
Learning project (3 sessions)

From 28th november to 12th december 2024

Hands-on

The owner of a small business asked us to write a program for the daily management of his business. He is interested in tracking the stock of products, his sales and the obtained income.

Here is the information to be dealt with in the program.

- Product. The information to be stored for each product is:
 - Product code. Composed of three letters and a number.
 - Description. Text of 30 characters at most..
 - Stock. Amount of existing units in the shop.
 - Minimum stock. The minimum amount of a product stock to order more to the supplier.
 - Unit price. Price of the product per unit..
 - Discount. Sometimes, a percentage discount may be applied to the product for a certain period of time.
- Ticket. The information to be stored for each ticket is:
 - Ticket code. Represented by the ticket number generated on that day.
 - Time and date of the sale.
 - Total amount of sale.
 - Ticket lines.
- Ticket line. The information to be stored for each ticket line is:
 - Code of the sold product.
 - Description of the sold product.
 - Amount of units of the sold product.
 - Unit price of the sold product.
 - Applied discount. If there is no discount, its value will be 0.

The operations you can perform in the program are:

- New product. The user will be asked for the product data, checking if the entered product code and/or product description does not exist. Assume a maximum of 50 products.
- Remove a product. The product code will be asked to the user. If the product code exists, its information will be printed out on the screen and the user will be asked for a confirmation of the deletion. In case of deletion confirmation, that product will be removed from the structure (array), moving all the products one position to the left in order not to have gaps. If the product code does not exist, an error message will be displayed on the screen.
- Edit a product. The product code will be asked to the user. If the product code exists, the product information will be shown on the screen and the user could edit all the information except for the product code. If the entered product code does not exist, a message indicating that situation will be displayed.

- Search for a product. It is similar to editing a product, but in this case the information only is displayed, that is, the user cannot modify it.
- New ticket. The user can make a sale and create a new ticket. Assume a maximum of 100 tickets. When choosing this action, the user will be asked for the ticket lines one by one (maximum 10 per ticket) storing the following information:
 - Product code. If the product exists, all its information will be displayed on the screen (description, stock, price per unit and, in case of having discount, the price after applying the discount).
 - Units to be sold. If the number of units is greater than the available stock, a warning message will be displayed and the number of units will be asked again. To cancel the creation of a ticket line, the user will enter 0.

After each ticket line, the user will be asked for introducing a new line. If the answer is yes, the data corresponding to a new ticket line will be asked. Otherwise, a confirmation of ticket creation will be required. In the affirmative case, the total amount of the ticket will be obtained and the new ticket with all the information will be stored (remember to properly update the stock units of each product).

- Search for/Remove a ticket. A ticket could be search for its code. If the ticket is found, all its information will be displayed on the screen and a menu with the following options will be displayed:: "M - Go back to the main menu || R - Remove ticket". If the user chooses M, he/she go back to the main menu; while R is chosen, the ticket will be removed and all the tickets after it will be moved one position to the left in order to avoid gaps in the array. In case the required ticket does not exist, a warning message will be displayed.
- Check stock. This action will go through the stock products and show those with a stock lower than or equal to the minimum stock such that the user can order more units from the supplier. For each product, all its information will be displayed. The list must be tabulated.