- **Final project for programming 2 course (First level)**
  - **Supermarket Management System**
- **System Requirements:**
- The system manages a super market and its inventory and allows creating invoices for each buy transaction.
- A product is defined with its ID, name, categories, buy price, selling price, expire date, and number of items available in the stock.
- When an item is sold out, its number of items is decreased by one.
- Clients that regularly buy from the super market are identified by Id, name, age, telephone number and their address (including street, town and home number).
- If a client buys more than 4000 L.E in one month, he will get a discount of 5% for all other invoices in the same month.
- Golden clients are clients who registered to the system for more than 5 years.
- Golden clients are identified by birth day and favorite product.
- If a golden client buys in his birth day he will get a discount of 10%, and if he buys his favorite product he will get a discount of 20%, otherwise there is a discount of 2% for any invoice for golden clients.
- The invoice includes date, time and sold products and their price, total initial price and total final price.
- Initial price includes the price of each item multiplied by its quantity, while the final price is the price after discount if any.
- Each invoice includes also the Id of the staff member who released it and the Id of its point of sale.

- Staff members are identified by Id, name, salary, phone number and address.
- Each staff member is given a private card.
- The card has Id, user name and a code to open the point of sale.
- If the total amount of invoices by a staff member increased over 100,000 L.E in a month he will get 500 L.E over his salary.
- The system checks the expire date of each item in the inventory to avoid selling it.
- The system should prints an alert if the number of items for any product is decreased less than 10. A weekly report is printed containing top 10 items sold in this week sorted according to their quantity.
- The system allows making discount for all items in one day or for specific items for a week.

Phase one:

- Provide class diagram that helps to design the system according to object oriented concepts.
- The Class diagram should include all relationships between classes.

Phase two

- Implement the system using Java.
- Implement al the system classes including different attributes and methods.
- Implement the main methods to run the system.
- Implement five objects from each class to allow testing the project.
- Use files to store the data associated with the implemented objects.

Bonus

- GUI to allow clients to select items graphically.
- Generating QR code for each product.
- Any other ideas in OOP concepts.