### Project Synopsis: Robotics Inventory Management System

#### INTRODUCTION:

Database Management is fundamental in today's data-driven world, as efficiently organizing and managing information is crucial for progress. The undersigned students of 2nd year:

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have successfully completed a project on a **Database Management System for Robotics Inventory** that covers all aspects of managing inventory, logging transactions, and tracking user interactions with the system.

#### Case Study: Database Design for Robotics Inventory Management

#### Aim:

The purpose of this project is to design and develop a database for a **Robotics Lab Inventory Management System** that allows for efficient tracking and management of various components, equipment, and tools essential to robotics projects. The Robotics Lab inventory includes a variety of items such as electronic components, sensors, motors, and other hardware that students and lab personnel regularly use. The system also maintains a log of transactions, including additions, issues, and deletions of items, as well as records the individuals responsible for these actions.

This project aims to achieve the following:

* Efficiently manage stock and availability of items in the robotics inventory.
* Track the history of all inventory actions, with details on the person responsible and the action taken.
* Facilitate audit processes and provide insights into inventory usage patterns.

#### Functionalities:

* **Inventory Tracking**: The database maintains detailed records of all inventory items, including the item name and quantity.
* **User Authentication**: Secure login for administrators to ensure restricted access to inventory management functionalities.
* **Transaction Logging**: Every addition, issue, or deletion of an item is logged with details, including the name and roll number of the person responsible, to track accountability.
* **Real-time Inventory Updates**: Administrators can view up-to-date information on stock levels for each item.
* **Historical Transaction Record**: The database provides a complete transaction history, allowing users to review past transactions for auditing or analysis.

#### ER Diagram:

An ER Diagram would illustrate the primary entities of this database, which include:

* **Inventory**: Represents items with attributes like product id, product name and quantity.
* **Transactions**: Represents each transaction, detailing the product, quantity, transaction type (add, issue, delete), person’s name, roll number, and transaction date.
* **Admin**: Represents users authorized to access and manage the inventory system, with attributes like username and password.

