

# INVENTORY MANAGEMENT FOR A SMALL SHOP

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

```
#include <stdlib.h>
```

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

```
#define DB_FILE "inventory.dat"
```

```
typedef struct {
```

```
    int id;
```

```
    char name[30];
```

```
    int quantity;
```

```
    float price;
```

```
} Item;
```

```
void clearInputBuffer(void) {
```

```
    int c;
```

```
    while ((c = getchar()) != '\n' && c != EOF) {}
```

```
}
```

```
int readLine(char *buf, size_t size) {
```

```
    if (fgets(buf, (int)size, stdin) == NULL) return 0;
```

```
    buf[strcspn(buf, "\n")] = '\0';
```

```
    return 1;
```

```
}
```

```
void addItem(void) {  
  
    FILE *fp = fopen(DB_FILE, "ab");  
  
    if (!fp) {  
        printf("Error: Cannot open database file.\n");  
        return;  
    }  
  
    Item item;  
  
    printf("Enter Item ID: ");  
  
    if (scanf("%d", &item.id) != 1) { clearInputBuffer(); fclose(fp); return; }  
  
    clearInputBuffer();  
  
    printf("Enter Item Name: ");  
  
    if (!readLine(item.name, sizeof(item.name))) { fclose(fp); return; }  
  
    printf("Enter Quantity: ");  
  
    if (scanf("%d", &item.quantity) != 1) { clearInputBuffer(); fclose(fp); return; }  
  
    printf("Enter Price: ");  
  
    if (scanf("%f", &item.price) != 1) { clearInputBuffer(); fclose(fp); return; }  
  
    fwrite(&item, sizeof(Item), 1, fp);  
  
    fclose(fp);  
  
    printf("Item added successfully.\n");  
}
```

```
void displayItems(void) {  
  
    FILE *fp = fopen(DB_FILE, "rb");  
  
    if (!fp) {  
  
        printf("No inventory file found. Add items first.\n");  
  
        return;  
  
    }  
  
  
    Item item;  
  
    int any = 0;  
  
  
  
    printf("\n%-6s %-30s %-10s %-10s\n", "ID", "NAME", "QTY", "PRICE");  
    printf("-----\n");  
  
  
    while (fread(&item, sizeof(Item), 1, fp) == 1) {  
  
        any = 1;  
  
        printf("%-6d %-30s %-10d %-10.2f\n", item.id, item.name, item.quantity, item.price);  
  
    }  
  
  
    if (!any) printf("(No items found)\n");  
  
  
    fclose(fp);  
}  
  
  
void searchItem(void) {  
  
    FILE *fp = fopen(DB_FILE, "rb");  
  
    if (!fp) {
```

```
    printf("No inventory file found.\n");  
  
    return;  
}
```

```
int id, found = 0;  
  
printf("Enter Item ID to search: ");  
  
if (scanf("%d", &id) != 1) { clearInputBuffer(); fclose(fp); return; }
```

```
Item item;  
  
while (fread(&item, sizeof(Item), 1, fp) == 1) {  
  
    if (item.id == id) {  
  
        found = 1;  
  
        printf("\nFound:\nID: %d\nName: %s\nQuantity: %d\nPrice: %.2f\n",  
            item.id, item.name, item.quantity, item.price);  
  
        break;  
    }  
}
```

```
  
if (!found) printf("Item not found.\n");  
  
fclose(fp);  
}
```

```
void updateItem(void) {  
  
    FILE *fp = fopen(DB_FILE, "rb+");  
  
    if (!fp) {  
  
        printf("No inventory file found.\n");  
  
        return;  
    }  
}
```

```
}
```

```
int id, found = 0;
```

```
printf("Enter Item ID to update: ");
```

```
if (scanf("%d", &id) != 1) { clearInputBuffer(); fclose(fp); return; }
```

```
clearInputBuffer();
```

```
Item item;
```

```
while (fread(&item, sizeof(Item), 1, fp) == 1) {
```

```
    if (item.id == id) {
```

```
        found = 1;
```

```
        printf("Current Name: %s\n", item.name);
```

```
        printf("Enter new name (press Enter to keep same): ");
```

```
        char newName[30];
```

```
        if (!readLine(newName, sizeof(newName))) { fclose(fp); return; }
```

```
        if (strlen(newName) > 0) strncpy(item.name, newName, sizeof(item.name) - 1);
```

```
        printf("Current Quantity: %d\n", item.quantity);
```

```
        printf("Enter new quantity: ");
```

```
        if (scanf("%d", &item.quantity) != 1) { clearInputBuffer(); fclose(fp); return; }
```

```
        printf("Current Price: %.2f\n", item.price);
```

```
        printf("Enter new price: ");
```

```
        if (scanf("%f", &item.price) != 1) { clearInputBuffer(); fclose(fp); return; }
```

```
        fseek(fp, -(long)sizeof(Item), SEEK_CUR);
```

```
fwrite(&item, sizeof(Item), 1, fp);
```

```
printf("Item updated successfully.\n");
```

```
break;
```

```
}
```

```
}
```

```
if (!found) printf("Item not found.\n");
```

```
fclose(fp);
```

```
}
```

```
void deleteItem(void) {
```

```
FILE *fp = fopen(DB_FILE, "rb");
```

```
if (!fp) {
```

```
    printf("No inventory file found.\n");
```

```
    return;
```

```
}
```

```
FILE *temp = fopen("temp.dat", "wb");
```

```
if (!temp) {
```

```
    printf("Error: Cannot create temp file.\n");
```

```
    fclose(fp);
```

```
    return;
```

```
}
```

```
int id, found = 0;
```

```
printf("Enter Item ID to delete: ");
```

```
if (scanf("%d", &id) != 1) { clearInputBuffer(); fclose(fp); fclose(temp); return; }
```

```
Item item;
```

```
while (fread(&item, sizeof(Item), 1, fp) == 1) {
```

```
    if (item.id == id) {
```

```
        found = 1; // skip writing this record
```

```
    } else {
```

```
        fwrite(&item, sizeof(Item), 1, temp);
```

```
    }
```

```
}
```

```
fclose(fp);
```

```
fclose(temp);
```

```
remove(DB_FILE);
```

```
rename("temp.dat", DB_FILE);
```

```
if (found) printf("Item deleted successfully.\n");
```

```
else printf("Item not found.\n");
```

```
}
```

```
int main(void) {
```

```
    int choice;
```

```
    while (1) {
```

```
        printf("\n===== SMALL SHOP INVENTORY (C) =====\n");
```

```
        printf("1. Add Item\n");
```

```
printf("2. View All Items\n");

printf("3. Search Item (by ID)\n");

printf("4. Update Item\n");

printf("5. Delete Item\n");

printf("0. Exit\n");

printf("Enter choice: ");

if (scanf("%d", &choice) != 1) {

    clearInputBuffer();

    printf("Invalid input.\n");

    continue;

}

switch (choice) {

    case 1: addItem(); break;

    case 2: displayItems(); break;

    case 3: searchItem(); break;

    case 4: updateItem(); break;

    case 5: deleteItem(); break;

    case 0: printf("Exiting...\n"); return 0;

    default: printf("Invalid choice.\n");

}

}

}
```