1. Inventory Management System

Objective:

To store, update, and display product details such as Product ID, Name, Quantity, and Price using arrays.

Program (Example in C language):

```c
#include <stdio.h>
#include <string.h>

int main() {
    int productID[100], quantity[100];
    float price[100];
    char name[100][50];
    int count = 0, choice, id, i;

    while(1) {
        printf("\n--- Inventory Management System ---\n");
        printf("1. Add Product\n");
        printf("2. Display Inventory\n");
        printf("3. Update Quantity\n");
        printf("4. Search Product\n");
        printf("5. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);

        if (choice == 1) {
            printf("\nEnter Product ID: ");
            scanf("%d", &productID[count]);

            printf("Enter Product Name: ");
            scanf("%s", name[count]);

            printf("Enter Quantity: ");
            scanf("%d", &quantity[count]);

            printf("Enter Price: ");
```

```c
            scanf("%f", &price[count]);

            count++;
            printf("Product added successfully!\n");

    } else if (choice == 2) {
            printf("\n--- Inventory List ---\n");
            printf("ID\tName\tQuantity\tPrice\n");
            for (i = 0; i < count; i++)
                    printf("%d\t%s\t%d\t\t%.2f\n", productID[i], name[i], quantity[i], price[i]);

    } else if (choice == 3) {
            printf("\nEnter Product ID to Update Quantity: ");
            scanf("%d", &id);
            for (i = 0; i < count; i++) {
                    if (productID[i] == id) {
                            printf("Enter New Quantity: ");
                            scanf("%d", &quantity[i]);
                            printf("Quantity Updated Successfully!\n");
                            break;
                    }
            }

    } else if (choice == 4) {
            printf("\nEnter Product ID to Search: ");
            scanf("%d", &id);
            for (i = 0; i < count; i++) {
                    if (productID[i] == id) {
                            printf("\nProduct Found:\n");
                            printf("ID:    %d\nName:    %s\nQuantity:    %d\nPrice:    %.2f\n",
productID[i], name[i], quantity[i], price[i]);
                            break;
                    }
            }

    } else if (choice == 5) {
            printf("Exiting Program...\n");
            break;

    } else {
            printf("Invalid Choice! Try Again.\n");
    }
}
```

```
    return 0;
}
```

Applications:

✔ Tracking stock levels:
Helps businesses keep track of available products and avoid overstocking or shortage.

✔ Updating inventory:
Allows modification of product quantities whenever items are added or sold.

✔ Generating product availability reports:
Displays all available products, their stock status, and pricing details for decision-making.

✔ Useful in:

Retail stores

Warehouses

Grocery shops

E-commerce platforms