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#include <stdio.h>
#include <stdlib.h>
#include <string.h>

struct product {
   int id;
   char name[50];
   int quantity;
   float price;
};

void addProduct();
void viewProducts();
void searchProduct();
void updateProduct();
void deleteProduct();

int main() {
   int choice;

   while (1) {
      printf("\n===== Inventory Management System =====\n");
      printf("1. Add Product\n");
      printf("2. View Products\n");
      printf("3. Search Product\n");
      printf("4. Update Product\n");
      printf("5. Delete Product\n");
      printf("6. Exit\n");
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        printf("Enter your choice: ");
        scanf("%d", &choice);

        switch (choice) {
            case 1: addProduct(); break;
            case 2: viewProducts(); break;
            case 3: searchProduct(); break;
            case 4: updateProduct(); break;
            case 5: deleteProduct(); break;
            case 6: exit(0);
            default: printf("Invalid choice!\n");
        }
    }
    return 0;
}

void addProduct() {
    struct product p;
    FILE *fp = fopen("inventory.dat", "ab");

    printf("Enter Product ID: ");
    scanf("%d", &p.id);
    printf("Enter Product Name: ");
    scanf("%s", p.name);
    printf("Enter Quantity: ");
    scanf("%d", &p.quantity);
    printf("Enter Price: ");
    scanf("%f", &p.price);
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    fwrite(&p, sizeof(p), 1, fp);
    fclose(fp);
    printf("Product added successfully!\n");
}

void viewProducts() {
    struct product p;
    FILE *fp = fopen("inventory.dat", "rb");

    if (fp == NULL) {
        printf("No records found.\n");
        return;
    }

    printf("\nID\tName\tQuantity\tPrice\n");
    while (fread(&p, sizeof(p), 1, fp)) {
        printf("%d\t%s\t%d\t\t%.2f\n",
               p.id, p.name, p.quantity, p.price);
    }
    fclose(fp);
}

void searchProduct() {
    int id, found = 0;
    struct product p;
    FILE *fp = fopen("inventory.dat", "rb");
```

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    printf("Enter Product ID to search: ");
    scanf("%d", &id);

    while (fread(&p, sizeof(p), 1, fp)) {
        if (p.id == id) {
            printf("Product Found: %s | Qty: %d | Price: %.2f\n",
                p.name, p.quantity, p.price);
            found = 1;
            break;
        }
    }
    fclose(fp);

    if (!found)
        printf("Product not found.\n");
}

void updateProduct() {
    int id, found = 0;
    struct product p;
    FILE *fp = fopen("inventory.dat", "rb+");

    printf("Enter Product ID to update: ");
    scanf("%d", &id);

    while (fread(&p, sizeof(p), 1, fp)) {
        if (p.id == id) {
            printf("Enter new quantity: ");
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            scanf("%d", &p.quantity);
            printf("Enter new price: ");
            scanf("%f", &p.price);

            fseek(fp, -sizeof(p), SEEK_CUR);
            fwrite(&p, sizeof(p), 1, fp);
            found = 1;
            break;
        }
    }
    fclose(fp);

    if (found)
        printf("Product updated successfully!\n");
    else
        printf("Product not found.\n");
}

void deleteProduct() {
    int id;
    struct product p;
    FILE *fp = fopen("*
```