100)	latin1_swedish_ci		No	None			Change Drop More
3	quantity	int(11)			No	None			Change Drop More

3.3 API and PHP files

The project requires 3 files for establishing a connection and performing CRUD operations on the database:

- **Constants.php**: In this file, we will define all the required constants e.g., database name, username, password etc.
- **DbConnect.php**: This fill will contain a class where we will connect to our MySQL database.
- **DbOperation.php**: The actual CRUD operation is performed inside this file. These MySQL functions will be passed onto the API. And we will have a file to function as the API
- **Api.php**: This is our API, we will send a request to this file only from the Android side. And this file will handle all the API calls.

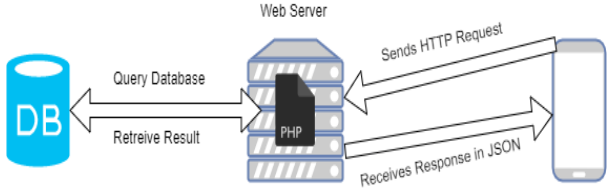
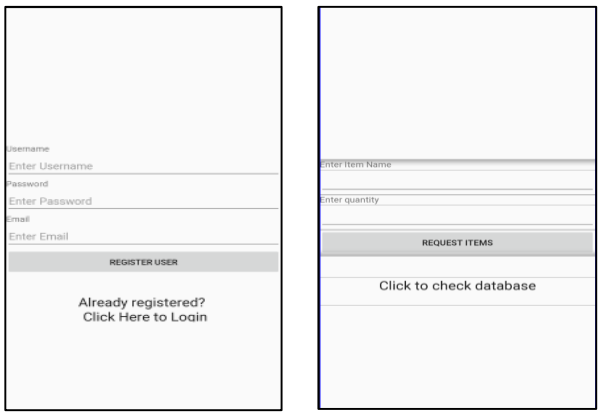


Fig. 3: API and PHP files

3.4 Creating a GUI for Android

We use Android studio to make the interface and link them to the API so that passed functions can be executed



(a) **(b)**

Fig. 4: (a) Register user, (b) Request item

- The first interface is concerned with the authorization of users for access to the required database.
- The second interface is for performing requests from the inventory and updating the table.
- Values upon being entered into the fields will be stored into the variables which will be passed onto the API file which will, in turn, pass them to the MySQL functions to be executed.
- The result will be displayed on the screen and the database will be updated accordingly.

4. CONCLUSION

Inventory management has to do with keeping accurate records of items that are available upon request of authorised clients. This often means having stock for items in inventory for totals and subtraction of the most recent items requested. When new stock arrives the items will be reclassified. Accurate maintaining figures on items in inventory makes it possible for the quick conveyance of information to sales personnel as to what is available and ready for utilization ant any given time for the clients. It is very important to keep the cost down while meeting regulation. Supply and demand is a delicate balance, and inventory management and high-quality software will make inventory management success. The ROI if inventory management will be seen in the forms of increased positive employee atmosphere in any company using this software as well as overall customer satisfaction.

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